Volume I- Response to Comments

GSX Imperial Valley Facility Expansion Final Environmental Impact Report

State Clearinghouse No. 90010086

lead Agency:

County of Imperial
Planning Department
939 Main Street
El Centro, CA 92243-2856
(6 19) 339-4236
Contact: Jurg Heuberger, Planning Director

Prepared by:

ERC Environmental and Energy Services Co. (ERCE)
5510 Morehouse Drive
San Diego, CA 92 12 1

January 1991

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LIST OF APPENDICES

SECTION 1
INTRODUCTION

The following document, in conjunction with the Revised Draft Environmental Impact Report (DEIR) for GSX Imperial Valley Facility Expansion (SCH: 90010086), constitutes the Final EIR (FEIR). Volume 1 of the FEIR contains copies of all letters received during public review of the DEIR and written responses to those comments; and the transcript from the public hearing held on September 12, 1990, and written responses to comments made at the hearing. Volume 2 of the FEIR is the August 1990 Draft EIR with revisions incorporated into the text. The revisions in Volume 2 are indicated by striking through old text (~~strike through~~) and by underlining new text (underlining).

These environmental documents address potential impacts resulting from or related to the construction and operation of the proposed GSX Services Imperial Valley Facility expansion in Imperial Valley, California. The facility owner is GSX Services (Imperial Valley) Inc., doing business as Laidlaw Environmental Services, Inc. The GSX facility currently receives and disposes of hazardous solids (primarily contaminated soils) and in the future plans to treat and dispose of both hazardous and non-hazardous wastes. It is located roughly 6 miles west of Westmorland.

Both volumes of this FEIR have been prepared in accordance with the State of California's guidelines for the implementation of the California Environmental Quality Act (CEQA) as amended. The DEIR was published on August 16, 1990, and was circulated through the State Clearinghouse. All governmental agencies and private parties known to have a direct interest in or review-and-approval authority over all or portions of the proposed project were mailed copies of the DEIR. In addition, the availability of the DEIR was advertised in local newspapers and copies of the DEIR were distributed to city halls, local libraries and chambers of commerce. The review period for the DEIR began August 17, 1990 and ended October 2, 1990. A public hearing was conducted in Westmorland on September 12, 1990.

Written comments regarding the project and the DEIR were received by the Imperial County Planning Department during public review of the DEIR. These letters are in Section 2, Written Comments and Responses. At the end of Section 2 are three supplemental letters from the California Department of Health Services, the California Air Resources Board, and Imperial County Air Pollution Control District, agencies which will be involved in permitting and monitoring the facility. Specific comments within the letters are numbered in the margins of each letter. Responses to all numbered comments are found on the pages immediately following each letter. Comments and responses have been numbered consecutively from 1 to 317.

Section 3 contains the transcript of comments made at the public hearing. The comments were responded to at the hearing; these responses are also recorded in the transcript. An additional response to one comment at the hearing is at the end of the transcript. Section 4 lists references used in preparing responses to comments.

SECTION 2
WRITTEN COMMENTS AND RESPONSES

Letters of comment are reproduced here as received; a number has been placed in the margin to identify each substantive comment. Responses follow each letter and are numbered to correspond to the comment. Some of the comments requested details of the project that were beyond the scope of the EIR to provide. The Draft EIR is, by necessity, a summary of other documents which focus on particular aspects of the facility, or are applications for specific permits. The principal sources for project information used for the Draft EIR were:

- The 26-volume Resource Conservation and Recovery Act (RCRA) Permit Application and Report of Waste Discharge for GSX Services (Imperial Valley), Inc. prepared by Environmental Technology Engineering, Inc. (ETE) in 1989, which addresses the hazardous waste treatment and disposal components of the planned expansion.

- The 6-volume Report of Waste Discharge; Permit Applications for GSX Services (Imperial Valley), Inc. prepared by ETE in 1989, which addresses the non-hazardous waste treatment and disposal components of the planned expansion.

- The Authority to Construct permit application, which addresses air emissions of the proposed facility during operation.

- The Conditional Use Permit application to Imperial County Planning Department.

All these documents are on file at the Imperial County Planning Department. The response to comments requesting more information is often a referral to one of the above sources. Readers may also be referred to the Code of Federal Regulations (CFR) or the California Code of Regulations (CCR) in responses to comments.

STATE OF CALIFORNIA-OFFICE OF THE GOVERNOR GEORGE DEUKMEJIAN Governor

OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET
SACRAMENTO CA 95814

Oct 01, 1990

RICHARD CABANILLA
IMPERIAL COUNTY
939 MAIN STREET
EL CENTRO, CA 92243

RECEIVED
1990
IMPERIAL COUNTY
BUILDING DIVISION

Subject: EXPANSION OF CLASS I/II FACILITY
SCH # 90010086

Dear RICHARD CABANILLA:

The State Clearinghouse has submitted the above named draft Environmental Impact Report (EIR) to selected state agencies for review. The review period is now closed and the comments from the responding agency(ies) is(are) enclosed. On the enclosed Notice of Completion form you will note that the Clearinghouse has checked the agencies that have commented. Please review the Notice of Completion to ensure that your comment package is complete. If the comment package is not in order, please notify the State Clearinghouse immediately. Remember to refer to the project's eight-digit State Clearinghouse number so that we may respond promptly.

Please note that Section 21104 of the California Public Resources Code required that:

> "a responsible agency or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency."

Commenting agencies are also required by this section to support their, comments with specific documentation. These comments are forwarded for your use in preparing your final EIR. Should you need more information or clarification, we recommend that you contact the commenting agency(ies).

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact Terri Lovelady at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

David C. Nunenkamp
Deputy Director, Permit Assistance

Enclosures

cc: Resources Agency

Appendix F

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 916/445-0613

SCH # [illegible]

Project Title: Expansion of Class I/II Facility

Lead Agency: Imperial County Planning Dept.
Contact Person: Richard Cabanilla
Street Address: 939 Main Street
Phone: (619) [illegible]
City: El Centro, CA
Zip: 92243
County: Imperial

Project Location

County: Imperial
City/Nearest Community: Westmorland, CA
Cross Streets: Garvey Road
Total Acres: 640 acres
Assessor's Parcel No. 034-030-28-01
Section: 16
Twp. 13
Range: 12
Base: SBBM
Within 2 Miles: State Hwy #: 86
Waterways: Trifolium Canal/Drain/Westside Main
Airports: --
Railways: --
Schools: --

Document Type

CEQA:
- [ ] NOP
- [ ] Early Cons
- [ ] Neg Dec
- [x] Draft EIR
- [ ] Supplement/Subsequent
- [ ] EIR (Prior SCH No.) ______
- [ ] Other ______

NEPA:
- [ ] NOI
- [ ] EA
- [ ] Draft EIS
- [ ] FONSI

Other:
- [ ] Joint Document
- [ ] Final Document
- [ ] Other ______

Local Action Type

- [ ] General Plan Update
- [ ] General Plan Amendment
- [ ] General Plan Element
- [ ] Community Plan
- [ ] Specific Plan
- [ ] Master Plan
- [ ] Planned Unit Development
- [ ] Site Plan
- [x] Rezone
- [ ] Prezone
- [x] Use Permit
- [ ] Land Division (Subdivision, Parcel Map, Tract Map, etc.)
- [ ] Annexation
- [ ] Redevelopment
- [ ] Coastal Permit
- [ ] Other ______

Development Type

- [ ] Residential: Units ____ Acres ____
- [ ] Office: Sq.ft. ____ Acres ____ Employees ____
- [ ] Commercial: Sq.ft. ____ Acres ____ Employees ____
- [x] Industrial: Sq.ft. N/A Acres 640 Employees 20
- [ ] Educational ______
- [ ] Recreational ______
- [ ] Water Facilities: Type ____ MGD ____
- [ ] Transportation: Type ____
- [ ] Mining: Mineral ____
- [ ] Power: Type ____ Watts ____
- [x] Waste Treatment: Type Hazardous/Non Hazardous
- [x] Hazardous Waste: Type Class I/II
- [ ] Other: ______

Project Issues Discussed in Document

- [x] Aesthetic/Visual
- [x] Agricultural Land
- [x] Air Quality
- [x] Archeological/Historical
- [ ] Coastal Zone
- [x] Drainage/Absorption
- [x] Economic/Jobs
- [ ] Fiscal
- [x] Flood Plain/Flooding
- [ ] Forest Land/Fire Hazard
- [x] Geologic/Seismic
- [ ] Minerals
- [x] Noise
- [ ] Population/Housing Balance
- [x] Public Services/Facilities
- [ ] Recreation/Parks
- [ ] Schools/Universities
- [ ] Septic Systems
- [ ] Sewer Capacity
- [x] Soil Erosion/Compaction/Grading
- [x] Solid Waste
- [x] Toxic/Hazardous
- [x] Traffic/Circulation
- [x] Vegetation
- [x] Water Quality
- [x] Water Supply/Groundwater
- [ ] Wetland/Riparian
- [x] Wildlife
- [x] Growth Inducing
- [x] Landuse
- [x] Cumulative Effects
- [ ] Other ______

Present Land Use/Zoning/General Plan Use Hazardous Waste Site X-3 (Heavy Agricultural Zone)

Project Description (See Draft EIR - Attached Hereto)

CLEARINGHOUSE CONTACT: 916/445-0613
TERRI LOVELADY

STATE REVIEW BEGAN: 8-17-90

DEPT REV TO AGENCY: 9-24

AGENCY REV TO SCH : 9-28

SCH COMPLIANCE : 10-1

PLEASE RETURN NOC WITH ALL COMMENTS

AQMD/APCD: 10 (Resources: 8/18)

CMT	SNT		CMT	SNT	
	●	Resources Agency			[redacted]
		[redacted]		●	ARB
	●	Conservation	✓	●	CA Waste Mgmt Bd
	●	Fish & Game			[redacted]
		[redacted]		●	Reg. WQCB # 7
	●	Reclamation			[redacted]
		[redacted] DWR			
		[redacted]			
	●	Caltrans # 11			
		[redacted]			
	●	Food & Ag			
		[redacted]			
	●	Health TOXIC			

"S" = sent by lead / "*" = sent by SCH)

UNITED STATES MARINE CORPS
U.S. MARINE CORPS AIR STATION
YUMA, ARIZONA 85369-5001

IN REPLY REFER TO:
11000
3AQ
22 AUG 1990

Mr. Jurg Heuberger, Planning Director
Planning Department
Imperial County
939 Main Street
El Centro, CA 92243-2856

Dear Mr. Heuberger,

This Command has reviewed the Environmental Impact Report prepared by ERC Environmental and Energy Services Company for the
1 operation of the proposed GSX Services facility expansion in Imperial Valley, California. This facility causes no problem for our air operations within the Chocolate Mountains Aerial Gunnery Range.

Thank you for this opportunity to comment.

Sincerely,

T. G. Manfredi

T. A. MANFREDI
Acting, Community Planning &
Liaison Officer
By direction of the
Commanding Officer

RECEIVED
AUG 27 1990
IMPERIAL COUNTY
BUILDING DIVISION

U. S. Marine Corps

1. Comment noted.

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM
REGION 4
246 WEST BROADWAY, SUITE 360
LONG BEACH, CA 90802
(213) 5904966

OCT 03 1990

Mr. Jurg Heuberger
Imperial County Planning Department
939 Main Street
El Centro, California 92243-2856

Dear Mr. Heuberger:

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE GSX (LAIDLAW) IMPERIAL VALLEY FACILITY EXPANSION (EPA ID NO. CAD000633164)

The California Department of Health Services (DHS) is taking this opportunity to provide comments on the Draft Environmental Impact Report for the GSX (Laidlaw) Imperial Valley Facility Expansion, dated August 1990. Our major comments are summarized in the section General Comments; additional specific concerns are addressed in the section Specific Comments.

If you have any questions regarding these comments, please contact Joe J. Zarnoch of my staff at (213) 590-4872.

Sincerely,

Carmelita Lampino
Unit Chief
Facility Permitting Branch

Enclosures

cc: Office of Permit Assistance
1400 Tenth street
Sacramento, CA 95814

CEQA Tracking Center
Alternative Technology Division
Department of Health Services
Toxic Substances Control Program
714/744 P street
Sacramento, CA 94234-7320

GENERAL COMMENTS

1. DHS will further evaluate potential VOC emissions from proposed facility operations. Continued evaluation will occur during the permit application review process and from consultation with air pollution control agencies. VOC emission sources of concern are the proposed evaporation tanks and combustion products of the two steam generators.

02 The final EIR should evaluate other treatment technologies for the wastes proposed for liquid evaporation. The best available technology my not have been examined in the draft EIR. The alternatives should include treatment methods that do not involve the release of VOCs to the ambient environment.

The final EIR should evaluate mitigation measures to control products of incomplete combustion being emitted from the proposed steam generators being co-fired with VOCs (even if the concentration of halogenated hydrocarbons is less #an 100 ppm). The description of the carbon adsorptionunit should include amonitoring system to determine VOC breakthrough. A dual carbon adsorption system (i.e., a system with back-up capabilities) would be preferred since unit operations could continue if initial breakthrough did occur.

2. Fugitive dust containing radioactive particles from the geothermal landfills could pose significant health threats to facility workers or nearby receptors, especially since the facility is subject to severe
03 wind conditions. The final EIR should further evaluate mitigation controls for this unit as well as for the transportation of radioactive geothermal wastes.

3. An off-site truck transportation accident, involving the release and possible ignition of hazardous wastes, could pose a significant health threat to nearby receptors. The severity of such an incident is difficult to predict with uncontrolled variables such as accident location, wind speed and direction, etc. Emergency responses might
04 mitigate the consequences of this type of accident, but not necessarily to a level of insignificance. DHS recommends that the possibility of an off-site transportation accident, with potential significant impacts, be addressed in the Unavoidable Adverse Environmental Effects Section of the final EIR and Section 3.9.2.2.

4. DHS concurs that the existing driveway to the facility should be
05 improved to allow two-lane directional travel and improve safety. Moreover, an alternative mad, providing additional access to the facility for emergency purposes, should be constructed.

5. DHS concurs with conclusions that the site area may be in rapid geologic
06 change, therefore, it is important to define the geology adequately, especially the western portion of the facility.

6. DHS concurs that the screened intervals in a number of monitoring wells may be inappropriately designed (i.e., too long) to allow accurate monitoring. DHS hopes to discuss this issue with other relevant agencies during the permit application review process.

7

7. The draft EIR indicates that there is a lack of consistency in defining the uppermost aquifer in various parts of the site. Again, DHS hopes to discuss this issue with other relevant agencies during the permit application review process.

a

SPECIFIC COMMENTS

Table ES-l, Air Quality/Climatology Issue

9 VOC emissions from the proposed treatment and storage facility as well as combustion products from the steam generators are not addressed under impacts.

Table Es-l, Health and Safety Issue

10 Potential emissions of radioactive particles in dust generated during the transport of geothermal wastes is not addressed under impact or mitigation.

Page 1-3, Paragraph 2

11 EHS is the lead agency under CEQA for the project proposed, but the facility can not store, treat or dispose of hazardous waste without a permit from other agencies such as the Environmental Protection Agency (EPA) and DHS.

Page 2-1, Bullet It following first paragraph

1 Include disposal of hazardous waste in landfills.

Table 2-2

3 Change "Title 22, CAP to "Title 22, CCR." CCR is the acronym for California Code of Regulations. This change should be made for all following Title 22 references.

Page 2-16. Paragraph 5

1 Describe how each shipment will be tested to verify that the wastes do not contain free liquids.

Page 2-17. Paragraph 4

15 The draft EIR states that the treatment of geothermal wastes prior to lanfilling is not proposed. However, untreated disposal of these wastes could not occur unless the wastes were deemed to be non-hazardous under applicable regulations.

Page 2-19, Paragraph 5

16 Describe the HWSU solids receiving area and provide details of the construction of this area. Describe VOC emission and dust controls.

Page 2-21 Paragraph 3

17 Indicate number and capacity of tanks proposed for sludge processing.

Page 2-21, Paragraph 5

18 Indicate if the liquid receiving tanks and the tank truck rinseate tank are covered or not. Indicate number and capacity of tanks.

Page 2-22, Paragraph 2

19 The number of evaporation tanks is specified as eight, yet Figures 2-3 and 2-4 show four proposed tanks and two future tanks. Please provide the following information: capacity of tanks, method for VOC content determination, and methods to preclude waste incompatibility.

Page 2-22, Paragraph 3

20 Indicate if the liquid bulking tanks are covered or not. Indicate number and capacity of tanks.

Page 2-22, Paragraph 4

21 Indicate type of equipment (e.g., tanks) proposed for treating liquids requiring stabilization. If tanks are being proposed, indicate number and capacity of tanks. Describe the VOC stripper system.

Page 2-23, Paragraph 2

Please clarify the descriptions in this paragraph. Note that the carbon absorption unit should probably be changed to carbon adsoxption unit. Describe what vapors will pass through an adsorption unit and describe the type of adsorption unit. State
22 that vapor streams containing greater than a 100 ppm concentration of halcgenated hydrocarbons will be directed to the refrigeration/condenser and carbon adsorption unit. Describe how the halogenated organic concentration will be monitored.

Page 2-23, Paragraph 3

Please clarify which VOCs would be directed to the carbon
23 adsorption unit. Describe final disposition of carbon used in adsorption unit. Will carbon be regenerated or eventually disposed of in landfill?

Pa[redacted] 2-24, Paragra[redacted] 2

Describe the construction of the NWSU solids receiving area, e.g. is it a concrete slab? Describe the number, capacity and design
24 (covered or not) of the storage tanks for liquids and sludges. Specify testing procedures to determine these wastes are non-hazardous.

Page 2-24, Paragraph 4

25 Describe the construction of the curbed areas in Area N-100, e.g., will they be concrete?

Page 2-25, Paragraph 2

26 Describe the number, capacity and design (covered or not) of storage tanks for area N-150 A.

Page 2-25, Paragraph 3

27 Indicate if oils destined for off-site disposal will be tested for compliance with land disposal restriction standards.

Page 2-25, Paragraph 4

Change title of Section 2.4.4 to Hazardous Waste Drum Storage Area (DSA) if only hazardous waste storage, as stated, is proposed. Describe the three classes of hazardous waste to be separated.
28 Describe type and height of walls separating incompatible wastes. Describe how drums will be sampled and tested as a check with manifest descriptions. Indicate the number of drums to be sampled in a truckload.

Page 2-26. Paragraph 3

The drum shredder should have a secondary containment structure to control the release of residual liquid wastes from drums.

Page 2-27, top of page

3 Emissions may not necessarily be destroyed. The carbon adsorption unit captures organic compounds; the destruction efficiency of the steam generator is estimated to be 99.5%.

Page 2-39, Laboratory

31 Indicate how many drums in one truck load will be sampled.

Page 2-60, Paragraph 1

3 For any facility-related incident that requires implementation of the contingency plan, a written report shall be submitted to DHS and EPA within fifteen days after the incident (22 CCR 67145(j); 40 CFR 265.56(j)).

Page 2-65. Paragraph 2

33 Turbidity and pH measurements shouldalsobe taken during well purging.

Page 2-70, Paragraph 5

34 Will trucks be steam cleaned and rinsed in a landfill unit? Please clarify, if incorrect.

page 2-72. Paragraph 1

3 Describe high wind cutoff point when trucks will not be allowed to unload asbestos-containing wastes.

Page 3-32, Morton Solids Disposal Area

3 Describe this site, including the types of wastes disposed of here. What other parameters were checked besides chloride and potassium?

Pages 3-78. 3-79

3 It is our understanding, based on conversations with Environ, that some of the values used to calculate ground water movement rates are incorrect and that the necessary changes will be addressed in Environ's comments.

Page 3-186, Section 3.9

3 This Health and Safety introduction is missing a discussion of hazardous waste regulation by DHS (Title 22, CCR) and by EPA.

Page 3-203, Paragraph 1

39 The selection of chemicals of potential concern associated with accidental releases is based on an outdated survey of hazardous waste generators by DHS (1985).

Page 3-208, Paragraph 3

4 DHS disagrees that exposure to residents of a populated area (e.g., the tam of Westmorland) due to a truck spill, with possible subsequent ignitim, would be belw air concentrations associated with acute effects. See General Comment No. 3.

ADDITIONAL COMMENTS

41 1. Review Table of Contents and make necessary changes.

41 2. All sub-units proposed for both the Hazardous and Non-Hazardous Waste Stabilization Units should be displayed in an enlarged map such as Figure 2-4. Figure 2-4 does not include all the subunits being proposed and a map for the Non-Hazardous Waste Stabilization Unitisnotpmvided.

4 3. Please include a table listing all existing and proposed tanks for the facility. Sub-divide table into areas, such as Hazardous Waste stabilization Unit and Non-Hazardous Waste Stabilization unit. Include the following information:

- Tanks number
- Description of tanks use
- Capacity (gallons)
- Height
- Diameter
- Material of construction
- Materialthickness

California Department of Health Services

2. Liquids introduced to the evaporation tanks will be nearly VOC-free (less than 10 ppm) and the level of liquid in the tanks will be kept low since this will be a source of water for the waste stabilization process. The DEIR (Section 7.4) does evaluate alternative measures to dispose of VOC vapors, but the destruction of these vapors by means of the steam generators is the proposed mitigation measure and is expected to have a control efficiency of better than 99.5%. The carbon adsorption system, the methods used to monitor for vapor breakthrough and the criteria for replacement of the carbon are specified by RCRA regulations and the GSX facility will comply with these regulations.

3. The risk to workers from naturally occurring radioactive materials (NORM) in geothermal wastes was discussed at length in Section 3.9 of the DEIR. Specifically, radiological components of geothermal wastes and the regulatory background for these materials was described in Section 3.9.1.3, impacts from NORM in geothermal wastes were evaluated in Section 3.9.2.6 and 3.9.2.7, and mitigation measures were presented in Section 3.9.3.2. These discussions in the DEIR were based on "GSX Support Information Radiation Dose Assessment for Disposal of Geothermal Wastes", a report prepared by Rogers and Associates Engineering Corporation for this project, which was included in the DEIR as Appendix F. The analysis of doses incorporated the source term of 17 lb/day of fugitive dust which was projected by GSX. The mitigation measures included providing radiation shielding on vehicles used to off load and place geothermal wastes, and using air conditioned cabs with filters to remove fugitive dust and particulate radon decay products. These measures, with the others proposed, were deemed sufficient to reduce potential impacts to below a level of significance. Additional mitigation measures for transportation of the wastes to the site were not deemed necessary as these wastes would be transported in covered trucks and would not generate dust offsite.

4. The risk to human health from inhalation of volatiles from a truck accident was evaluated in the Risk Assessment conducted by Clement Associates and summarized in the DEIR on page 3-208 as follows: "Potential exposures to offsite residents as a result of an onsite tank rupture and exposure to residents of a populated area due to a truck spill were found to be below the air concentrations

associated with acute effects under the modeled conditions...These risks are therefore below a level of significance." Analyzing risks from vaporization is more conservative than analyzing a burn event such as a truck accident with ignition of the hazardous wastes because the chemicals would combust to carbon dioxide, carbon monoxide, and products of incomplete combustion (PICs), which are less toxic than the pure chemical vaporizing, from an acute standpoint.

The potential for truck accidents was discussed in Section 3.7.2.6 (Accident Potential/Safety) of the DEIR. It was concluded that planned Caltrans improvements to SR-86 would reduce the potential for accidents to below a level of significance. Although the worst case truck accident could be significant and unmitigable, it was determined that the likelihood of occurrence is so low that the impact would be insignificant. Evaluation of hazardous spill information in Imperial County from the CHP Commercial Information Section indicated the GSX Imperial Valley facility has not been involved in accidents for the past 8 years, which was the time period studied. Therefore, this potential impact was not considered significant.

Although the analysis of risks and potential for offsite traffic accidents indicated the potential impacts would not be significant, it is acknowledged that during the transport of hazardous wastes, or even common materials such as gasoline, there is an unlikely possibility of an accident with consequences that are difficult to predict. Such an incident would be outside the control of the facility, and may or may not be mitigable to below a level of significance. See the Revised Draft EIR, pages 3- 177 and 6-1, for additions to the text discussing this possibility.

5. Comment noted. A future second assess to the facility is tentatively planned, as mentioned on page page l-l (Introduction) and page 5-l (Cumulative Impacts) of the DEIR. This road would be built on approximately 100 acres immediately northeast of the GSX facility, and would be subject to separate environmental review when a discretionary approval or permit is sought.

6. Comment noted.

7. Comment noted.

8. Comment noted.

9. This comment addresses the executive summary table, which presents a summary of impacts and mitigation measures. The table notes that significant air quality impacts would result from the emission of NO_X and reactive hydrocarbons. The air quality section in the text (Section 3.6) addresses the VOC emissions in greater detail.

10. The Rogers & Associates study assessed radiation impacts associated with disposal of geothermal waste materials in proposed waste management units WMU G1 and G2. The study estimated doses for workers in the waste unit, onsite personnel in the administration area, and individuals offsite, including the City of Westmorland. The analysis assumed geothermal wastes would be transported to the site in covered trucks, and no dust containing radioactive particles would be emitted during transport.

11. Although EHS is the agency that issues the solid waste facilities permit, the Imperial County Planning Department assumed lead agency responsibilities for the project because it will grant the General Plan Amendment and the Conditional Use Permit. This designation, which was decided through interagency agreement and Board of Supervisors order, is consistent with CEQA Section 15051(b), which states:

> "(b) If the project is to be carried out by a nongovernmental person or entity, the Lead Agency shall be the public agency with the greatest responsibility for supervising or approving the project as a whole.
>
> > (1) The Lead Agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose such as an air pollution district or a district which will provide a public service or public utility to the project."

The EIR notes that, in addition to the various permits to be obtained from Imperial County, the project must obtain discretionary permits from the Regional Water Quality Control Board, the California Department of Health Services and the U.S. Environmental Protection Agency. Please see page 1-4 of the Draft EIR.

12. Comment noted. Please see page 2-1 of the Revised Draft EIR.

13. Tables 2-2 and 2-3 were taken from the 1984 amended Conditional Use Permit. At that time, the California Code of Regulations was called the California Administrative Code (CAC); therefore, the table refers to the CAC. The remainder of the draft EIR refers to California Code of Regulations, which is the current acronym for the state laws.

14. As shown in Table 3.3-S in the Waste Analysis Plan (RCRA Part B Permit Application Section 3.3, included as Appendix B of this FEIR), free liquids will be tested in accordance with EPA method 9095 per "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA SW-846, Third Edition, 1986.

15. Geothermal waste is exempt from state and federal hazardous waste regulations (H&S 25143.1, 40 CFR 261.4(b)(5)). Discussion of other aspects of the regulatory issues concerning naturally occurring radioactive materials (NORM) appears on pages 3-192 to 3-198 of the Draft EIR.

16. The construction of the HWSU solids receiving area is detailed in the RCRA Part B Permit Application, Section 4.1.2.1. VOC and dust emission controls are described on page B-23 of Authority to Construct permit application. Air pollutant sources and emissions from the solid hazardous waste treatment unit, including the receiving area, are summarized in Table 3-17 of the DEIR. Section 3.6.2 of the DEIR discusses construction and operational impacts of the facility on air quality.

17. In Area 150 – sludge treatment, there will be 3 sludge mixing tanks, each 19,800 gallons in capacity. There will also be 1 blend tank with a capacity of 10,000 gallons.

18. The liquid receiving tanks will be enclosed. The tank truck rinsate will be flushed through a closed system into the same liquid receiving tanks as is stated at the top of page 2-22 of the DEIR. There will be 4 liquid receiving tanks, each with a capacity of 20,000 gallons.

19. There are eight proposed evaporation tanks. As shown in Figure 2-3 of the DEIR, four are in the hazardous waste treatment area with an additional two possible future tanks, and four are in the non-hazardous waste treatment area. Each tank in the

HWSU will have a capacity of 460,000 gallons. Waste acceptance procedures for hazardous wastes are described in Section 2.4.7 of the DEIR. Discussion of testing and methods to preclude waste incompatibility is on pages 2-30 and 2-31 of the DEIR, where it is noted that the "compatibility of combined waste loads will be verified through the fingerprint analysis ... If necessary, the responsible chemist may direct that a bench-scale treatability test be performed on waste loads to be combined for stabilization/treatment." Beach-scale treatability tests are briefly described in Section 2.4.7.2 of the DEIR. As noted in Section 2.4.7, details of the treatability verification analysis are in Section 3.3 of the RCRA Part B Permit Application, which is included as Appendix B of this FEIR.

20. The liquid bulking tanks will be covered. The liquids bulking area will contain eight lO,OOO-gallon storage tanks.

21. The stabilization equipment is described in the DEIR, page 2-21, second paragraph and in Section 4.3-2 of the RCRA Part B Permit Application. The stripper is a steam stripper column, and is further described in Section 4.3.2-2 and 4.3.5-2 of the RCRA Part B Permit Application. These sections from the RCRA Part B Permit application are included as Appendix C of this FEIR.

22. Comment noted. The Revised Draft EIR has been corrected to read "carbon adsorption". A more detailed description of the carbon adsorption unit is provided in Section 9 of the Authority to Construct Permit Application. The 100 ppm halogenated hydrocarbon threshold cited in the DEIR was assumed for purposes of calculating emissions from the steam generators and carbon adsorption unit. In practice, whenever a waste with appreciable halogenated compounds is being processed, the resulting vapors will be routed to the carbon unit. When halogenated compounds are not a concern, the vapors will be destroyed in the steam generators.

23. VOC streams that contain greater than 100 ppm halogenated organics will be directed to the carbon adsorption unit. There will be no regeneration of the spent carbon onsite. It will either be sent back to the supplier for regeneration or will be disposed of in a manner consistent with RCRA regulations.

24. The NWSU solids receiving area incorporates a reinforced concrete slab. The number of tanks and their storage capacities can be found in Section 12 of the Authority to Construct Permit Application. Reagents will be covered and the process unit will have particulate control via misting.

25. The curbed areas in Area N-100 will be constructed of reinforced concrete.

26. The storage tanks in Area N-150 are covered. The number and capacity are described in Section 9 of the Authority to Construct Permit Application.

27. The DEIR was in error in saying the oil would be shipped offsite for land disposal. This unit's designed purpose is oil recovery. Oil will be shipped offsite to be recycled for reuse or for supplemental fuels (i.e., bunker oil, which is heavy fuel oil used as dirty fuel at oil refineries). See page 2-26 of the Revised Draft EIR.

28. Nonhazardous wastes may also be stored in the drum storage area. Three separate areas are proposed to allow the separation of potentially incompatible wastes. Specific areas will be designated as needed. The concrete around each area will be curbed to provide 100 percent secondary containment. Each drum will be sampled and evaluated as described in the RCRA Part B Permit Application Section 3.3 "Waste Analysis Plan", included as Appendix B in this FEIR. Waste verification analysis (fingerprint analysis) will be conducted on a minimum of 10 percent of the total drums or containers in a multiple drum or container shipment. If the total number of containers is less than 10, at least one drum will be sampled, as discussed in Section 3.3.4 of the Waste Analysis Plan.

29. The secondary containment will consist of a curbed reinforced concrete pad underneath the drum shredder.

30. Correction noted. Table 3-23 of the draft EIR notes that the destruction efficiency of the steam generator is estimated to be 99.5% and the removal efficiency of the carbon absorption unit is estimated to be 97.5%. Please see page 2-28 of the Revised Draft EIR.

31. Please see the response to comment 28.

32. Comment noted. Please see page 2-61 of the Revised Draft EIR.

33. Currently, **pH,** turbidity, and TDS (total dissolved solids) are measured during groundwater monitoring.

34. The trucks will be cleaned in the treatment area. Please see page 2-72 of the Revised Draft EIR.

35. Comment noted. The comment refers to page 2-72 of the DEIR, the sentence which reads: "During high winds, trucks will not be allowed to unload asbestos-containing waste because of the potential for wind dispersal."

The information was obtained from **GSX's** *Report of Waste Discharge Permit Application* and a specific wind velocity threshold was not specified in that document. GSX Services indicates that 21 miles per hour is the wind velocity threshold at or above which the unloading asbestos-containing wastes would be prohibited. Please see page 2-73 of the Revised Draft EIR.

Various field measurements have shown that the threshold value of wind speed for erosion from typical soil surfaces is at or about 12 mph (e.g., U.S. EPA publication AP-42, Section 11.2, 1985). However, a number of operations at the GSX facility other than simple wind erosion may produce dust emissions, e.g., dumping of wastes to be stabilized/treated, open conveyance of solids, landfill covering, etc. The dust generation wind threshold for each activity will be determined by site- and equipment-specific variables and cannot be reliably estimated in advance.

A nominal wind speed cut off threshold of 12-15 mph should be employed for all such activities until working experience determines the actual critical level for each operation. The inspection and maintenance program listed as one of the principal required mitigation measures in Section 3.6.3 of the DEIR should include determination of these critical wind speed thresholds and methods for ensuring that operations are curtailed when winds exceeding these thresholds occur. Please see page 3-154 of the Revised Draft EIR.

36. The Morton Solids Disposal Area has been closed under an Imperial County approved closure plan, and is regulated under the current permit. This landfill contains geothermal wastes from one site owned by the Morton Salt Company.

37. Groundwater velocity calculations have been corrected. See response to comment 221 and page 3-80 of the Revised Draft EIR.

38. Correction noted. See page 3-189 of the Revised Draft EIR for modifications incorporating hazardous waste regulation by DHS and EPA.

39. See response to comment 47.

40. Comment noted. See response to comment 4.

41. No changes are necessary.

42. The oversized maps requested can be found in the CUP application prepared by ETE in September 1989, which was incorporated by reference into the DEIR.

43. Such information can be found in tables in the Part B Permit Application and the Authority to Construct Permit Application. Also, the maximum volumes to be held for the Area 30 Tank Farm, HWSU, liquids receiving and evaporation tanks, liquids bulking area, small-quantity generator container and laboratory pack building, and drum storage area are given in Appendix D, Table 5 (Closure Plan) of the DEIR. A summary table for tanks in the facility follows:

EXISTING AND PROPOSED TANKS AT THE GSX FACILITY

Tank Number	Description of Use	Capacity	Height	Diameter or Dimensions	Material of Construction	Material Thickness
Area 30 Tank Farm - Current						
Tank **#7510**	On-site Generated liquid storage	21,000 gallons	12 ft	8 ft wide 35 ft long	Carbon steel	**1/4"**
Tank **#7705**	**On-site** Generated liquid storage	**2 1,000** gallons	12 ft	8 ft wide 35 ft long	Carbon steel	**1/4"**
Tank **#8003**	**On-site** Generated liquid storage	**2 1,000 gallons**	**12 ft**	**8** ft wide 35 ft long	Carbon steel	**1/4"**
Hazardous Sludges Treatment Area - Area 150						
K-151 A	Sludge mixing tanks	19,800 gallons	20 ft	16 ft	Epoxy lined carbon steel Fiberglass reinforced	--
K-151 B	Sludge mixing tanks	19,800 gallons	20 ft	16 ft	Epoxy lined carbon steel Fiberglass reinforced	

EXISTING AND PROPOSED TANKS AT THE GSX FACILITY (Continued)

Tank Number	Description of Use	Capacity	Height	Diameter or Dimensions	Material of Construction	Material Thickness
Hazardous Sludges Treatment Area - Area 150 (Continued)						
K-151 C	Sludge mixing tanks	19,800 gallons	20 ft	16ft	Epoxy lined carbon steel Fiberglass reinforced	--
K-152	Blend Tank	10,000 gallons	16 ft	12 ft	Type 316 Stainless steel	--
Hazardous Liquid Receiving Area - Area 200A, 200B						
Tank TK201A	Liquid receiving	19,800 gallons	20 ft	16 ft	Carbon steel Epoxy lined	--
Tank TK201B	Liquid receiving	19,800 gallons	20 ft	16 ft	Carbon steel Epoxy lined	--
Tank TK201C	Liquid receiving	19,800 gallons	20 ft	16 ft	Carbon steel Epoxy lined	--
Tank TK201D	Liquid receiving	19,800 gallons	20 ft	16 ft	Carbon steel Epoxy lined	--
Tank TK202	Liquid reagent storage	6,000 gallons	12 ft	10 ft	Carbon steel	--

EXISTING AND PROPOSED TANKS AT THE GSX FACILITY (Continued)

Tank Number	Description of Use	Capacity	Height	Diameter or Dimensions	Material of Construction	Material Thickness
Hazardous Liquid Receiving Area - Area 200A, 200B (Continued)						
Tank TK203	Liquid reagent storage	10,000 gallons	14 ft	12 ft	Carbon steel	--
Tank TK204	Recyclable oil storage tank	500 gallons	8 ft	4 ft	Carbon steel	--
Tank TK205	Truck wash water recycling	6,000 gallons	12 ft	10 ft	Carbon steel	--
Evaporation Tanks - Area 250						
TK 251 A	Evaporation tank	**403,000 gallons**	**5 ft**	**140 ft**	Epoxy coated Carbon steel	**1/4"**
TK251 B	Evaporation tank	403,000 gallons	5 ft	140 ft	Epoxy coated Carbon steel	**1/4"**
TK 251 C	Evaporation tank	403,000 gallons	5 ft	140 ft	Epoxy coated Carbon steel	**1/4"**
TK 251 D	Evaporation tank	403,000 gallons	5 ft	140 ft	Epoxy coated Carbon steel	**1/4"**

EXISTING AND PROPOSED TANKS AT THE GSX FACILITY (Continued)

Tank Number	Description of Use	Capacity	Height	Diameter or Dimensions	Material of Construction	Material Thickness
Hazardous Liquids Bulking - Area 450 A **Hazardous Liquids Stabilization - Area 450 B** **Hazardous Liquids Reduction/Oxidation - Area 500**						
TK 451A through H	Liquids storage tanks	10,000 gallons each	14 ft	12 ft	Epoxy lined Carbon steel	--
TK 452A	Liquids stabilization	2,000 gallons	7 ft	7 ft	Polyethylene	--
TK 452B	Liquids stabilization	2,000 gallons	7 ft	7 ft	Polyethylene	--
TK 501	Redox Tank	10,000 gallons	10 ft	12 ft	Fiberglass reinforced Polyethylene	--
TK 502	Reagent Mixing tank	500 gallons	4 ft	4 ft 6 in.	Epoxy lined Carbon steel	--
Nonhazardous Waste Stabilization Unit						
N-TK-151A-F	Liquid and sludge mixing tanks	15,000 gallons	18 ft	14 ft	Carbon steel Epoxy lined	--
N-TK-204	Oil tank	500 gallons	—	—	Carbon steel	--
N-TK-205	Wash water tank	6,000 gallons	12 ft	10 ft	Carbon steel Epoxy lined	--

-- Information not available

STATE OF CALIFORNIA

George Deukmejian, Governor

AIR RESOURCES BOARD
1102 Q STREET
PO BOX 2815
SACRAMENTO CA 95812

October 2, 1990

TO: Richard Cabanilla
Imperial County Planning Dept.
939 Main Street
El Centro, CA 92243

John Keene
State Clearinghouse
1400 Tenth Street
Room 121
Sacramento, CA 95814

THROUGH: John Doyle
Deputy Secretary of Environmental Affairs

FROM: James D. Boyd
Executive Officer

SUBJECT: Draft Environmental Impact Report for the Expansion of a Class I/II Land Disposal Facility in Imperial County Proposed by GSX Services, SCH# 90010086

We have reviewed the draft environmental impact report (DEIR) for the proposed expansion of the GSX Services Class I hazardous waste disposal facility and have several comments. Our chief concerns are summarized below in the section Summary of Comments which follows the Project Background. Several pages of technical comments that support our general remarks are enclosed. My staff has discussed our comments with Mr. Gaspar Torres of the Imperial County Air Pollution Control District. We have also discussed our comments with Mr. Lawrence Jackson and Mr. Joe Zarnoch both of the Department of Health Services.

PROJECT BACKGROUND

GSX Services proposes to expand an existing Class I hazardous waste landfill facility located 6 miles west of the city of Westmorland, in Imperial county. The objective of the expansion is primarily to increase disposal capacity for hazardous, geothermal and asbestos wastes generated in Southern California. The existing facility occupies 30 acres on the 640 acre GSX site, Over a period of 20 years, the expansion would ultimately occupy an additional 260 acres.

The DEIR has been submitted concurrently with permit applications to imperial County agencies, the Regional Water Quality Control Board, the California Department of Health Services (DHS) and the United States Environmental Protection Agency (EPA). The Imperial County Air Pollution Control District (APCD) received an application for an Authority to Construct

(ATC) permit from GSX on June 18, 1990. The emission rates developed for the proposed ATC are referenced in the DEIR. A risk assessment was prepared for the Imperial County Planning Oepartment and the risk calculations generally used emission factors provided in the proposed ATC. The OEIR relied on the modeling results from the proposed ATC and findings of the risk assessment to describe expected project air quality impacts.

The OEIR found that air quality would be impacted significantly due to the project expansion. The impact would arise from the oxides of nitrogen (NOx) and reactive hydrocarbon (HC) emissions which would in turn add to existing exceedances of state and federal ozone standards. Particulate emissions are expected to add to exceedances of the state PM10 standard. The total potential risk due to toxic compounds at the closest dwelling, about one mile downwind from the facility, was calculated to be equivalent to an excess cancer risk of one in a million.

SUMMARY OF COMMENTS

The DEIR identified the project's potential to exacerbate existing violations of federal or state ozone and PM10 standards without discussing full mitigation measures which would prevent such exacerbations. Such mitigation is required under section 42301 of the California Health and Safety Code and Imperial County APCO Rule 207. Best available control technology (BACT) measures may not have been fully explored for mitigation of NOx, HC and PM10 emissions. The selected waste stream characterization model may not be the most currently available for emission estimation thereby causing potential inaccuracies in the resultant emission estimates. Although a risk assessment analysis was prepared, the analysis itself was not incorporated in the DEIR for public review. In addition, we found inadequacies and inaccuracies in the risk assessment which may have underestimated the potential risk. The enclosed technical comments discuss each of these in more detail.

Thank you for the opportunity to provide written comments on this DEIR. We are available for further discussion. If you have any questions or if we can be of further assistance please contact Jim Behrmann, Manager, Toxics Program Support Section at (916) 322-8273.

Enclosure

cc: Steve Birdsall, APCO, Imperial County APCD
Gaspar Torres, Imperial County APCO
Joe Zarnoch, DHS, Region IV
Lawrence Jackson, OHS, Headquarters
Jim Behrmann, ARB

Enclosure

TECHNICAL COMMENTS

Although our comments address the DEIR, the ATC and risk assessment were principal information sources used in the DEIR. Therefore, our comments also pertain to these documents. Our comments focus on mitigation of emissions, emission factors of toxic substances and risk calculations. Since emission rate calculations for such a hazardous waste site are not commonplace, many of the techniques used were novel and relied on scant testing data. Many of our comments essentially request refinement of the techniques used in order to improve the accuracy of the emissions estimates and results of the risk assessment. They are as follows:

1. Air Quality St-

44 The DEIR has identified that project emissions of NO_x, HC and PM10 wiil exacerbate existing violations of state and or federal ozone and PM10 standards, respectively. However, full mitigation of the impacts has not been proposed. Such mitigation is required under section 42301 of California's Health and Safety Code'and Imperial County APCD Rule 207. Mitigation proposed in the DEIR may not have considered all available measures for NO_x, HC and PM10 control. A DEIR is required to propose all feasible mitigation measures. In consideration of the overall need to provide full mitigation, consideration should be given to:

- o Staggered hours for construction and operational activities onsite;.
- o BACT for permanent onsite heavy equipment which includes engine timing retard to reduce NO_x emissions; and
- o PM10 emissions offset by paving gravel and dirt roads offsite, appropriately located within Imperial County, in addition to the facility access road.

2. Air Quality Monitoring

45 The discussion of the air quality monitoring plan is vague and refers to a plan as yet to be written. An air monitoring plan is an important element in determining the effectiveness of mitigation measures for this type of a site. A proposed air monitoring plan for the expansion should be included and subject to agency review.

3. Onsite laboratory

46 The onsite laboratory testing facilities and scope of waste stream testing should be discussed.

4. Waste Stream Characterization

47 The waste stream is characterized so that emissions can be estimated. Estimating the projected composition of the hazardous waste streams to be

accepted at the GSX facility over the next 20 years represents a formidable task, for which no clear cut approach exists. However, the database selected for use is not necessarily the most appropriate. Department of Health Services (DHS) biennially conducts a survey of hazardous waste generated in California according to information provided by hazardous waste generators. In 1985, DHS contracted with the University of California at Davis (UCD) to compile the survey information. In subsequent years, 1987 and 1989, DHS has performed this task. In the alternate years, DHS compiles a summary of hazardous waste disposal at landfills based on information from disposal facilities. Each year DHS summarizes the hazardous waste information from manifest forms. However, for waste stream characterization, the 1985/UCD database, which was incomplete and is now outdated, was used.

Waste stream analysis and characterization should make use of DHS' extensive experience and conclusions. Generator, facility and manifest databases are available from DHS on computer disk. Waste stream characterization based on DHS' most current databases should be compared, discussed and considered as appropriate data. A discussion of the sources of error and an estimate of the level of error as it applies to estimating emissions should be included.

5. <u>Waste Stream Characterization</u>

48 The relative quantity of the hazardous waste stream which has been described as "unknown" should be defined. The potential emissions from any "unknown" portion should be included. Statistics derived from a known portion may be used to best estimate an associated unknown portion.

6. <u>Suppressant Foam Efficiency</u>

49 An efficiency of 99% was used for vapor and particulate suppressant "3M stabilized foam" referring to a study performed by Radian Corporation at the Twentynine Palms landfill. The Environmental Protection Agency (EPA) is currently reviewing a similar study of foam efficiency performed at the McColl site where the wastes are notably acidic. Efficiencies well below 99% were obtained in the EPA/McColl study. The experimental conditions of the Twentynine Palms study may not be identical to conditions of use at GSX. Breaching of the foam, slope of terrain, chemical incompatibility, variation in application mixtures and techniques and other factors significantly affect foam efficiency. The conditions of use of foam at GSX should be compared and contrasted to Twentynine Palms when deducing a foam efficiency for GSX.

7. <u>Emissions of Adsorbed Organics</u>

50 The hazardous waste treatment process utilizes carbon adsorption for stripping volatile organic compounds from aqueous streams. Spent carbon would then have to be regenerated, releasing the compounds, or be land disposed. The emissions of the carbon-adsorbed organic compounds should be addressed. Alternative technologies such as oxidation should be considered and discussed.

a. Current Facility Emissions

51 The risk assessment considers inorganic compounds only from the present facility. The potential risk due to organics should also be assessed.

9. Compounds of Concern

52 The risk assessment lists tetrachloroethylene, 1,4,-dioxane, arsenic, beryllium and nickel as chemicals of concern in the waste stream database due to relative abundance and carcinogenicity. However, emission factors for these five compounds were not provided for routine landfill operation, and their contribution was not calculated in the risk assessment. Additionally, in 1988, tetrachloroethylene was tested for and detected in the ambient air downwind of the existing facility, confirming that it is a compound of concern. Emission factors and the risk contribution due to these five compounds should be added.

10. Multipathway Risk Assessment

53 53 The California Air. Pollution Control Officers Association (CAPCOA) Risk Assessment Guidelines requires a refined risk assessment to use the multipathway exposure approach for certain toxic compounds. Multipathway exposure includes dermal exposure and soil ingestion for appropriate compounds, Since these routes were not considered in the risk assessment, the total potential risk assessed could be underestimated. The multipathway exposure analysis should be added to the risk assessment.

11. CAPCOA Cancer Potencies

54 We noted that in the risk assessment, the unit risk values for benzene, cadmium and chromium VI are lower than current DHS approved values. The risk assessment should use the most current unit risk values (cancer potencies) for all substances expected to be disposed of at the site approved by DHS. The CAPCOA document entitled "Air Toxics Hot Spots Program, Risk Assessment Guidelines," July 1990, contains up-to-date cancer potency values.

California Air Resources Board

44. **The** DEIR (pages ES-9, ES-10 and 3-151) identifies the project's impacts on ambient ozone and PM_{10} levels as significant, and states that offsets for project VOC, NO, and PM_{10} emissions should be employed, if available. The details as to which sources should be controlled and where emission reduction credits should be obtained are matters to be determined jointly by the Air Pollution Control District and the applicant during the Authority to Construct Permit review process. The commenter's suggestion to pave roadways in the surrounding area as a PM_{10} offset approach is a good one, which could result in substantial offsite emission reductions for a reasonable cost, especially if rather heavily used roads are treated in this manner. The recommendation to implement engine timing retard on heavy equipment and trucks serving the facility is also a valid and potentially cost-effective method of reducing project NO, emissions, especially for equipment that is fully dedicated to the GSX facility. Restrictions on the timing of construction and/or operational activities, such as staggering of waste deliveries or the various waste processing steps, may or may not be practicable.

45. The applicant's air quality monitoring plan is being designed to conform to conditions attached to the County's Authority to Construct (ATC) Permit and with the guidelines provide for preparation of EPA Hazardous Waste Facility Permits (40 CFR 270.32 [b][2]). The first phase of the monitoring program involves collection of data to characterize the meteorological conditions at the site that will govern the transport and dispersion of hazardous constituents and to identify the hazardous substances that will be emitted from the facility. During the second phase, monitoring of the identified compounds will take place. Meteorological monitoring at the GSX site began in March 1990. The details of the monitoring program will be developed by the applicant with the permitting agencies and specified in the Hazardous Waste Facility Permit that GSX is seeking from the California DHS and U.S. EPA and in the ATC. The fact that such a monitoring program is necessary is appropriately stated in the DEIR; presentation of the detailed monitoring plan design is not required in this document.

46. A summary description of the onsite laboratory is given in Section 2.5.3 of the DEIR. It states that the waste stream will be tested using EPA approved methods contained in SW-846. A detailed description of the laboratory is given in

Section 3.3 of the RCRA Part B Permit Application which is included as Appendix B of this EIR.

The RCRA Part B Permit Application describes the types of tests that will be conducted. Table 3.3-1 of the permit application lists the types of wastes expected at the facility and their hazardous properties. The methods and equipment used to collect representative samples for laboratory analysis are described in Table 3.3-2. The parameters and test methods along with the rationales for the test methods are identified in Tables 3.3-3 through 3.3-5. Characteristics of the laboratory are summarized below.

The GSX laboratory is housed in a triple wide mobile unit. The lab consists of a truck receiving area, wet lab and two instrumentation rooms. The instrumentation includes a Perkin Elmer Plasma 40 ICP for EPA Method 6010, Hewlett Packard 5890 GC for EPA Method 8021, Hewlett Packard 5890 GC for EPA Method 8080, and PSA Mercury Analyzer for EPA Method 7471. The wet lab has capability to perform pH, sulfide, cyanide, headspace VOC's, phenols, flashpoint, distillation, and radioactivity. The laboratory also has four IBM compatible computers for data acquisition and reporting.

47. The applicant's information on waste stream makeup is the basis for much of the facility emission's data in the DEIR. Despite the availability of some information that is more recent than the 1985 UCD data base that was utilized, none of the other data bases were found to be as complete nor to have the same degree of quality control at the time the GSX waste stream characterization was attempted (October 1989). In particular, the UCD 1985 data base contains chemical-specific information that was subject to material balance checks and was developed by an independent, unbiased researcher. It was thus used in preference to other unvalidated and less complete data sets, including the 1987 and 1989 DHS data bases, the listings of the California State Board of Equalization and literature available through computerized search systems, including the ENVIROLINE data base.

48. The approach taken to account for the unknown portion of the waste follows exactly the commenter's recommendation, i.e., that unknown portion of the waste was assumed to have the average makeup of the known waste fraction.

49. The following information regarding the assumed control efficiency of the 3M FX-9162 foam and FX-9161 stabilizer was obtained from the applicant's consultant, ENVIRON.

As mentioned in the comment, a hydrocarbon control efficiency of 99% (relative to uncontrolled emissions) was used, based on data from the Twentynine Palms Study by Radian. This study showed that 99% control was achieved and maintained over a 7-day test for an application at an expansion ratio of 6-to-8.1 on a flat surface at this desert location. The observed level of control was somewhat lower for sloped edges, but the surface cover of the edges represents a small fraction of the total area of exposed waste. This data set appears to be more representative than information from the studies at the McColl waste site, which are not yet available. Major differences in the conditions of foam use at the McColl and Imperial Valley facilities are:

- The extremely low pH of much of the waste at McColl; if such waste were received at the GSX facility, it would be stabilized to near neutral condition.

- The McColl site has free organic liquids that seep through the landfill surface; if such wastes are received at GSX, they will be stabilized to a condition whereby such liquids are chemically and physically bound with other materials.

- The McColl study evaluated the emission control effectiveness under excavation conditions inside a temporary enclosure. This is not the condition under which suppressant foam will be used at GSX. Unlike the evacuation conditions test at McColl, the Imperial Valley facility landfills are groomed and compacted to achieve a smooth, level surface. In the latter case, the uniformity of foam depth can be expected to provide greater emission control efficiency.

Also, the emissions of organic vapors from Class I and Class II landfills at the Imperial Valley facility will be reduced prior to the application of suppressant foam by the waste stabilization processes that will preceed landfilling. Although the additional level of emission control is unknown, this factor further supports the assumption of 99% control selected due to similarities to conditions at the Twentynine Palms site.

50. The carbon used in the carbon adsorption system for stripping VOC compounds from aqueous waste streams will not be regenerated onsite. Instead, the carbon will either be taken offsite to an authorized facility for regeneration or disposed of in a landfill in accordance with appropriate regulations. Carbon regeneration facilities are designed to remove and dispose of the adsorbed materials according to RCRA requirements. Neither method will add to overall VOC emissions at the Imperial Valley facility. Note that the alternative technology section of the DEIR addresses other technologies, such as thermal oxidation.

51. Section 3.9.2.5 of the DEIR states that the risks from the existing facility, with organics included, would be less than the risks calculated for the Class I landfill of the Master Plan. Since the risks from emissions at the Class I landfill were reported in the DEIR to be no greater than 3×10^{-7}, the risks from exposure to organics as well as inorganics at the current facility would also be insignificant.

52. Although the chemicals of concern were listed as possible compounds for catastrophic release, the total annual quantities were considered to be too low to cause significant chronic exposure levels. However they were evaluated for acute exposure due to a possible accidental release.

53. The noninhalation pathways of dermal exposure and soil ingestion were assumed to result in incremental risks considerably lower than the inhalation pathway. An analysis of multipathway exposures has been conducted for this FEIR using the CAPCOA methodology. See response to comment 297 for a discussion of the results.

54. A number of conservative assumptions were incorporated in the health risk assessment in order to ensure that the calculated risks are much higher than actual. These assumptions are explained in detail in Appendix D of the Risk Assessment conducted by Clement Associates. One example is the use of the factor 0.3 when converting from calculated short-term exposure levels to annual average exposure levels. The typical screening factor is 0.1. Consequently, screening exposure levels and risks are three times higher than conventional screening methods.

An analysis of risks using the CAPCOA methodology has been conducted for this FEIR. See response to comment 298 for a discussion of the results.

STATE OF CALIFORNIA—RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor.

DEPARTMENT OF WATER RESOURCES
P O. Box 6598
LOS ANGELES
90055-1598

OCT 11 1990

Imperial. County
Planning Department
939 Main Street
El Centro, CA 92243

Attention: Richard Cabanilla

Dear Mr. Cabanilla

Reference: DEIR: GSX Imperial Valley Facility Expansion, dated August 1990, SCH 90010086

The staff of the Department of Water Resources has reviewed the subject report and offers the following comments:

The Department is very much concerned about the potential for contamination of the water resources of the area, both surface and ground water, from the operation of the facility. We do not feel that the proposed mitigation measures will reduce the potential impact to below a significant level, because the site does not meet siting criteria set forth in Sections 2531 and 2532, Article 3, Subchapter 15, Chapter 3, Title 23, of the California Administrative Code pertaining to Class I and II Waste Management Unit Classification and Siting.

The DEIR (p. 3-48) acknowledges that "the effective permeability of the natural geologic materials underlying each of the Class I landfills may not meet CCR Title 23 siting criteria," but maintains that these adverse impacts are "mitigable to below a level of significance through implementation of project design features (liners and LCRS)."

The Department concurs with the findings of the DEIR in that the underlying geologic conditions do not meet the siting specifications as mandated in Section 2531(b); however, we find the mitigation measures as proposed are insufficient to reduce the impacts to a level below significance in view of the fact that this facility is situated in a seismically active area with a high probability of surface ground rupture from the numerous onsite faults.

Attached is a discussion of the findings on which these comments are based. For further information, you may wish to contact Evelyn Tompkins at (213)-620-5365.

Thank you for the opportunity to review and comment on this report.

Sincerely,

Charles R. White

Charles R. White, Chief
Planning Branch
Southern District

Enclosure

Discussion of Findings

The Department of Water Resources notes that:

5 Currently within the 640-acre GSX site, (T13S/R12E-16), ten faults are known to exist. These faults, listed as A through J, are "considered active" and "exhibit vertical displacement, with offsets ranging from approximately 0.5 to 80 feet (IT 1987)" (DEIR, p. 3-36). The DEIR further states: "Minor displacements along onsite fault traces were observed in association with the 1987 Superstition Hills earthquakes (Moore and Taber 1988)" (DEIR, p. 3-42). The report expands on the regional nature of seismic activity on page 3-33. "...faulting within the Salton Trough often lacks surficial expression (i.e., surface breaks, pressure ridges, offset stream courses, etc.) and can remain undetected until displacement during seismic activity." Regionally, the area is known to be one of the most seismically active in California.

Of paramount concern here is the siting of the facility with regard to ground rupture and rapid geologic change as mandated under Article 3, Section 2531 (d) and (e) in California Administrative Code, Title 23, Chapter 3, Subchapter 15. Again quoting from the DEIR text (p. 3-50): "...the onsite termini of several fault traces (specifically faults A,D,E,F,H,I, and J) were not conclusively established, with onsite faulting potentially more extensive than is currently documented. Under such a scenario the site may be within an area of rapid geologic change and/or one or more proposed storage/disposal facilities could be within 200 feet of an active fault trace."

Yoreover, in reference to the potential for ground rupture the DEIR states: "Ground rupture may occur along these faults: however, in response to regional seismic activity..."in the event of a major earthquake along one or more regional fault structures, it is conceivable that substantial sympathetic ground motion could occur on the project site due to the widespread occurrence cf normal faulting" (DEIR, p. 3-42).

Froposed mitigation measures designed to reduce potential ground rupture hazards and rapid geologic change to "below a level of significance" are as follows:

1. Ground Rupture

The DEIR (p. 3-50) says: "such impacts could be reduced below levels of significance through additional investigations of onsite faulting and incorporation of pertinent results into final project design. "The report further explains under Mitigation Measures, (p. 3-55) that additional geologic investigations will focus on delineating "the extent and age of onsite fault traces ." Article 3, Section 2531(d), states clearly that Class I units, "shall have a 200-foot setback from any known Holocene fault." Because the exact delineation and age of the ten identified faults within the GSX site are unknown, the proposed expansion of the existing facility does not comply with the aforementioned provision nor is it likely to be mitigated to below a significant level because of the extensive faulting already known to occur at the one-square-mile site. Moreover, as stated by the California Division of Mines and Geology, Guidelines for Evaluating the Hazard of Surface Fault Rupture, (California Geology, May 1976, p. 105), "Once a structure is sited astride an active fault, the resulting fault-rupture hazard cannot be mitigated unless the structure is relocated... Further, it is impractical from an economic, engineering and architectural point of view to design a structure to withstand serious damage under the stress of surface fault rupture."

5 2. Rapid Geologic Change

With regard to faulting and ground acceleration during a seismic event, the DEIR (p. 3-53) states that the "maximum peak ground acceleration anticipated for the site is 0.48 g associated with a 7.0 magnitude earthquake." Mitigation measures propose to incorporate into the final project design a structural capacity to withstand a seismically induced ground acceleration of 0.60 g (DEIR, p. 3-55). Specific design applications, as proposed, include "flexible liners, drainage, and leachate collection and removal systems, as well as appropriate composition and construction of fill embankments and soil covers" (DEIR, p. 3-53).

With regard to the "tank farm" which stores onsite-generated Class I contaminates, mitigation measures would involve, if necessary, modifications "to accommodate the effects of seismically-induced seiches" and may include "reinforcing the tanks to withstand projected seiche effects, maintaining a minimum free board within the tanks, and/or enlarging the secondary containment system" (DEIR, p. 3-55). It must be pointed out that failure or rupture of these storage tanks during a seismic event would certainly result in the contamination of the local ground water as well as surface water via the Westside Main Canal and/or Trifoleum Storm Drain, which discharges into the Salton Sea.

Additionally, it must be noted that the incorporation of the facility to withstand a ground acceleration of 0.60 may not be sufficient. Data from the 1971 San Fernando earthquake (M.6.6), which was of shallow focus, as are most quakes occurring in the Imperial Valley, indicated a maximum peak acceleration of 1.04 g, five miles south of the epicenter (U.S.G.S. Professional Paper #733, 1971). Similarly, during a low, 3.1 magnitude earthquake near Oroville in 1977, a peak ground acceleration of 0.56g was recorded 2.7 miles from the' epicenter (California Geology, Sept. 1977, p. 212). In any event, it should be apparent that the GSX facility is located within an area *of* potential rapid geologic change and therefore does not comply with nor will be mitigated to comply with Title 23, Chapter 3, Subchapter 15, Article 3, Section 2531(e) of the California Administrative Code.

57 3. Geologic Setting: Secondary Permeability

Section 2531(b) requires that Class I disposal facilities be located "where natural geologic features provide optimum conditions for isolation of wastes from water of the state" (DEIR, p. 3-46). With regard to the stratigraphic condition underlying the GSX facility, the DEIR states on page 3-48, "...the stratigraphic characteristics of the project area generally appear to be favorable for landfill siting." However, the DEIR acknowledges that fracturing of the primary clay units $Q1_1$, Q12, and $Q1_6$ may compromise the integrity of these units to act as barrier against the downward migration of leachates into the water table.

The fracturing is described at the top of page 3-48, as having been interpreted (IT 1987) to be "ancient desiccation cracks or the result of differential compaction/settlement associated with the disturbance of underlying sand and silt intervals." More revealing, however, is the cross sectional description of "sand boils" or "sand volcanoes," which commonly occur after major seismic events: "In some clays, the features have been observed to widen slightly at the base and are apparently filled with sandy silt from an underlying unit, indicating some past mobility of the sediments below" (DEIR, p. 3-48).

State Department of Water Resources Letter

55. The DEIR specifically states that additional investigations of onsite faulting shall be conducted and pertinent results shall be incorporated into the final project design. If the onsite fault investigations extend the location of fault traces, then the 200-foot setback would be modified to incorporate the extension of these fault traces.

These modifications will be included into the final project design to be approved by all appropriate agencies. Imperial County has jurisdiction over the grading permit for each individual waste unit and if the studies provided for in the DEIR mitigation sections reveal violations of Title 23 regulations then the grading permit will be refused.

56. The text on page 3-55 of the DEIR discussing seiche effects relates to the evaporation tanks proposed in the hazardous waste treatment area, not the tank farm where water collected from landfill leachate sumps, monitoring well purge collection barrels, and the equipment wash sump will be collected, clarified, and recycled. The evaporation tanks were singled out as having potential seiche-related impacts because of their volume (460,000 gallons each) and the proximity of the containment curb. The tank farm, which would contain three 21,000-gallon tanks and one 24,000-gallon ovefflow tank, was not determined to have this potential impact. The DEIR discusses potential spills from a tank rupture in the hazardous waste treatment area in Section 3.9 (Health and Safety). On page 3-222 it was concluded that designing and implementing an immediate clean up program (which is required by various permits which must be obtained by GSX), would prevent contaminants from percolating to the underlying ground-water system. It was also noted that the low permeability of most of the underlying formations should slow percolation rates, providing time to complete a successful clean up. Potential impacts to surface water quality were discussed in Section 3.5 (Surface Water) of the DEIR. On page 3-l 10 it was concluded that potential offsite surface water impacts would be limited to degradation of surface water quality due to a probable maximum flood occurring and the offsite diversion berm failing. It is extremely unlikely that such an event would occur at the same time as a large seismic event which exceeded the design event for structural stability. Therefore, the DEIR does not support the contention in the comment that "failure or rupture of these storage,

tanks during a seismic event would certainly result in the contamination of the local ground water as well as surface water..."

It is acknowledged that the GSX facility is in an area where rapid geologic change can occur. However, the 200-foot setback from known faults, the additional geologic studies required in the EIR, and appropriate design of flexible liners, drainage, and leachate collection and removal systems, as well as appropriate design, maintenance, and construction of fill embankments and soil cover reduce this impact to below a level of significance.

It is not appropriate to base seismic design of a facility on one measured ground acceleration point on a fault that is several hundred miles from the facility location. Such a measurement can be highly influenced by site-specific conditions such as soil cover, topography, location of the measuring device in a building, etc. The accepted method for identifying an appropriate peak ground acceleration design value is to utilize acceleration attenuation curves.

A number of well-documented attenuation curves have been developed by various researchers. These curves generally incorporate acceleration data from previous seismic events and attempt to develop mathematical equations and curves which describe and predict attenuation of ground acceleration with distance from the fault for earthquakes of various magnitudes.

Presented below are a number of different attenuation equations which have been developed. Site-specific data from the GSX facility have been incorporated to allow prediction of mean peak accelerations for the facility. The site-specific data include using a maximum credible earthquake of 7.0 and a distance of 4 miles (6.48 km) from the facility to the closest segment of the Superstition Hills fault.

a = median peak horizontal ground acceleration (in g)
m = magnitude of earthquake
R = closest distance to the source

1. Joyner and Boore (1981)

$$\text{Log } a = -1.02 + 0.249\, m - \text{Log } D - 0.00255\, D$$
$$D^2 = R^2 + h^2;\ h = 7.3 \text{ km}$$
$$a = 0.51\ g$$

2. Joyner and Boore (1982)

$$\text{Log } a = -1.19 + 0.276\, m - \text{Log } D - 0.00259\, D$$
$$D^2 = R^2 + h^2;\ h = 7 \exp [0.4\,(m-6)]$$
$$a = 0.42\ g$$

3. Campbell (1981)

$$\ln a = -3.99 + 1.28\, m - 1.75 \ln [R + C(m)]$$
$$C(m) = 0.147 \exp (0.732\, m)$$
$$a = 0.35\ g$$

4. Idriss et al (1982)

$$\ln a = \ln \alpha (m) - \beta (m) \ln (R + 20)$$
$$a (7.0) = 91.7\ \beta (7.0) = 1.63$$
$$a = 0.44\ g$$

5. WCC (1983)

$$\ln a = -2.611 + 1.1\, m - 1.75 \ln [R + C(m)]$$
$$C(m) = 0.3157 \exp (0.6286\, m)$$
$$a = 0.37\ g$$

The attenuation calculations listed above have median peak accelerations ranging from 0.35 to 0.51 g. The researchers for Method 1 recommend that the calculated acceleration be multiplied by a factor of 0.87, reducing the calculated 0.51 g acceleration to 0.44 g. The overall average of these acceleration calculations is 0.42 g. Therefore, the 0.60 g design value cited in the DEIR is substantially greater than the calculated peak horizontal accelerations.

57. It is believed that the fractures described in the clay units are weathering related desiccation features and are not extensive or significantly interconnected Hence the stratigraphic characteristics of the project area generally appear to be favorable for landfill siting, due to the measured low permeability of several of the units underlying the project area. In addition, Imperial County regulations (Imperial County Hazardous Waste Management Plan, 1989) provide for the implementation of project design features such as liners and leachate collection and removal systems for situations when the natural lithologic permeabilities do not meet siting criteria. The use of such proper design features will mitigate the adverse impacts to below a level of significance.

State of California Environmental Affairs **Agency**

Memorandum

TO : Terri Lovelady Date: 10-04-90
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Richard Cabanilla
Imperial County Planning Department
939 Main Street
El Centro, CA 92243

From : Jeannie Blakeslee for
John D. Smith, Manager
Local Planning Division
CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

Subject: SCH # 90010086, Draft Environmental Impact Report (DEIR) for the GSX Imperial Valley Facility Expansion, Imperial County

Addendum to CIWMB comments on GSX Imperial Valley Facility Expansion DEIR

In response to the original review sent to various agencies and associated staff, the California integrated Waste Management Board (CIWMB) staff are submitting this addendum to elaborate on specific comments in our original review.

We are aiso including a copy of the original memorandum with previous typographical errors corrected. We apologize for any inconvenience resulting from this and hope that these efforts will answer any questions and express our concerns regarding this matter.

CIWMB staff offer the foilowing changes to our original comments:

CHEMISTRY

Page 2-26 heading statement should have *been:*

2.4.5 - SMALL-QUANTITY GENERATOR CONTAINER AND LABORATORY PACK MANAGEMENT BUILDING

GEOLOGY

3.3.1.5 - STRUCTURE
Page 3-33, 36

Our original statement should have keen the following:

The DEIR indicates that there may be faulting in the Salton Trough which can remain undetected until displacement during seismic activity. Have any analyses or studies been conducted to possibly identify "blind" faults In the project area?

The DEIR also states that the onsite termini of several faults have not been conclusively established. Furthermore, the DEIR statee that:

> " All onsite faults exhibit vertical displacement, with offsets ranging from approximately 0.5 to 80 feet."

Board staff requests that further investigation and analysis of the site area Including geologic structure- be conducted to establish fault termini and potential fault displacement impacts.

Board staff request that the results of said investigation and analysis be incorporated in the FEIR.

3.3.1.7 - SEISMIC HAZARDS: GROUND RUPTURE
Page 3-42

Our statement should have been:

The CEIR states that site specific dating of the fault structures was not conducted. Additional information is requested on site specific dating of the fault structures associated with the Holocene displacement for onsite faults.

The DEIR states that faults A, 3, E, F, H, I, and J have not had their respective termini determined. This could present a potential *impact* on the extent of onsite ground rupture hazards. Board staff requests information on the fault termini.

3.3.2.4 - REACTIVITY
Page 3-49

The original comment stated no evidence was available to substantiate the presence of reactive soils onsite. This comment should have stated:

> "No evidence is present in the DEIR that substantiates the presence or absence of reactive soils onsite."

GROUND ACCELERATION
Page 3-53

The DEIR states:

> " Project design will incorporate a peak ground acceleration value of 0.6 g. This figure is based on projections of horizontal acceleration in bedrock underlying the site."

Normally, the rule of thumb in structure design is to design for the vertical component of ground acceleration to be 2/3 of the horizontal component. However, recent earthquakes in California (Whittier, Loma Prieta) have shown that the vertical component of ground acceleration in areas within 15-20 kilometers of the fault may be equal to or greater than the horizontal component of ground acceleration.

Board staff requests information concerning any potential impact associated with vertical peak ground acceleration.

Board staff requests that these comments and all previous comments are addressed and included in the (FEIR). The CIWMB will mail a copy of the corrected review document and this document to GSX.

Thank you for the opportunity to review this document. Board staff regrets any inconvenience presented in the original review and expresses our concern by sending this addendum. If there are any questions, please contact Vincent Paul of Board's Local Planning Division at (916) 327-2444.

cc: Gerald Quick, Local Enforcement Agency, Imperial County
Danny I. Shaw, GSX

State of California Environmental Affairs Agency

Memorandum

To : Terri Lovelady
state Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Date: 9-28-93

Richard Cabanilla
Imperial County Planning Department
939 Main Street
El Centro, CA 92243

From : John D. Smith, Manager
Local Planning Division
CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

Subject: SCH #90010086, Draft Environmental Impact Report (DEIR) fcr the GSX Imperial Valley Facility Expansion, Imperial County

California Integrated Waste Management Board (Board) staff have reviewed the DEIR for the expansion of the GSX Class I/II Facility, and offer the following comments:

The proponent, CSX Services, (d.b.a. Laidlaw Environmental Services, Inc.) is proposing an expansion of its existing 30 acre Class I landfill in Imperial County. The project involves a proposal to increase the disposal capabilities of the facility. This proposal will allow disposal of hazardous and non-hazardous wastes generated by Industries throughout the greater portion of Southern California.

The site encompasses 640 acres and is located 6 miles west of the city of Westmoreland and 4 miles south of the Salton Sea. The proposed expansion encompasses a 20 year master plan covering 260 acres in the western portion, leaving 350 acre's for further future evaluation.

5 This proposed project will add three Class I waste management units (WMU), two Class II WMUs, two dedicated geothermal WMUs and an asbestos WMU.

Storage, treatment and recycling facilities for hazardous and non-hazardous waste are also proposed.

GENERAL

59 The DEIR alludes to a 20 year master plan for the facility. This plan is not included in the DEIR. Board staff request that this master plan be included as pert of the FEIR, and ark that staff be given adequate time for review of this document.

In addition, Board staff ask that any health risk assessment which has or is being prepared be included as part of the FEIR, along with any other documentation which Is associated with this project, such as detailed geotechnical data, and any additional hydrogeologic data which was not Included in the DEIR. Again, staff ask that adequate time be provided for review* of this informat ion.

PRETESTING OF WASTE STREAM

60 Any pretesting of waste stream prior to transfer to this facility should be described in detail in the FEIR. Is the contracted laboratory EPA and California State certified? What assurances can be given that the generator is shipping identical wastes as predetermined by the original analysis?

CHEMISTRY

2.4.1.1 - CLASS I WMUs
Page 2-15

61 When equipment is used to load the Class I waste into the unit, will this equipment be dedicated for this purpose or will it be used in other portions of the facility? How is the surface of the equipment monitored, specifically the loading portion or "scoop", whenever there is contact with the waste? Cleanup procedures should be included in the FEIR.

2.4.1.2 - CLASS II LANDFILLS APPENDICES B AND C - WASTE TYPES TO BE ACCEPTED
Page 2-16

62 The DEIR indicates that the Class TI WMUs would receive nonhazardous solid waste, but would not accept putrescible cr highly odiferous materials, or municipal garbage. Acceptable wastes are listed in Appendix B. Appendix B is a listing of EPA hazardous wastes and Caiifornia hazardous wastes. Staff request a clarification regarding waste types which would be accepted at the Class II WMUs.

Assuming that the class II acceptable wastes are listed in both Appendices B and C, staff have the following concerns:

> These appendices are quite extensive and offer a categorical list fcr the hazardous waste accepted. In Appendix B, wastes are cataloged according to the EPA Hazardous Waste Code and the California Hazardous Waste Code.

63 In Appendix C, a general description of acceptable wastes is given. For both appendices, board staff requests data associated with a complete analysis of compounds found in each waste type. These ahalyses are essential for complete potential impact assessment.

The FEIR should contain permitted daily capacities for each waste type, assess potential environmental and health impacts associated with handilng and disposal of each waste type, and describe, in detail, mitigation measures which would be implemented to alleviate potential environmental degradation associated with acceptance of these wastes. This Information must assure that treatment, waste handling and subsequent disposal is environmentally safe and protects employees and public from undue exposure to hazardous substances. Sources of exposure result fron ingestation, inhalation, direct contact, and general Illness resulting from short term or long term exposures. The mere nature of chemical species included in Appendices B and C require precaution, especially whenever a variety of compounds are found in a slurry or solution.

64 To further understand the nature of GSX and their acceptance of these wastes, Board staff request a detailed breakdown of each hazardous waste, including individual chemical compound(s) from each category and the treatment procedures associated with each compound/category. The compound description, including codes, are listed below:

APPENDIX B

EPA HAZARDOUS WASTE CODE	CALIFORNIA HAZARDOUS WASTE CODE
F006 thru F012	721 thru 728
F019	711, 741, 751
F024	791, 792
K001 thru KC24	121 thru 123
K093 thru K096	131 thru 135
K026 thru K029	141, 171, 181
K083 thru K087	211 thru 214
K100 thru K106	222, 223, 231
K111 thru K118	232, 232, 241
K069, K071, K073	251, 252, 2'2
K030 thru K043	291, 541, 311
K097, K098	322, 341, 343
K123 thru K125	351, 352, 411
K048 thru K052	421, 431, 441
K060 thru K062	451, 471, 491
K045	511, 512, 513
• P___	521, 611, 751
* U_!_	

*Discarded commercial chemical products, off-specification species, container residues and spill residues in 40 CFR Tart 261.33;
Acid solution/sludges from etching of steel, titanium,aluminum;
Alkaline solutions/sludges from etching of aluminum;
Rinse water from acid or alkaline etching of metals:
Spent acid solutions from electronic components processing.

APPENDIX C

NONHAZARDOUS WMUS WASTE LIST

* Pretreatment sludge from cooling waste makeup.
* Cooling tower and boiler blowdown sludges.
* Wastewater treatment sludge and clarifier waste.
* Ash from burning of fossil fuels, biomass, and other combustible materials.
* Auto shredder waste.
* Baghouse and scrubber wastes from air pollution control.
* Catalyst from petroleum refining and chemical plant processes.
* Dewatered sludge from treatment of industrial processes water.
* Dewatered tannery sludge.
* Drilling mud from drilling of gas and oil wells.
* Refractory from industrial furnaces, kilns and ovens.
* Slag from coal gasification.
* Sulfur dioxide scrubber waste from flue gas emission control in combustion of fossil fuels.
* Tailings from the extraction, benefication, and processing of ores and minerals.
* Waste products from paper manufacturing.
* Geothermal residues and geothermal wastes.
* Refinery waste.
* Lime wastewaters.
* Stabilized product from the nonhazardous waste stabilization unit.
* Utility poles treated with creosote.
* Ash from biomedical and asbestos incinerators,
* Ion exchange resin fror water treataent.
* Dried brine wastes.

65 Appendix C appears to be the list of the "nonhazardous" waste types being proposed to be accepted at this facility.

2.4.2.2 SOLIDS TREATMENT
Page 2-21

66 It would be helpful if the FEIR contained a detailed explanation of the solids treatment procedures/mitigation measures proposed by GSX. The use of pozzolonic materials, portland cement and acid in the pug mill is a technique apparently unique to GSX. Board staff requests additional information on these materials, specific to their use in treatment of solids to be disposed of at this site, 3

2.4 BULKING LIQUID
Page 7-u

The DEIR states that the pH and oil content in hazardous waste are significant in determining their treatment of hazardous waste.
67 Are these the only criteria considered for mitigation? Board staff requests further documentation associated with hazardous waste acceptance and their mitigation procedures.

2.4.2.7 - LIQUID STABILIZATION
Page 2-23

The DEIR states that volatile organics will be removed from the liquids using the volatile organics stripper system in two steps First, gases will pass through a firebox and ultimately enter the
68 atmosphere, Are these gases solely combustion gas fumes? Board staff requests the chemical breakdown for these residual gases.

The DEIR indicates that other volatile organics will be piped to the carbon absorption unit, What is the projected life expectancy
69 of this carbon unit? In order to completely assess the gas removal system, Board staff request additional information regarding the entire liquid stabilization process, and ask that this information be included in the FEIR.

2.4.2.7 - LIQUID STABILIZATION
Page 2-24

It would be helpful for a description of the chemicals used in treatment of liquid wastes and sludges in the Nonhazardous Waste
70 Solids Unit (NWSU). Is there a potential for these liquids to be hazardous? Board staff requests #at the procedure regarding handling and storage of these chemicals be lncoporated into the FEIR.

2.4.5 - SMALL-QUANTITY GENERATOR CONTAINER AND LABORATORY PACK MANAGEMENT BUILDING
Page 2-26

Under section 2.4.5 the DEIR states that liquid and solid wastes
71 from small quantity generators would be disposed offsite. Board staff requests that all possible offsfte facilities permitted to accept such wastes be identified in the FEIR.

2.4.6 - OFFSITE TRANSPORT
Page 2-27

The DEIR indicates that unacceptable wastes could be combined with compatible wastes of other generators and transferred to an offsite handler for treatment. What specific screening techniques would
72 be implemented to prevent unacceptable wastes from entering the 'facility? Also, is there justification for offsite disposal? This section appears to be unclear. Board staff request additional information pertaining to the tracking/manifest system associated with any offsite disposal.

2.4.7 - WASTE ACCEPTANCE PROCEDURES FOR HAZARDOUS WASTES
2.4.7.1 - PREDISPOSAL EVALUATION
Page 2-28

According to Appendix D, Table 1, page D-2 "Criteria Used to Determine the Acceptance or Rejection of Hazardous Wastes", various
73 procedures will be implemented regarding onsite teeting of the waste, Board staff request further information regarding the "range" of constituents in the chemical composition of a waste, used to evaluate whether treatment/stabilization bench-scale testing is required, and its associated parameters. The range of constituent6 is undefined in the DEIR. The FEIR should contain a clear definition of this term.

Will flashpoint testing occur in the receiving area? If incoming waste contains metals in solution that are restricted because of
74 solvent interferences, how will these metals be monitored during the treatment process? This area concerns board staff since any resulting waste in this category might be mitigated and disposed into a NWMU.

2.4.7.3 - PROCEDURES REGARDING THE ARRIVAL OF WASTE ONSITE
Page 2-31

What is the definition of "restricted" versus "unrestricted" waste? The DEIR indicates that shipments are to include a stabilization process designed to minimize processing of these wastes together.
75 What potential precautions are needed if these wastes react? Board staff requests contingency plans associated with this potential risk, regarding health and safety issues for the facility staff and public. Information for a contingency plan concerning this issue is also requested.

2.5.2 - EQUIPMENT: TABLE 2-6 SAFETY AND EMERGENCY EQUIPMENT
Page 2-36,37

The DEIR states "coveralls" will be used to separate soil from the field rtaff. Is any other type of protective clothing available
76 for field personnel ragarding protection from radioactive waste? Board staff requests a further description in this area. If protective clothing comes in contact with any low level radioactive waste, will staff be required to dispose of this clothing in the

hazardous waste unit? Is there an alternative for radioactive waste disposal associated with onsite contamination? How often will radioactive areas on the site be monitored?

Geothermal waste is known to be radioactive and poses a significant health risk. If the staff works in areas of low level radioactive
77 waste, do the staff have an area for decontamination? Board staff requests information pertaining to the disposal of low level radioactive waste for the landfill.

__2.5.4.2 - HAZARDOUS WASTE HANDLING__
__Page 2-41__

The DEIR specifies that ignitable or reactive wastes are not __currently__ being accepted at the facility and that future expansion will include ignitable waste, which will undergo treatment in the
78 HWSU. After treatment, disposal of this material will be in a landfill. Board staff request which landfill this will be, since onsite mitigation measurss could allow disposal in a nonhazardous landfill.

__2.5.5.2 COORDINATION AND ASSISTANCE PROGRAMS__
__Page 2-43__

Water supply for fire fighting is obtained by the Westside Main Canal. The DEIR states that this water is brackish. Does any farmland drain excess water into the canal? Does this water currently contain any known contaminants? Board staf f requests
79 information on the current condition of the Westside Main Canal, and identify any potential beneficial uses for this water. Regardless of the present water quality, what specific measures are to be implemented to protect this water from further degradation?

__2.6.1. - LANDFILLS LINERS__
__Page 2-45 thru 2-49__

The DEIR states that a protective soil cover exists which is 18 inches thick is to be placed over the primary Leachate Collection and Removal System (LCRS). The document indicates that a geocomposite of various materials is located just below the protective soil cover. Board staff request additional information pertaining to the drainage net and fused geotextile comprising the
80 geocomposite layer used in the LCRS. What specifically comprises the geocomposite and the drainage net with geotextile fused to both sides? Will these material degrade when in contact with organics or solvents? Staff ask for additional information regarding to the stability of this liner system, considering the complexity of the proposed incoming waste stream.

__2.6.2.2 - CLASS II AND DEDICATED GEOTHERMAL LANDFILLS__
__Page 2-51__

81 The leachate collection system for the geothermal landfills indicates that a 4-inch diameter PVC pipe will provide access for

system cleanout operations. Board staff requests information on these operations regarding the procedure, frequency and maintenance of this procedure.

Page 2-54

082 Board staff requests information on the type of soil used as cover upon closure of the facility.

2.6.5.2- OPERATION INSPECTIONS
Page 2-56

083 Under the daily inspection guideline, truck waste loads will be routinely inspected, A definition for "routinely" is requested.

2.6.8 - HAZARDOUS WASTE TREATMENT AREA
Page 2-59

084 The DEIR indicates that upon leakage of the secondary containment system all materials released into this system will be removed within 24 hours or in as timely a manner as possible. It would be helpful if a better description for a "timely manner" were submitted to Board staff.

Page 2-61

08 If a storage tank or liner is damaged beyond repair, where will the damaged unit(s) be disposed of? Will the liner or tank be included into the wastestream of the facility?

2.6.9 - NONHAZARDOUS WASTE TREATMENT AREA
Page 2-62

086 According to Table 4, Appendix D, a single secondary containment system will be used to contain the total capacity of the four liquid evaporation tanks (460,000 gallons each). The combined capacity for all four tanks is 1,840,000 gallons.

In the event that seismic occurence breaches the integrity of this containment systen, substantial degradation to land, air, surface and groundwater, as well as worker health and safety nay occur. The geologic evidence provided in this DEIR indicates that ten Holocene faults exist without known termini on the site.

The volume of liquid waste is of such magnitude as to require serious consideration of possible containment alternatives. Board staff requests information on alternative measures regarding the containment of liquid wastes at this facility.

2.6.10.1 - GROUND-WATER MONITORING
Page 2-65

87 The DEIR indicates that all wells are purged three times upon measurement for best representation of the aquifer. Board staff would like to know where this water is disposed.

2.6.12.3 - WIND DISPERSAL CONTROL
Page 2-72

88 The document indicates that under windy conditions, a polymer-type material is sprayed onto the wastes at the working face of the landfill for dust control. Board staff would like to know the chemical composition of this polymer, and if it degrades when in contact with liquids, liquids containing organics, or solvents. Does this polymer represent a risk if mixed with certain materials or chemicals? Is this polymer toxic?

GEOLOGY

3.1.5.4 - CALIFORNIA DESERT CONSERVATION AREA PLAN (CDCA)
Page 3-11

89 The DEIR states that the Bureau of *Land* Management (BLM) controls the majority of the property surrounding the site, The BLM has indicated that all land surrounding the site is "prospectively valuable" for geothermal, sand, oil, gravel, gas, and sodium deposita. According to the BLM and the CDCA plan, the geology, energy and mineral (G-E-M) *resources* in the area reflect the need to protect the many varied uses of the desert, specifically

> " conservation of desert resources and mitigate any damage inflicted upon the desert which may have resulted as a result of permitted uses."

Has GSX considered the impact of their proposal in accordance with the CDCA plan reflecting the BLM's goals and objectives? Board staff *requests* a response from GSX concerning the BLM and CDCA plan.

3.1.6 - IMPACTS
Page 3-12

90 The DEIR indicates the future buildout onto adjacent lands would conflict with the proposal. According to the Imperial County Hazardous Waste Management Plan (1989) and the State Health and Safety Code Section 25202(c),

> a 2000 foot buffer between hazardous waste facilities and *residences is required.*

The project'6 plan calls for a 200 foot buffer surrounding the perimeter due to BLM's current administration of this land. Board staff requests GSX to respond to this comment, specifically covering the 230 feet vs 2000 feet buffer onland that is environmentally sensitive to the BLM and CDCA plan.

3.1.7.2 - CONSISTENCY WITH THE IMPERIAL COUNTY OPEN SPACE ELEMENT
Page 3-13

91 The DEIR statss that the project is consistent with the Resource Goals Nos. 5 and 6, and is inconsistent with open space goals to preserve natural resources (Goai No. 4). These inconsistencies should be addressed in the FEIR, or after the Imperial County Planning Commission and/or Board of Supervisors have determined whether project consistency exists with Public Health and Safety Goal No. 2 and Goal No. 4.

3.1.8 - MITIGATION MEASURES
Page 3-14

92 Board staff recognizes the listing of mitigation measures in other sections of the project. It would be helpful if a synopsis of these mitigations were assembled into a single section for use as a common reference rather than having to search through individual sections of the project for information. Board staff requests a single section devoted to the mitigation measures associated with the project.

93 In addition, as part of compliance with the California Environmental Quality Act, a Mitigation Monitoring and Implementation Schedule is required upon certification of the FEIR. Please submit this schedule to CIWMB for staff review and comment.

3.3.1.1 GEOGRAPHY AND TOPOGRAPHY
Page 3-23

The report indicates that the site has a natural drain flowing to the northeast. Elevations range between 40 feet below mean sea level at the southwestern corner to 125 feet below mean sea level near the northeast corner. As the flow pattern indicates the Salton Sea is a common basin for drainage.

94 Board staff request a further explanation associating the drainage system of the project and the potential impact of a catastrophic event resulting in drainage through the facility into the Salton Sea. What contigencies are planned to address this Issue? What specific mitigation measures are to be implemented in order to avoid any drainage of liquids fron this facility into the Salton Sea.

3.1.1.X - SITE GEOLOGY: LACUSTRINE UNITS
Page 3-26

95 The DEIR states the lacustrine units were identified beneath the project site. Board staff requests data on how this determination

was completed. Specific units, Q16 and Q110 were identified from subsurface data. It would be helpful for Board staff to know how many coreholes, etc. were used for this determination.

STRATIGRAPHIC COLUMN
Page 3-27, 28

96 What are the depth ranges below the site? Is the column to scale and is there a scale corresponding to the column?

ERCE ANALYSIS OF STRATIGRAPHY
Page 3-31

97 Board staff requests a description of methods and the total number of logs needed for the information presented. Was an assumption made on this data, and if so, how was it arrived at?

POND AREA
Page 3-32

98 What techniques and or methodologies were used for the geocbemical analyses associated with the soil samples located under the pond area, WMU's 5 and 9? How many borings were made justifying the conclusion given?

3.3.1.5 - STRUCTURE
Page 3-33, 36

99 The DEIR indicates that there are 'known displacements in the Salton Trough which can remain undetected until displacement during seismic activity.

" The Salton Trough is one of the most active regions in the world."

Onsite data has indicated the termini of several faults have not been conclusively established. These faults exhibit vertical displacement ranging from 0.5 to 80 feet. Additionally, has any analysis been conducted to possibly identify "blind" faults in the project area? Board staff requests further analysis of the structure and subsequent results from these areas and incorporation of this information in the FEIR.

3.3.1.7 - SEISMIC HAZARDS: GROUND RUPTURE
Pace 3-42

It appears that site specific dating of the fault structures was not conducted., Does CSX plan to analyze the fault structures onsite? Specific faults A, D, E, F, H, I, and J have not had their respective termini determined. This presents a potential
100 impact on the extent of onsite ground rupture hazards. Board staff request results on the fault termini. Additional information is requested for site specific dating of the fault structures associated with the Holocene displacement for onsite faults.

LIQUEFACTION AND GROUND SETTLEMENT
Page 3-44

101 Due to the stratification column data presented, the relative depths of materials present onsite remain unclear. Local exposures of sandy alluvial and or eolian materials onsite provide evidence that liquefaction and settlement potentials exist. Board staff requests additional information regarding potential settlement and liquefaction, and justification that the proposed project will *not* be affected, or pose environmental *or* health threat,

FRACTURING OF STRATIGRAPHIC UNITS (SECONDARY PERMEABILITY)
Page 3-48

102 The DEIR states, "the observed fracturing *of the* low permeability unite, identified variations in lithologic composition, and the measured variations in field permeability suggest that the effective permeability of the natural geologic materials underlying each of the Cl ass I landfills may not meet CCR Title 23 siting criteria,"... "In addition, the lack of sufficient subsurface data and field testing in the western portion of the facility makes an appropriate analysis of site stratigraphic characteristics difficult."

These statements indicate that potential impactfor the migration of leachate into the underlying stratigraphic units existo. The lack of subsurface data and field testing makes an analysis impossible. Board staff requests *a* complete assessment and data compilation pertaining to geologic properties of this site be completed and lnluded in the FEIR.

3.3.2.3 - EXPANSION
Page 3-49

103 The DEIR reports the project facilities as *being* subject to possible effects *of* expansive soils due to their clay composition. *Many* clays in deserts have high shrink-swell potentiala, In Section 3.3.3, a number *of* mitigative measures exist Incorporating this expansive behavior. The section indicates that tests remain yet to be performed by a certified geologist. Board staff requests that complete analyses pertaining to all geologic phenomena associated with the proposed project be included in the FEIR.

3.3.2.4 - REACTIVITY
Page 3-49

104 No evidence is available to substantiate the preaance of reactive soils onsite. These soils could potentially impact the proposed facilities subsurface pipelines, foundations or leachate systems. Board staff requests data on this issue, including any mitigation measures required if *such* an impact exists.

3.3.2.6 - SEISMIC HAZARD IMPACTS
Page 3-50

105 A potential impact exists from the proposed 200 foot setback baaed on the fact that the termini of faults A, D, E, F, H, I and J are not known. Additional investigation of the onsite faulting is requested by Board staff.

GROUND ACCELERATION
Page 3-53

106 The DEIR bases a peak ground acceleration of 0.60 g from horizontal projections in bedrock underlying the site. Potential exist6 for vertical acceleration. Recent earthquakes in the Whittier, CA, area indicate the presence of vertical faults. Board staff requests information substantiating the claim that only data pertaining to horizontal faults should be considered for this project.

3.3.3.2. - STRATIGRAPHY
Page 3-55

107 The report states additional geologic studies shall be conducted by a qualified geologist to more thoroughly assess site stratigraphic conditions. This information should have been included in the DEIR. Board staff requests data after this analysis has been completed.

3.4 - GROUND-WATER HYDROLOGY AND WATER QUALITY
IT ANALYSIS
Page 3-58

108 What are the depths of the two major water-bearing Units associated with the findings from IT (1987)?

ERCE ANALYSIS
Page 3-60

109 Board staff requests data pertaining to the hydraulic gradients In Q18, Q19, and Q110. The DEIR specifies that sufficient data is unavailable. This information is necessary for Board evaluation of this project, and should have been included as part of the DEIR.

3.4.1.4 - EFFECTS OF FAULTING ON GROUND-WATER FLOW
Page 3-69, 70

110 Board staff concurs that further hydrostratigraphy is in order to implement a ground water monitoring system. The DEIR states speculation exists on faults C and F and they may block groundwater flow. Board staff awaits data on this matter and data from monitoring of the uppermost zone.

TRANS. 6 - HYDRAULIC CONDUCTIVITY AND MISSIVITY
Page 3-77

111 It would be helpful if GSX were to provide information on the permeability findings from the deep zone in the vicinity of LC-1 and LC-3.

3.4.1.7 - HYDRAULIC INTERCONNECTION OF WATER BEARING ZONES
Page 3-79

112 Board staff requests information clarifying the possibility of faulting and Interconnection with water bearing zones relating the hydrostatic nature of the fault6 in the project area.

WMU'S 3, 5, 8, AND 9
Page 3-84

113 Board staff concurs with the findings relating hydraulic mounding and that a well situated farther from the WMU's could be a more useful indicator of background water quality.

LC-1
Page 3-86

114 Board staff agrees with the suggestion presented and requests that EPA Methods 8010/8020 and or Methods 8240/8270 are Included for volatile organic analysis.

MORTON SOLIDS LANDFILL
Page 3-89

115 Board staff *agrees* and requests that a relocation of the background well, MW-59, be placed in the vicinity of P-63.

3.4.1.10 - GROUND WATER QUALITY
Pase 3-92

116 Board staff requests confirmation that LC-3 lab results indicate contamination of methylene chloride and phthalates from the laboratory.

3.4.2 - IMPACTS
Page 3-95

117 Board staff requests mitigation measures indicated in this section to be mandatory. If a catastrophic event occurs, releasing large amounts of liquid waste materials within and outside the WMUs, the fact that there is a greater thickness of unsaturated zone material for the "contaminants" to migrate *is* not adequate to mitigate impacts to groundwater quality. What specific technological mitigation is to be implemented to prevent liquids from migrating?

3.4.2.2 - POTENTIAL FOR MIGRATION THROUGH GROUNDWATER
Page 3-96

Board staff requests additional data concerning the stratigraphic characteristics *of the* unsaturated zone. The DEIR states *offistc* impact6 might occur in 1-2 years, assuming contaminants move at groundwater *conditions.* This can be and is considered by Board
0118 staff to be a signif icant impact. The Imperial County General Plan identifies that groundwater in the area to have potential future beneficial uses, Again, what specific mitigation measures are to be implemented to protect ground (and surface) water quality?

3.4.3 - MITIGATION MEASURES
Page 3-97. 99

Board ***staff requests*** information on the potential for hydrogeologic
0119 impacts. The DEIR indicatee that current data is incomplete,

3.5.2.1 - ONSITE HYDROLOGY IMPACTS
Page 3-109

Are contingency plans currently available if the offsite diversion
0120 channel fails and possibly increases peak discharge wash through the facility?

Page 3-110

Are erosion clean up procedures available for the debris which could possibly be deposited in the channels? This could lead to a potential breach in downstream integrity in the Trifolium Storm
0121 Drain and subsequently carry toxic runoff into the Salton Sea. Board staff requests a discussion of possible impacts and mitigations.

3.6.1.3 AIR QUALITY TRENDS
Page 3-121

The DEIR indicates a list of toxic air contaminants without values.
0122 Board staff requests a list with actual values for the background level of air contaminants.

GENERAL GEOLOGIC COMMENT

Frior to submittal of the DEIR, an assessment relating the geology of the proposed site should have been performed. It is apparent that a certified geologist has not reviewed the project ares.
0123 Geological information on the project is incomplete. Board etaff requeste data on the project titer a *full* geological impact assessment has been performed for the project area.

GENERAL COMMENTS

A number of additional concerns arise from the magnitude of this project:

124 If CSX plans to UPC treated soil as an interim ground cover, hov will this once contaminated soil be recognized as nonhazardous and by what authority/agency will it be confirmed as nonhazardous? CIWMB have requirements pertaining to the use of alternative cover materials. Please contact Steve Austrehein-Smith of the Board's Environmental Engineering Branch at (416) 322-1443.

125 If low level radioactive wastes become a source of solid waste, will GSX incorporate this into their wastestream? If yes, please indicate the specific mitigative and monitoring plans for containment and daily maintenance.

Will employees be aware of the low level radioactivity and the fact health impacts are cumulative? Are decontamination areas proposed for employee health and safety before they begin work and just prior to their departure from the facility?

126 Kas GSX considered the possibility of airborne contamination to be greater than the 17 lb/day value associated with their proposed model? Is data associated from recent wind studies available to be included in this model? If so, Board staff. requests all information pertaining to this issue be presented in a similar manner as the original model.

CONCLUSION

The potential impacts from the proposed project may affect Imperial County in many ways. Issuance of a Solid Waste Facilities Permit, facility monitoring, groundwater stability, emissions of particulates, NOx and reactive hydrocarbons regarding air quality, education considerations and general contingency plans relating to the health and safety issues from any possible catastrophic event are of concern. This expansion proposal also includes closure and post closure considerations concerning the facility's signifieant impact(s).

127 Prior to assessing the proposed project's impacts and mitigations, a complete compilation of hydrologic, geologic, hydrolgeologic data, geotechnical, geochemical and chemical data should have been included in the DEIR. This would have allowed Board staff to conduct a complete assessment of the potential environmental impacts associated vith the proposed project. As it stands, the DEIR appears to be incomplete. Staffask that the information requested be Included in the FEIR, and adequate time for review and possible additional comment is provided.

Thank you for the opportunity to comment on this document. If you have any questions on the above comments, please contact Vincent Paul of the Board's Local Planning Division at (916) 327-2444.

Attachments

cc: Gerald Quick, Local Enforcement Agency, Imperial County
Dan Shaw, GSX

California Integrated Waste Management Board

58. The summary of the proposed project provided by the California Integrated Waste Management Board is essentially correct, with one exception. The third paragraph, which notes "This proposed project will add three Class I waste management units.. **.,** is incorrect. The proposed expansion will add two Class I landfills, WMU LC-4 and WMU LC-5, as discussed on page **2-** 14 of the Draft EIR, listed in Tables 2-4 and 2-5, and shown on Figure 2-3.

59. The 20-year Master Plan for the GSX Imperial Valley is the principal focus of the Draft EIR. It is the topic of Section 2 -- Project Description, and the subject of evaluation in the remainder of the document.

As discussed on page 3-188 of Section 3.9 (Health and Safety), a health risk assessment of the GSX facility was conducted by Clement Associates for Imperial County Planning Department, and is noted as being on file with that agency. This document evaluated potential human health risks from routine operations as well as risks from accidental releases. It formed the basis for the environmental analysis presented in Section 3.9 per direction of the lead agency, and was incorporated by reference into the Draft EIR. Therefore, it is not necessary to include the health risk assessment as part of the Final EIR.

Several geotechnical studies were used as the basis for Sections 3.3 (Geology/Seismics/Soils) and 3.4 (Ground-water Hydrology and Water Quality). These include the following, which were incorporated by reference on pages 3-22, 3-33, and 3-59:

- IT Corporation, 1987. Hydrogeologic Characterization, IT Corporation Imperial Valley Facility. July.
- IT Corporation, 1989. Revised Hydrogeologic Assessment Report. May 1.
- Environ, 1989. Quarterly Hydrologic Monitoring Report, GSX Services (Imperial Valley), Inc. Third Quarter, 1989. October.

- Environ, 1990a. Quarterly Hydrologic Monitoring Report, GSX Services (Imperial Valley), Inc. Fourth Quarter, 1989. January.

- Environ, 1990b. Monitoring Network Installation Report LC-3 Landfill, GSX Services (Imperial Valley), Inc. February 15.

- Moore and Taber, 1988. Seismic and Hydrogeologic Review. Class I Waste Disposal Site, Imperial County, California. September.

Additional hydrogeologic data not referenced in the DEIR include design reports for specific WMUs, which are available for review from Imperial County Planning Department.

60. See the Waste Analysis Plan presented in Volume I, Section 3.3 of the RCRA Part B Permit Application that is being evaluated by the EPA, DHS, Regional Water Quality Control Board, and other applicable agencies including Imperial County. This plan is included as Appendix B of this FEIR.

DEIR Section 2.4.7.1, Predisposal Evaluation, which describes the pretesting of waste streams prior to transport from the generator to the facility, is based on analysis of the RCRA Part B Permit Application Section 3.3.3, Predisposal Evaluation and from the Report of Waste Discharge Permit Application Appendix H, Section 4.0, Predisposal Evaluation. The facility conducts verification sampling/analytical on each incoming waste load as described in the DEIR Section 2.4.7.3, Procedures Regarding the Arrival of Waste Onsite; as analyzed from the RCRA Part B Permit Application Section 3.3.4, Verification Analysis of Incoming Waste Loads and from the Report of Waste Discharge Permit Application Appendix H Section 4.0 Predisposal Evaluation.

All contract laboratories used by the facility (or analytical accepted for use by the facility) are certified by the DHS Hazardous Materials Laboratory (HML) in Berkeley, CA. HML is the sole agency in California that certifies analytical testing laboratories.

61. The landfills have dedicated equipment that stays within the boundaries of the unit. When equipment is moved outside the landfill, it is decontaminated through an

extensive decon procedure as required in various operational permits and regulations, including 40 CFR and internal site operation policies.

62. The text of the DEIR incorrectly identifies Appendix B as the listing of acceptable wastes for the Class II WMUs. The correct listing is in Appendix C, as is noted on page 2-6 of the draft EIR; please see page 2- 16 of the Revised Draft EIR.

63. It is agreed the nature of the chemical species in Appendices B and C require precaution. However, it would not be feasible to obtain the exact composition of wastes listed such as plating bath sludge, pharmaceutical waste, cement kiln dust, and auto shredder waste, since the original components are so highly variable. The impact analysis of normal operations was based on detailed information presented in the ATC permit application. Table 3-30 in Section 3.6 (Air Quality) of the DEIR presents daily quantities of operational pollutant emissions expected from the various functional areas in the facility. This formed the basis for the impact analyses. Potential impacts of catastrophic events and release of toxic components during normal operations were addressed in the risk assessment conducted by Clement Associates for the Imperial County Planning Department and incorporated by reference into the DEIR. These assessments were derived from an analysis of the equipment, processes, and projected waste streams at the facility.

Identifying daily capacity limitations for each waste code is not feasible for "event based" operations, such as the GSX facility expansion. On one day, most of the trucks that arrive at the facility may contain a geothermal waste material, whereas on the following day most of the waste received may be from a household hazardous waste collection event. The annual estimates of the various waste types are presented in the RCRA Part A and Part B Permit Applications.

64. Please see response to comment 63.

65. This comment is correct. Appendix C is the list of "Wastes Amendable to Treatment in the Nonhazardous Waste Stabilization Unit and/or Disposal in Class II Landfills" from the CUP application for GSX.

66. The DEIR does not propose the treatment of solids with "pozzolonic materials, portland cement and ***acid*** (emphasis added)", rather it describes the proposed

stabilization of solids and sludges "through the addition of pozzolanic materials/additives (such as Portland cement)". The stabilization of hazardous wastes by mixing pozzolanic materials is noted as one of seven major categories of industrial waste treatment systems in EPA/450/3-89-019. Stabilization processes either exist or are in the design and construction phase at the four Class I hazardous waste disposal sites in California (i.e. Casmalia Resources and CWMI-Kettleman Hills; GSX Lokem and GSX Imperial Valley). Please see RCRA Part B Permit Application Section 3.3.3.5 and Appendix C-4 Section 2.2.2.

67. This procedure is described in the DEIR, p. 2-22 and 2-23. Any material remaining after pH adjustment, and after the water and recyclable oils have been removed, will be stabilized prior to landfilling. See Waste Analysis Plan in RCRA Part B Permit Application Section 3.3.2.3 and Appendix C-4 Section 3.3. The Waste Analysis Plan is contained in Appendix B of this FEIR.

68. A list of compounds that are expected to be emitted in the steam generator exhaust and the amounts for each pollutant are provided in Table 3-30 of the DEIR (Page 3-142). If the concentration of halogenated hydrocarbon in the vapors collected from vessels in various waste stabilization and treatment areas exceeds 100 ppm, then the vapors will not be routed to the steam generator, instead they will be sent to a cooler/condensation unit, followed by a carbon adsorption unit. Other sources that describe the vapor removal and destruction systems include the Authority to Construct application and the RCRA Part B Permit Application, Sections 3.1.4.4 and 3.3.2.2.

69. The carbon adsorber unit will consist of removable carbon and a permanent casing. Only the activated carbon used in this emission control device will need replacement. The replacement of the carbon will be determined by analysis of the treated effluent gases to ensure the required VOC removal efficiency is met. The spent carbon will either be treated and landfilled by the facility or sent offsite for regeneration consistent with RCRA requirements.

A two stage system wiil be used so if breakthrough of the first carbon scrubber system occurs, the backup system continues to treat the emissions. Please see the response to comment 22.

70. As stated on p. 2-24 of the DEIR, the materials used to stabilize the nonhazardous materials will include pozzolanic materials and water, these are nonhazardous materials which will be stored in covered, elevated tanks and handled in accordance with applicable regulations and internal site operation policies. Hazardous waste liquids will be directed to the Hazardous Waste Stabilization Unit; please see page 2- 19 of the DEIR.

71. Page 2-27 of the DEIR states offsite disposal sites that may be utilized include a liquid incineration facility in Robuck, South Carolina which is owned by Laidlaw, and a hazardous waste facility with incineration capabilities in Beatty, Nevada.

72. The waste acceptance predisposal evaluation procedures described in the RCRA Part B Permit Application Section 3.3.3.3, Predisposal Evaluation, specify screening techniques to be used for accepting and rejecting waste streams prior to arriving at the facility. The DEIR analyzed the waste acceptance procedures as outlined in the RCRA Part B Permit Application, Section 2.4.7.3, and the Report of Waste Discharge, Appendix H, Section 4.0. Please refer to 40 CFR Part 262 regarding the established procedures for manifesting and waste tracking. The GSX facility will comply with all applicable procedures.

The justification for offsite disposal is that it enables the bulk packaging of wastes that could not be disposed of within the county, and transport by qualified operators with appropriate tracking. This activity at the GSX facility is intended to provide waste handling for small quantity generators who may otherwise use inappropriate disposal methods, such as dumping into the sewer system or the municipal landfill.

73. Please refer to RCRA Part B Permit Application Section 3.3 regarding waste analysis procedures, which is included as Appendix B of this FEIR.

Stabilization will be required if the incoming waste either contains "free liquid" or if it does not pass the TCLP and/or wet tests under the state and federal Land Disposal Restrictions (40 CFR 268, 22 CCR Article 40).

74. For information on flashpoint testing and metals monitoring, please refer to RCRA Part B Permit Application Section 3.3 regarding waste analysis procedures. No

waste that is accepted as hazardous waste will be sent for treatment, in any form, to the nonhazardous treatment unit or for disposal in a nonhazardous waste landfill.

75. "Restricted Wastes" are those wastes defined as restricted hazardous wastes by 22 CCR 66900, which states:

> The following hazardous wastes are subject to the restrictions specified in this article:
>
> (a) Liquid hazardous wastes containing free cyanides at concentrations greater than or equal to 1000 mg/l.
>
> (b) Liquid hazardous wastes containing the following dissolved metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:

Arsenic and/or compounds (as As)	500 mg/l
Cadmium and/or compounds (as Cd)	100 mg/l
Chromium (VI) and/or compounds (as Cr+ VI)	500 mg/l
Lead and/or compounds (as Pb)	500 mg/l
Mercury and/or compounds (as Hg)	20 mg/l
Nickel and/or compounds (as Ni)	134 mg/l
Selenium and/or compounds (as Se)	100 mg/l
Thallium and/or compounds (as Th)	130 mg/l

> (c) Liquid hazardous wastes having a pH less than or equal to two (2.0).
>
> (d) Liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to 50 mg/l.
>
> (e) Liquid hazardous wastes containing halogenated organic compounds in total concentration greater than or equal to 1000 mg/kg.

The DEIR indicates these restricted wastes will be scheduled for stabilization and treatment separate from unrestricted wastes so they will not react. Bench-scale treatability tests will identify wastes that could produce potentially dangerous reactions during actual treatment and disposal. See the Waste Analysis Plan from the Part B Permit Application, included as Appendix B of this FEIR, for details. The Contingency Plan prepared by GSX is in Section 3.7 of the RCRA Part B Permit Application.

76. Protective equipment that may be worn by staff include various types of coveralls and tyvek suits (see Table 2-6 of DEIR). Field staff are required to shower and change prior to leaving the facility after work Radioactive wastes (including "low level" radioactive materials) are excluded from hazardous wastes classification in 40 CFR 261.4(a)(4) and will not be accepted at the facility. Clothing that comes

into contact with Naturally Occurring Radioactive Material (NORM) wastes, such as geothermal brines, does not require special treatment. However, mitigation measures to maintain radiation exposures from NORM "as low as reasonably achievable" are described in Section 3.9.3.2 in the DEIR. There will be no areas classified as radioactive on the site, and all incoming waste is tested to insure that radioactive materials do not enter the facility. Please see Section 3.3 of RCRA Part B Permit Application "Waste Analysis Plan," included as Appendix B of this FEIR.

77. The health risk for the geothermal monofill (Appendix F, Table 8 of the DEIR) shows that the dose that workers potentially could receive under worst case conditions is below the regulatory threshold for the general population of the state of California. Further information is contained in Appendix F of the DEIR. See response to comment 76.

78. GSX has not proposed to dispose of treated hazardous wastes in non-RCRA landfills. Wastes classified as hazardous would be disposed of in LC-2, LC-3, LC-4 or LC-5 only.

79. The Westside Main Canal contains raw Colorado river water from the All-American Canal. The total dissolved solids (TDS) in the Westside water is approximately 700 ppm (Imperial Irrigation District 1990), therefore the DEIR was incorrect to label this water as "brackish." Please see page 2-44 of the Revised Draft EIR. Farmland does not drain excess water into the canal; the drainage system is separate. It is not known if the water contains contaminants; neither the Imperial Irrigation District, the Regional Water Quality Control Board nor the City of Westmorland was able to provide water quality information regarding contaminants. According to the Imperial Irrigation District, the primary beneficial use of the water is irrigation; the secondary use is domestic, although the water is not potable without treatment. Measures designed to protect surface water include the run-on control system described on page 2-51 of the DEIR, the runoff control system described on page 2-52 and the channel improvements and maintenance program and water quality sampling plan described on pages 3-l 10 and 3-l 15. Offsite runoff diversion berms and channels intercept most runoff that previously drained onto the site. The onsite run-on control system will divert runoff away from the landfills and treatment facilities to prevent the water from picking up any

contaminants. The runoff control system will remove water collecting in the landfills (a 3-foot freeboard will be maintained in Phase I of landfill operation and a channel will be maintained along the perimeter in Phase II of landfill operation, see Figure 2-7 in the DEIR). Water removed from the Class I landfills will be treated or stored onsite; water from the Class II landfills will be used in the waste stabilization units. Additional measures required in the EIR include some form of bank armoring to protect channels from erosion, and a channel maintenance program to include both routine inspections and patrol and inspection during and after storms. Any erosion damage shall be repaired and debris shall be cleared. In the event a storm causes damage to any waste treatment or disposal facility, a water quality sampling plan shall be implemented. If contaminants are identified, appropriate remediation efforts shall be conducted.

80. A complete discussion of the landfill liner system, including the geosynthetic construction materials, is contained in the design reports for Waste Management Units LC-1, LC-2, LC-3, LC-4, and LC-5 as found in Appendices D-4, D- 11, D-12, D-13, and D-14, respectively of the RCRA Part B Permit Application.

81. For a complete description of this process, see the Report of Waste Discharge Permit Application Vol. II, Section 5.3 and Vol IV, Section 5.3.

82. The protective soil cover mentioned in the DEIR will consist of soils from borrow sources found onsite, which are predominantly SCS Soils CL and CH.

83. Every truckload of waste will be inspected when it arrives on the site.

84. The removal of any spill materials will be an immediate priority. 'Timely manner" in this context means as soon as operational conditions permit, (i.e. mobilization of a vacuum truck, etc.). GSX will comply with regulations that require immediate clean up, or immediate containment of a larger spill that would require longer than 24 hours to clean up.

85. Any damaged storage tank or liner from this treatment area deemed to be beyond repair will be disposed of in a hazardous waste landfill at the facility. Methods for including these materials into the waste stream would be consistent with methods

for closure of the Hazardous Waste Stabilization Unit described in Table 5 (Closure Plan) of Appendix D in the DEIR.

86. The nonhazardous waste evaporation tanks would contain water left over after oils have been skimmed and metals have been precipitated. Since the tanks will hold nonhazardous materials only, a seismic occurrence which breaches the integrity of the secondary containment system would not result in "substantial degradation."

87. Water recovered from well purging will be managed as a nonhazardous waste. It will be stored in the Area 30 Tank Farm and used for dust suppression in the landfills.

88. The polymer in question has been approved by EPA, DHS, and the RWQCB. The stabilized foam application system involves premixing a proprietary 3M surfactant-based temporary foam concentrate at 6 percent in water and passing the pressurized premix through a hose line. A proprietary 3M agent is then injected oreducted at about 6 percent concentration into the temporary foam stream and a stabilized foam is produced by passing the stream through a conventional air-aspirating or air-injecting foam nozzle. 3M has tested the foam products for toxicity, environmental toxicity, leachability, persistence, and degradation products. Results of this testing are documented in a paper presented at the International Congress on Hazardous Materials Management, June 8-12, 1987, Chattanooga, Tennessee (Alm, et al. 1987). This paper is included as Appendix D in this FEIR. Animal testing indicated the concentrated stabilizers used in making the foam are practically nontoxic orally, but mildly irritating to skin and moderately irritating to eyes. Additional information regarding the polymers used are available on the Materials Safety Data Sheets which are maintained at the GSX facility.

89. The project's consistency with the California Desert Conservation Area Plan (CDCA Plan) is discussed on page 3-24 of the DEIR. The project would be compatible with the G-E-M resource extraction activities and therefore is consistent with the CDCA Plan.

90. As is discussed in the DEIR, State Health and Safety Code Section 25202(c), requires that a 2000-foot buffer exist between hazardous waste facilities and residences. The proposed project is consistent with this section of the code since a

2000-foot buffer does exist between the project and existing residences. Most of this buffer is offsite on BLM lands listed as having potential for the extraction of G-E-M resources.

The County of Imperial has included the BLM lands around the project site within its General Plan as Desert Residential or General Agriculture. The project would preclude the development of any residences within 2000 feet of the facilities under the County's General Plan. This is not considered to be a significant land use impact of the project for two reasons: 1) the County does not have jurisdiction over BLM land, and 2) much of the 2000-foot buffer area is already restricted from residential development by State Health and Safety Code 8250202(c) due the presence of the existing GSX facility.

91. As noted on page 3-14 of the DEIR, final determination of project consistency with applicable policies, goals, and objectives will be made by the Imperial County Planning Commission and/or Board of Supervisors.

92. Table ES-l of the DEIR summarizes impact and mitigation for the GSX Expansion. A more detailed discussion of impacts and mitigation measures is presented in the GSX Imperial Valley Facility Expansion Interagency Environmental Compliance Program, or "mitigation monitoring report" prepared by ERCE in September 1990 for the County of Imperial Planning Department. This draft is still under review and will be finalized when the FEIR is approved.

93. As stated in response to comment 92, a draft mitigation monitoring program has been submitted to the County. The ~~first~~ final mitigation monitoring program will be distributed at the same time as the final EIR.

94. The drainage system is explained in the Surface Water section, which begins on page 3-102 of the DEIR. Please see the response to comment 79 for details on specific measures to protect water quality.

95. The lacustrine units were identified by IT in both the Hydrogeologic Assessment Report (1989) and the Hydrogeologic Characterization Report (1987). These lacustrine units were described on the basis of surface geologic mapping, trenching,

and borehole logging. Over 225 logs from boreholes and 140 trenches were used to establish the stratigraphy.

96. Figure 3-10 is a schematic stratigraphic column derived from boring log data from multiple wells installed in and around LC-3. Since it is schematic, the diagram is not to scale and infers no scale except for the approximate thickness of each stratigraphic unit. The word "schematic" will be added to the title of the figure; please see Figure 3- 10 in the Revised Draft EIR.

97. The methodology of ERCE analysis included a review of boring logs and cross sections provided in the Hydrogeologic Characterization Report (IT 1987) and Hydrogeologic Assessment Report (IT 1989). No assumptions were made other than those necessary in standard interpretation of geologic data.

98. A detailed methods section concerning the geochemical analysis of soil samples associated with WMU's 5 and 9 is available in the Hydrogeologic Assessment Report-Appendix G (IT 1989). A total of seven borings were taken and analyzed for pH, soluble chloride, carbonate, bicarbonate, sulfate, sulfite, sodium, potassium, calcium, magnesium, WET metals, volatile organics, oil, grease, total organic carbon, and total organic halides.

99. The necessity for future studies to more precisely delineate the extent and age of onsite fault traces is stated on page 3-55 in Section 3.3.3 of the DEIR. It is stated that "all recommendations and conclusions generated from the study will be incorporated into the final project design." In particular, grading permits from Imperial County for each WMU would be approved or disapproved based on the specific information. These permits are subject to CEQA, so additional environmental review could be required by the County. In addition, during grading a qualified geologist will be onsite to assess the potential for "blind" faults that may be encountered during WMU construction. The DEIR has been modified to clarify this issue. Please see page 3-56 of the Revised Draft EIR.

100. See response to comment 99.

101. The alluvial and eolian material are under unsaturated conditions (20-80 feet above the water table) and therefore the potential for liquefaction is greatly reduced. In

addition, Section 3.3.3, page 3-55 of the DEIR states that suspect material will be excavated and recompacted or replaced.

102. Section 3.3.3, page 3-55 of the DEIR states that detailed geologic studies shall be conducted in the western portion of the facility. These studies shall include geotechnical testing of lithologic materials as well as laboratory and field evaluations of permeability. If these geologic studies prove permeabilities are not low enough to meet Title 23 siting criteria, the situation may be mitigated by implementation of project design features, such as liners and leachate collection and removal systems. These data shall be included in the final design reports submitted to appropriate local, state, and federal agencies for final approval. The Imperial County Hazardous Waste Management Plan (1989), approved by the State of California, specifically provides for engineering alternatives where the permeabilities of underlying geologic materials do not meet Title 23 siting criteria.

103. Site specific tests will be performed by a certified geologist as part of final design. The siting and design of each WMU is subject to approval by the County through the grading permit process. See response to comment 99.

104. Reactive soils are best determined on a site by site basis. As stated in the DEIR Section 3.3.2.4 on page 3-49, any potential impacts could be mitigated below levels of significance by utilizing standard construction techniques, such as the use of corrosion resistant materials.

105. This issue is addressed in the response to comment 99 and in Section 3.3.3, page 3-55 of the DEIR. The investigation concerning onsite faulting will be incorporated into final project design and hence could enlarge the 200-foot setback area. Please see page 3-56 of the Revised Draft EIR.

106. The peak horizontal ground acceleration calculated in the DEIR takes into account all types of faults and does not exclude vertical faults. "Horizontal" accelerations refer to ground movement only and not to the types of faults (i.e., normal, strike-slip, thrust) that may have produced these ground motions. Peak horizontal ground accelerations are much more important than vertical accelerations in assessing the potential destructiveness of an earthquake.

107. The detailed stratigraphic study to determine reliable values of permeability in the western portion of the facility is put forth as a mitigation measure. The results will be included in the final design reports which will be submitted to the appropriate regulatory agencies for approval. See Section 3.3.3, page 3-55 of the DEIR.

108. The depth from ground surface to the top of the shallow water bearing unit (Ql_5) ranges from 0 to 80 feet. The depth to the top of the deep water bearing unit (Ql_6) ranges from 20 to 100 feet.

109. The DEIR states in Section 3.4.3, page 3-98, that studies shall be conducted during the design of the expansion to provide additional information in regards to the deep aquifer (Ql_8–Ql_{10}), the nature of the ground-water movement across faults, and the characteristics of the uppermost saturated zones underlying the project area. This hydrogeologic information will be evaluated by all appropriate regulatory agencies prior to approval of final project designs.

110. See response to comment 109.

111. The DEIR recommended the conduct of pump testing to further assess the permeabilities of water bearing zones (DEIR page 3-99). However, page 3-101 of the Revised Draft EIR includes the recommendation that conduct of permeability testing shall include specific information regarding the deep aquifer in the vicinity of LC1 and LC3.

112. In Section 3.4.3 on page 3-98 of the DEIR, it is stated that a study shall be conducted to evaluate the hydraulic influence of faults. It is also stated that such information will be evaluated by all appropriate agencies prior to approval of final project design.

113. Comment noted.

114. Comment noted.

115. Comment noted.

116. Please see the letter from the laboratory in Appendix E of this FEIR.

117. Section 3.4.3 pages 3-99 through 3-102 of the DEIR, provides for a detailed vadose and ground-water monitoring program of the expanded facility. The monitoring program would provide early warning of a catastrophic spill to enable immediate remedial action. Technological mitigation includes the use of liners and leachate collection and removal systems. In addition, liquid wastes will not be placed in the landfills.

118. Please see response to comment 117. Also see page 3-98 of the Revised Draft EIR which states that offsite impacts might occur in 8-13 years. The calculation of groundwater velocities that would lead to impacts in 1 to 2 years was based on erroneous hydraulic gradient data and has been corrected in this erratum.

119. The data deficiencies are provided for in mitigation measures. Final project design will not be approved until these deficiencies are eliminated. Please see the response to comments 101 and 102 of this letter.

120. Contingency plans have been detailed in Section 3.7 of the RCRA Part B Permit Application and are briefly discussed in Table 2 of Appendix D of the DEIR.

121. Page 3-l 15 of the DEIR discusses a mitigation measure consisting of a channel maintenance program which will require the patrol and inspection of channels during and after storms. Erosional damage shall be repaired and channels shall be kept clear of debris. Potential offsite impacts are discussed in page 3-l 10; the mitigation measures are discussed on page 3- 110 and 3-l 15 of the DEIR.

122. Detailed air toxics monitoring data collected at the site are included in the Air-Solid Waste Assessment Test (SWAT) document filed with the DHS. Some historical data can also be found in the RCRA Part B Permit Application (Section 5.7 and Appendix C-6).

123. Available data were used to evaluate the geology of the proposed site. The results of this evaluation, which was supervised by Mr. Jonathan Herwig (C.E.G. 1374) of ERCE, are presented in Section 3.3 of the DEIR. It may not have been apparent a certified geologist performed the evaluation because Mr. Herwig's registration was not included in Section 11 (Certification of Accuracy and Qualifications). This

omission is corrected on page 11-1 of the Revised Draft EIR. Also, Ms. Jessica Donovan (R.G. 3791) of ENVIRON, and Mr. Mark E. Unruh (C.E.G. 1176) of IT Corporation prepared and/or reviewed the hydrogeological data and reports for the facility.

The DEIR notes geologic information on the site is incomplete, and additional data need to be developed during final design of new facilities, and as soon as feasible for certain existing facilities. This information will be circulated to all appropriate agencies when it is available.

124. The only treated soil that would be used as interim ground cover would be material that was originally nonhazardous.

125. The waste streams that GSX is proposing to accept do not include low-level radioactive waste. These wastes would be expressly prohibited from the site in the CUP and other permits for the expansion.

126. The estimated landfill PM_{10} emission rate of 17 lb/day is based on conservative assumptions regarding operation of equipment and expected waste volumes. It is derived from well-established fugitive dust emission factors, and does not result from a "model" in the sense that this term is used to develop the facility's waste stream characterization.

127. Comment noted. It is recognized that the GSX Facility Expansion is a complex project which could affect Imperial County in many ways. All the issues delineated as being of concern in this comment were addressed in the DEIR. As noted in Section 1 of the DEIR, an EIR is an informational document which is designed to inform decision-makers, other responsible or interested agencies, and the general public of the potential environmental effects of a proposed project. This evaluation must be based on all available information that can be obtained about the project and the environment in which it will be located. The amount of data available is dependent on the timing of the EIR. More specific data regarding a project develops as the project evolves from conceptual planning to final design. As noted in CEQA Guidelines 15004(b):

> Choosing the precise time for CEQA compliance involves a balancing of competing factors. EIRs and Negative Declarations should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design and yet late enough to provide meaningful information for environmental assessment.

The Guidelines explain further that early preparation of the environmental documentation: "enables agencies to make revisions in projects to reduce or avoid adverse environmental effects before the agency has become so committed to a particular approach that it can make changes only with difficulty."

The environmental review process was begun when GSX had completed their RCRA Part B Permit Application for the EPA, and their CUP application for Imperial County. This timing was determined by the lead agency to be consistent with the balancing required in CEQA. It is acknowledged that specific hydrogeologic and geologic data regarding the new facilities was not available at this time, since that level of geotechnical study is typically conducted as part of final design. However, the DEIR clearly requires this and other geotechnical information to be developed as a condition of project approval.

The EIR should not be labeled incomplete because it did not present a "complete compilation of hydrologic, geologic, hydrogeologic, geotechnical, geochemical, and chemical data." CEQA Guidelines specifically discourage the inclusion of highly technical and specialized analysis and data in the body of an EIR, as follows:

> -15006. Public agencies should reduce delay and paperwork by:
>
> (o) Preparing analytic rather than encyclopedic Environmental Impact Reports.
>
> (s) Emphasizing the portions of the Environmental Impact Report that are useful to decision-makers and the public and reducing emphasis on background material.
>
> (t) Using incorporation by reference.
>
> -15148. Preparation of EIRs is dependent upon information from many sources, including engineering project reports and many scientific documents relating to environmental features. These documents should be cited but not included in the EIR.

The key references for this EIR were the 26-volume RCRA Part B Permit Application, the 6-volume Report of Waste Discharge, the Conditional Use Permit Application, and the Authority to Construct Permit Application. These volumes are on file with the Imperial County Planning Department and were incorporated by reference into the DEIR.

TO: | FROM: | DATE
FAX #: 458-0493 | FAX #: | PHONE # 339-4236 | NO. PAGES INCLUDING THIS PAGE 37

PLANNING / BUILDING DEPARTMENT
COUNTY OF IMPERIAL
(619) - 339 - 4236

August 21, 1990

MEMORANDUM

TO Jurg Heuberger, Planning Director

FROM John L. Morrison, Assistant Planning Director

SUBJECT Laidlaw (GSX) EIR

The following are my comments regarding the Environmental Impact Report prepared for GSX by ERCE.

1) Page 1-4. in the second paragraph it states that "after several additions Imperial County deemed
128 the application acceptable'*. My comment on that is, the word "addition" I believe should possibly be "revisions".

2) On the same page, at the bottom, the item we discussed before. That CEQA requires that major consideration be given to avoiding environmental damage, etc. etc. I do not believe (i.e. the Planning Department) must balance these adverse environmental effects against economic and social gains. As matter of fact, I believe the opposite is
129 true, that we must *not* consider economic and social goals. I also believe that if there are any overriding economic or social goals, perhaps the decision-makers can make findings on these facts. This statement is misleading, misrepresentative and possibly completely untrue and should be removed in its entirety.

3) 2-2, under 2.3 in the first paragraph. The statement is "the facility is currently operating
130 under its amended Conditional Use Permit" and this should have been passed in 1583 or 1984.

4) Figure 2-2 on page 2-7. In this depiction, again shown on LC-1, they have depicted on the
131 Southwest a depression or feature that has since been eradicated by filling under a permit, so this feature is no longer on-site and should be removed.

5) 2-14, at the top under 2.4.1 Land Fills. This statement is "the previous Conditional Use Permit allowed for the construction of three (3) Class I
132 landfills on-site" I have looked back through all the documentations I am aware of and in no place was there a mention of the number landfills to be built on-site. So I believe this is a mis-statement.

PROJECT TYPE

FILE NO

133 6) 2-15, first sentence in the written text. "Waste will arrive at LC-1-5 in dump trucks and container transport trucks", I believe LC-1 is completely full and is being closed and should not be mentioned.

134 7) 2-21, at the top, in the discussion of loading wastes with a front end loader into a feed hopper to begin the stabilization process. My questions is how do we prevent dust and emissions from this rather crude method of loading these wastes which, by their own definition, are suppose to be dry. It seems to me that we are going to have a repetition of what we encountered in Bakersfield with a front end loader and the clouds of dust emanating from that area.

135 8) 2-22, under 2.4.27 Liquid and Stabilization. The discussion that the two (2) steam generators are low pressure steam generators that are natural gas fired, there is also comment on the next page on natural gas. A call to the gas company revealed that the nearest gas main is in Westmorland, later on in this document it also mentions that these steam generators are propane fired and possibly (GSX) will work out an agreement with the gas company sometime in the future to run a gas line out there for this project. At this time these two mentions of natural gas should be eliminated and propane substituted.

Added comment at this point, also on page 2-23 the middle paragraph, steam generator is <u>spelled</u> in correctly.

136 9) 2-42, under 2.5.5 second paragraph. Conditional Use Permit #632-53, should be #632-83, in two (2) places.

137 10) 2-43, under 2.5.2 third dot. The statement is that "although the canal water is brackish it is suitable for fire fighting and truck and equipment washing", if this is a correct term "brackish" my thought processes need to be rearranged.

138 11) 2-44, under 2.6.1.1 Class I Landfills. The description of the liner system for LC-1, first item, clay liner is called out here as 2 feet minimum thick, all of the documentation that we have on record for LC-1 required 3 feet minimum for the clay liner.

139 12) 2-45, at the top, Protective Soil Cover consists of 12 inches of soil, our records indicate 18 inches.

If you turn the page to 2-46, Figure 2.2-5 Should confirm the previous two comments.

13) 2-59, middle of the page, where it calls for a 6 inch above ground curbing, this 6 inch above ground curbing was to contain spills inside the
140 containment area. If you turn back to page 2-26, the Planning Department has already made a comment that deemed that this containment was inadequate.

14) 2-68, middle of the third paragraph, a word is
141 misspelled, it says **"fate** and transport" studies, I believe it may be prove to be **"rate".**

15) 2-72, again my disagreement with GSX in the middle of the first paragraph the statement "during
142 high winds trucks will not be allowed to unload", I believe we need a definite number at which high winds are present.

16) 2-74 through 77, and these are general thoughts in this area.

a) Have we given consideration to the removal of the processing facilities (i.e. tanks, piping,
143 foundation, building, etc.) when the entire facility goes into post closure?

b) In reading the post closure plans, I have not, to my knowledge and **recollection**, read **any** discussion of the maintenance of the off-site dikes
144 that protect this facility and divert the storm water.

17) 2-75, 2.7.2.1 Inspection Plan. The thrust of this section seems to be that the inspections will
145 be done on less than a monthly basis for this 30 year post closure maintenance period, I do not believe anything less than monthly would be adequate.

18) 2-78, last sentence on this page has a mis-
146 spelled word, there is a **"d"** on the end of continue that should not be there.

19) 3-22, first paragraph at the top, in summary **"the** GSX facility will have no significant visual impact on the surrounding areas", I disagree with
147 this statement entirely. The proceeding section dealing with visual impacts did not discuss the two (2) **100-foot** smoke ~~stakes~~ STACKS for these steam generators and therefore is inadequate.

20) A general comment dealing with the groundwater analysis which appears to begin on page **3-58** through 3-115. I specifically call your attention to page 3-69 at the bottom where **ERCE's** opinions about all the
148 former studies **done** on hydrology appear to be at question, this could become a real source of concern to say the least. I certainly would not be able to comment on the adequacies of the previous groundwater analysis by various consultants.

21) 3-124, third paragraph, second sentence it seems tc state that the rain fall less than 3 inches per Year and the maximum annual precipitation is approximately 7 inches, I believe this statement adds further credence to the cause for my concern as
149 expressed previously in regards to the lack of a maintenance program for the off-site dike(s) that protect this facility. Historically, this 7 inches of maximum rain fall comes in a very short period of time and causes our local problem known as flash flooding.

22) 3-126, under Construction Emission, there is a discussion here of the dust emissions by construction methods and in this statement is a discussion of "blasting equipment if rock is
150 encountered and blasting is permitted", it boggles the mind that anyone could consider that we have rock on site after all of the extensive trenching, boring, studies, etc. that have gone on, and supposedly without a doubt prove that the site is nothing but clay. I would suggest that we have that removed.

23) 3-144, Section at the third dot (Low Propane
151 Generation System) which contradict the previous discussion on natural gas for this steam generation system.

24) 3-179, the end of the discussion on traffic impacts, to my knowledge this EIR and the Risk Assessment have not discussed the potential for any kind of situation at the railroad crossing on
152 Forrester just North of Evan Hewes Hwy, which has been the site of numerous accidents with trains and trucks, the last two in the month of July, or early August.

25) 7-3 Traffic, the discussion of alternates to the project wherein the discussion of the no project alternative would somehow seem to continue a significant safety impact due to the school bus stop located at the intersection of the GSX access road and State Route 86. It would be fool hearty for us to allow this situation to continue, now that it has
153 been brought to our attention, simply because we do not have a project being considered. Unless the people that have written this document are dealing with people dumber than I think they are, A simple movement of this bus stop should be instigated immediately. I don't believe a death or serious accident should have to happen before we respond.

26) 7-4, it seems that the discussion of the no project alternative is written from the proponents prospective and not as a disinterested third party,
154 ERCE should be looking only at the impacts of the project. I would suggest strongly that we look at re-wording this discussion.

27) 7-10, my feeling at this point is that the
author has taken the site and made all of the
requirements for any site fit this particular area,
and therefore could only come to the conclusion that
the GSX Inperial Valley Site is considered the most
155 suitable for a hazardous waste facility. In light of
the fact that the majority of the people
participated in writing this document live no where
near this facility, I would have to think that that
may have had something to do with their final
conclusion.

28) 7-12 through 13, Incineration, and if-there is
156 no Incineration proposed at this site, which has
been my understanding for sometime, why do we now
discuss Incineration, or is this the "achilles heel"
of this document?

JLM/ jf/p78/jurg

Imperial County Planning Department, August 21 letter

128. Correction noted. Please see page l-4 of the Revised Draft EIR.

129. The statement was based on CEQA $15021(d) which reads:

> CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian. An agency shall prepare a statement of overriding considerations as described in Section 15093 to reflect the ultimate balancing of competing public objectives when the agency decides to approve a project that will cause one or more significant effects on the environment.

130. Correction noted. Please see page 2-2 of the Revised Draft EIR.

131. Comment acknowledged. The graphic was not altered as it illustrates both active and inactive facilities which were discussed in the text.

132. Correction noted. Please see page 2-14 of the Revised Draft EIR.

13 3. Correction noted. Please see Table **2-** 1 and page **2-** 15 of the Revised Draft EIR.

134. The emissions of PM_{10} that will occur as a result of dropping of wastes into the feed hopper are included in both the project emissions inventory and in the modeling that was conducted to evaluate project impacts to air quality. These calculations indicated that the source in question was a very small contribution to the facility's offsite PM_{10} impacts. (The feed hopper is more than 200 feet from the site boundary.) Some dust at the hopper site will probably occur intermittently, but according to the analysis presented in the Authority to Construct application, this operation will not be a significant source in terms of offsite impacts.

135. Correction noted. Please see page 2-23 of the Revised Draft EIR. Also see page 3-246 of the draft EIR for a discussion of the potential future gas utility connection.

136. Correction noted. Please see page 2-43 of the Revised Draft EIR.

137. See page 2-44 of the Revised Draft EIR.

138. Correction noted. See page 2-45 of the Revised Draft EIR.

139. Correction noted. See page 2-46 of the Revised Draft EIR.

140. Comment noted. See page 2-60 of the Revised Draft EIR.

141. “Fate” is spelled correctly in the EIR. The studies examined the fate of the chemicals.

142. See the response to comment 35.

143. Page 2-74 of the DEIR mentions several closure activities including: “Removal of structures, if necessary, including concrete slabs, and disposal in an onsite landfill." The closure plan, which describes dismantling of the processing facilities, is summarized in Appendix D, Table 5 of the DEIR.

144. Page 2-75 (Postclosure Plan) calls for the regular inspection of the run-on and run-off control system, which would include off-site dikes. This issue has been clarified on page 2-76 of the Revised Draft EIR.

145. Comment noted. The postclosure inspection plan proposed by GSX calls for all of the WMUs to be inspected monthly during the first year and semiannually thereafter throughout the 30-year initial postclosure maintenance period. The County can establish a more stringent inspection period, if desired.

146. Correction noted. See page 2-79 of the Revised Draft EIR.

147. Comment noted. Page 3-21 of the DEIR discusses one stack and four silos between 80 and 100 feet high. The text has been revised to indicate that two stacks would be constructed. See pages 3-21 and 3-22 of the Revised Draft EIR. The conclusions of the visual resource section remain the same. The facility would still not be readily visible to offsite viewers, and views of the site from the lemon grove/farmhouse are blocked by a row of tamarisk trees.

148. Comment noted. Part of ERCE's scope of work in preparing the EIR consisted of "review, evaluation, validation, and summarization of technical studies" that were conducted by others. ERCE staff who conducted this review and evaluated for groundwater issues are thoroughly qualified to comment on the adequacies of previous groundwater analysis.

149. Comment noted. Please see response to comment 121.

150. See page 3-129 of the Revised Draft EIR.

151. See response to comment 135.

152. As required in the scope of work for the EIR, the analysis and findings for risk assessment in the DEIR were based on the document prepared by Clement for Imperial County. Accidents with trains and trucks were not addressed in Clement's document and thus not in the DEIR.

153. Comment noted. A significant safety impact due to the school bus stop location is identified for both the no project alternative and the proposed project (prior to mitigation). This impact will cease to exist when the school bus stop is moved.

154. The no project alternative was written as an objective evaluation of operations which would continue without approval of the proposed project. The existing facility would continue to operate under its current permits even if the proposed project is not approved; therefore, discussion of the no project alternative had to include impacts of the existing facility. The mitigation measures associated with the proposed project which could reduce existing environmental impacts would not be implemented unless the proposed project is approved by the County and the measures are incorporated into conditions of approval. It is also a fact that the no project alternative would not serve the basic project objective of adding treatment facilities and increasing the disposal capacity for hazardous and non-hazardous wastes generated by industries and small quantity generators in southern California, including Imperial County. The no project alternative could lead to opening up similar capacity elsewhere, possibly in a new area without an existing site. Drafts of the alternative section were sent to County Counsel for review; no comments were received.

155. The screening criteria used in Section 7.3 (Alternative Locations) of the DEIR are consistent with criteria used for other similar studies, including the 1978 California Solid Waste Management Board Study where potential locations in Imperial Valley were screened for their suitability as Class I disposal sites. Permeability, land use conflicts, proximity to major faults, and potential flooding are key criteria for siting such a facility. Four alternative sites identified in the screening analysis were discussed on page 7- 11 of the DEIR. Each of these sites were determined to be subject to significant traffic, biological, and land use impacts, except for the area already dedicated to the Monofill geothermal waste disposal site. In accordance with CEQA Guidelines 15126 (d) (3) and (5) the alternatives section focused on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance. The selection and discussion of alternatives was designed to foster "informed decision-making and informed public participation." The final conclusion that no feasible alternative would reduce the environmental effects of the proposed project is based on an objective evaluation of general geology, land use, and flooding conditions throughout the county primarily obtained from California Division of Mines and Geology (CDMG) County Report 7," Geology and Mineral Resources of Imperial County, California", 1977.

156. Incineration is not part of the proposed project, with the exception of the steam generators proposed to destroy VOCs generated in the treatment process. These steam generators are discussed throughout the DEIR. Incineration is discussed in Section 7 as an alternative technology. The section concludes that the use of incineration for treatment of wastes would not result in fewer environmental impacts and thus is not recommended.

PLANNING DEPARTMENT

IMPERIAL COUNTY

PLANNING / BUILDING INSPECTION / PLANNING COMMISSION / A.L.U.C. / L.A.F.Co.

Jurg Heuberger — Director

October 2, 1990

Environmental and Energy Services Company
5510 Morehouse Drive
San Diego, CA 92121
Attn: Katherine Hon, P.E.

SUBJECT: Change in Federal Register as per attached letter

Dear Katherine:

157 September 26, 1990 I received the attached letter dated September 24, 1990 from Roger Higson. As you can see the letter deals with a change in the Federal Register as of March 29, 1990 and which became effective September 25, 1990. This rule change replace certain extraction procedure tests, formally known as EP Tox Test, now called TCLP Test. Additionally, however, this federal rule change also changed and or added classification codes, specifically it apparently added code D018 through D043. Again, a copy of those codes is attached. I did not see this change addressed in the draft EIR although I may have missed it. However, if it hasn't I think it is important that it be reviewed as part of the final EIR.

If you have any question, please feel free to call me.

Sincerely,

JURG HEUBERGER
Planning Director

ATTACHMENT

cc:
John L. Morrison, Assistant Planning Director
Richard Cabanilla, Planner III-M
Danny Shaw, GSX Facility Manager
File: GSX/EIR

JH/tc/P77/ERCE

GSX

GSX Services (Imperial Valley), Inc.

September 24, 1990

Mr. Jim Brietlow
U.S. Environmental Protection Agency
1235 Mission Street
San Francisco, CA 94103

Mr. Mohinder Sandhu
Department of Health Services
Toxic Substances Control Division
Facility Permitting Unit
245 W. Broadway
Long Beach, CA 90802

RE: GSX SERVICES (IMPERIAL VALLEY), INC.
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

Dear Sirs:

On March 25, 1990, the USEPA promulgated the Toxicity Characteristics (TC) Rule which on September 25, 1990, will result in the replacement of the current Extraction Procedure (EP) leach test with the Toxicity Characteristics Leaching Procedure (TCLP); expand the current list of toxic constituents of concern to add twenty-five (25) organic chemicals and e'stablish regulatory levels for each constituent on which hazardous waste determinations are to be made. In general, the new rule will expand the regulatory control of RCRA to wastestreams, units and/or facility which have been previously unregulated by the program.

Based on our evaluation of the new rule and the wastestreams which may become hazardous per the regulatory levels set forth in 40 CFR 261.24, a determination that GSX Services (Imperial Valley), Inc. manages certain wastestreams that may soon be subject to the RCRA requirements for hazardous waste generators and/or treatment, storage or disposal (TSD) has been made. As such, GSX Services (Imperial Valley), Inc. respectively requests via the attached document (revised Part A) a "Class 1 modification" to our current RCRA permit to add the twenty-five (25) new waste codes D018-D043, in accordance with 40 CFR 270.42(a)and(g)(1)(ii), to allow continued management of these wastes at the facility.

In addition to those regulations cited above, GSX Services (Imperial Valley), Inc. complies with or intends to comply with, within the specified time-frames the other requirements set forth in 40 CFR 270.42(g) which includes:

wastes will now be TC wastes due to the use of the TCLP. Also, many of the wastestreams sent to the facility as either non-hazardous or California-Regulated-Only wastes (e.g. California waste code: 611- "contaminated soil") will now be reclassified under the TC Final Rule as RCRA characteristic wastes (waste codes: D018-D043).

Therefore in compliance with the new federal regulations regarding the T.C. final rule we are requesting that the current CUP application be updated by adding the new waste codes D018 to D043 to appendix 6. This would allow us to accept those wastes that are listed in appendix A as non-hazardous but would now be classified as hazardous due to a single constituent being recently allocated an EPA number not currently listed in Appendix B. As mentioned before this is not an attempt to expand our scope of wastes received, but a request to allow us to continue to accept those wastes we have historically been accepting.

Please don't hesitate to call me at (619) 344-9400 if you have any questions.

Sincerely,

DANNY I. SHAW
FACILITY MANAGER

BY:

Roger Higson
Facility Environmental Manager

dis:rh:dr

cc: Bill Ross, Regional Environmental Manager

Toxicity Characteristic Constituents and Regulatory Levels

EPA HW Number (1)	Constituent	CAS Number (2)	Regulatory level (mg/L)
D004	Arsenic	7440-36-2	5.000
D005	Barium	7440-39-3	100.000
D018	Benzene	71-43-2	0.500
D006	Cadmium	7440-43-9	1.000
D019	Carbon tetrachloride	56-23-5	0.500
D020	Chlordane	57-74-9	0.030
DO2 1	Chlorobsnzene	108-90-7	100.000
DO22	Chloroform	67-66-3	6.000
D007	Chromium	7440-47-3	5.000
D023	o-Cresol	95-48-7	200.000 (4)
D024	M-Cresol	106-39-4	200.000 (4)
D025	P-Cresol	106-G-5	200.000 (4)
DO26	Cresol		200.000 (1)
D016	2,4-D	94-75-7	10.000
DO27	1,4-Dichlorobenzene	106-46-7	7.500
DO28	1,2-Dichloroethane	107-06-Z	0.500
DO29	1, 1-Dichloroethylene	73-35-a	0.700
D030	2,4-Dinitrotoluene	121-14-2	0.130 (3)
D012	Endrin	72-20-8	0.020
DO3 1	Heptachlor (and its hydroxide)	76-44-8	0.003
DO32	Hexachlorobenzene	118-74-l	0.130 (3)
DO33	Hexachloro-1.3-butadiene	87-68-3	0.500
DO34	Hexachloroethane	67-72- 1	3.000
DO08	Lead	7439-92- 1	5.000
D013	Lindane	58-89-9	0.400
D009	Mercury	7439-97-6	0.200
D014	Methoxychlor	72-43-5	10.000
DO35	Methyl ethyl ketone	78-93-3	200.000
DO36	Niuobenzene	98-85-3	2.000
DO37	Pentachlorophenol	87-86-5	100.000
DO38	Pyridine	1 10-86- 1	5.000 (3)
DO10	Selenium	7782-49-Z	1.000
DO11	Silver	7440-22-4	5.000
DO39	Teuachloroethylene	127-18-d	0.700
D015	Toxaphene	8001-35-2	0.500
D040	Trichloroethylene	79-01-6	0.500
D041	2,4,5-Trichlorophenol	95-95-4	400.000
D042	2,4,6-Trichlorophenol	88-06-2	2.000
D017	2,4,5-TP(Silvex)	93-72- 1	1.000
DO43	Vinyl chloride	75-01-4	0.200

(1) Hazardous waste number.
(2) Chemical abstracts service number.
(3) Quantitation limit is greater than the calculated regulatory level. The quantintion limit therefore becomes the regulatory level.
(4) In o-m, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level for total cresol is 200 mg/L.

Imperial County Planning Department, letter of October 2, 1990

157. **As noted, the letter from GSX** to EPA and DHS **requests** that waste codes D018 through DO43 be added to the list of acceptable wastes at the expanded GSX facility. Although these chemicals are new to the D codes, they are actually included in the list of U, P, or K codes requested to be allowed at the GSX facility in their CUP application (see Appendix B of the DEIR). The cross-reference of new D codes 018 through 043 and corresponding previous waste codes is presented below.

D018—Benzene—U019
D019—Carbon tetrachloride—U211
D020—Chlordane—U036
D021—Chlorobenzene—U037
D022—Chloroform—U044
D023—o-Cresol—U052
D024—M-Cresol—U052
D025—P-Cresol—U052
D026—Cresol—U052
D027—1,4-Dichlorobenzene—U070-U072
D028—1,2-Dichloroethane—K096
D029—1,1 -Dichloroethylene-U078
D030—2,4-Dinitrotoluene—U 105
DO3 1-Heptachlor-PO59
D032—Hexachlorobenzene—U127
D033—Hexachloro-1.3-butadiene—U128
D034—Hexachloroethane—U131
D035—Methyl ethyl ketone-U159
D036—Nitrobenzene—U 169
D037—Pentachlorophenol—K001
D038—Pyridine—U196
D039—Tetrachloroethylene—U210
D040—Trichloroethylene—U228
D041—2,4,5-Trichlorophenol—K001
D042—2,4,6-Trichlorophenol—K001
D043—Vinyl chloride-U043

Of the above new D code wastes, only benzene, carbon tetrachloride, chloroform, methyl ethyl ketone, and trichloroethylene were evaluated in the ATC application or the risk assessment. Vinyl chloride was listed as one of several “substances that are not present in waste received at [the GSX] Facility, and for which emissions will not be estimated” (letter dated April 25, 1990 from GSX to Steve Birdsall at the Imperial County Air Pollution Control District). ERCE has reviewed the list of additional D code wastes which have not been analyzed in the ATC or the risk assessment. Risks from the GSX facility are dependent on the magnitudes of the exposure levels and on the toxicities of the individual compounds. The magnitudes of the exposure levels would not change with the addition of the new D code wastes provided the total volume of wastes estimated in the ATC, which is the basis for emission rates, does not change. From a comparison of chemical properties, the mobilities of the new D code wastes are similar to the compounds that were analyzed in the ATC or risk assessment. Also, cancer potencies and toxicities of these wastes are equivalent to the compounds that were analyzed. Since the total volume of wastes received at the facility would not change with acceptance of the new D code wastes, the overall risks reported in the DEIR would not change either.

"The Largest Irrigated District in the World"

S. HARRY ORFANOS
DIRECTOR OF PUBLIC WORKS
COUNTY ROAD COMMISSIONER
COUNTY SURVEYOR
COUNTY ENGINEER

COUNTY OF IMPERIAL
THE WINTER GARDEN OF AMERICA

TELEPHONE
619-339-4462

October 3, 1990

DEPARTMENT OF PUBLIC WORKS
155 SOUTH 11TH STREET
EL CENTRO, CALIFORNIA 92243-2853

Jurg Heuberger
Planning & Building Director
County of Imperial
Courthouse
El Centro, CA 92243

SUBJECT: GSX Imperial Valley Facility Expansion
Draft Environmental Impact Report

Dear Mr. Heuberger:

The Imperial County Public Works Department has completed a review of the above document.

This Department does not take exception to any of the information provided in the document. However, it is still
158 felt that the future access into the site should have been discussed in this document. GSX prepared this document with projections of 20 years which means that the new access will be in operation during the scope of this study.

Should you have any questions, please don't hesitate to call.

Sincerely yours,

S. HARRY ORFANOS
Director of Public Works

BY:

John J. Armas
Assistant County Engineer

msr

Imperial County Department of Public Works

158. The future access road was not examined in the draft EIR per the direction of the lead agency, the Imperial County Planning Department. It will be subject to environmental review at a later date, as noted on page l-l (Introduction) and 5-l (Cumulative Impacts) of the DEIR.

IMPERIAL COUNTY HEALTH CENTER,
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
COURTHOUSE * 939 W. Main Street
EL Centro, CA 92243

-Phone:
(619) 339-4203 Ext.203

DATE August 22, 1990

MEMORANDUM

TO: Jurg Heuberger, Planning/Building

FROM: H.K. Horaeio Kido, Hazardous Material Specialist Supervisor, EHS

SUBJECT: GSX Imperial Valley Facility Extension Draft Environmental Impact report dated August 1990.

After reviewing sections of the above document pertaining to hazardous waste treatment, handling and disposal, the following comments are applicable :

159 1. The statistical expression "Level of Significance" is ubiquitous throughout the document. This expression needs to be quantified (eg. 0.05 or 0.01).

2. On page 2-11, the following errors are evident:

160 a. The Title 22 CCR section number "666723(a)" should read "66720(a)".

161 b. There is no definition in Title 22 CCR section number "66200" for "Strong Oxidizers".

162 c. "Incompatible" wastes are defined in Title 22 CCR section "66111", not "66108".

163 d. Title 22 CCR section "66699(d)" does not exist.

164 3. In section 2.6.12.3 on wind dispersal control, the term "High Winds" is too vague. Specific wind velocity thresholds need to be set for specific wind dispersal minimization actions.

8/90 mo

Imperial County Division of Environmental Health Services, from Horacio Kido, Hazardous Material Specialist Supervisor

159. The term "level of significance" was quantified where possible throughout the document. Impacts for which applicable standards exist, such as for carcinogens or maximum radon exposure limits, were quantified. However, a number of impacts do not lend themselves to statistical analysis. Issues such as land use and visual impacts are virtually impossible to quantify. In such cases, potential project impacts were analyzed qualitatively, based on factual data. CEQA Guideline 15064 (b) states:

> The determination of whether a project may have a significant effect on the environment calls for careful judgment.. .based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting.

It is not always possible to quantify at what point an adverse impact becomes significant. The determination of whether an impact is significant is based on analysis of the data and the educated judgment of the lead agency and its environmental consultant.

160. Correction noted. Please see Table 2-3 of the Revised Draft FIR.

161. Correction noted. 22 California Administrative Code 66200 does not define Strong Oxidizers. Table 2-3 was taken verbatim from GSX's Amended Conditional Use Permit #632-83. The Final EIR for the new conditional permit for the GSX facility is not the appropriate place to correct or alter an approved Conditional Use Permit, and therefore, this correction is not included in the Revised Draft EIR.

162. Correction noted. 22 California Administrative Code 66111 is the correct citation, but this error was made in the CUP #632-83. Please refer to the response to comment 161 as to why this change was not included in the Revised Draft EIR.

163. Correction noted. It is assumed by the environmental consultant that the correct citation is 22 California Administrative Code 66699 (a) and (b) and 22 California Administrative Code 66723. However, as explained in the response to comment

161 a change to the Revised Draft EIR was not prepared because this error occurred in CUP #632-83, and Table 2-3 was taken verbatim from that document.

164. Please see response to comment 35.

IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • PO BOX 937 • IMPERIAL CALIFORNIA 92251

AGM September 26, 1990

Mr. Jurg Heuberger, Planning Director
Imperial County Planning Department
939 Main Street
El Centro, CA 92243-2856

Subject: Notice of Public Availability of Draft EIR on "Master Plan" Expansion of GSX Services (Imperial Valley) Facility (dba Laidlaw Environmental Services, Inc.)

Dear Mr. Heuberger:

This is in response to your letter of August 15, 1990 requesting comments during the DEIR 45-day public review period which closes October 2, 1990. We have the following comments:

- 165 A contingency plan is referred to in Section 2.5.5 (page 2-42) that has been prepared to outline documented procedures to be followed in the event of an emergency. A copy of this plan is requested. 166 Reference is also made to training city and county emergency service personnel in handling hazardous waste spills. GSX is currently training one or two District people each year. With expansion, the number of District people trained should be increased to five.

- 167 Reference is made in Section 2.5.5.2, fourth paragraph, (page 2-43) to the Westside Main' Canal water as being "brackish." This should be deleted and replaced with "raw Colorado River water." In the last line of the paragraph, "nonpotable" should be deleted and replaced with "similar."

168 Potential for degradation of groundwater is referred to in Section 3.4.2 (page 3-92). Section 3.4.3 (page 3-57) refers to ways of mitigating this potential hazard. The District should be kept apprised of all hydrogeologic studies and groundwater monitoring related to groundwater quality.

Thank you for the opportunity to provide these comments. Please contact Dr. Randall Stocker at (619) 339-9426 for any additional information.

Sincerely,

Charles L. Shreves

CHARLES L. SHREVES
General Manager

RAM:sg
GSX.LET

Imperial Irrigation District

165. **The contingency** plan is on file at the Imperial County Planning Department and all local agencies that may be called upon to provide emergency services. In addition, a copy will be forwarded to the Imperial Irrigation District.

166. **Comment noted.** Any increase in Imperial Irrigation District student representation would be handled by the County.

167. Comment noted. See page 2-44 of the Revised Draft EIR.

168. Comment noted. All future hydrogeological studies and groundwater monitoring reports will be on file with the Imperial County Planning Department and other agencies as appropriate.

IVC BARKER MUSEUM

RECEIVED

SEP 26 1990

IMPERIAL COUNTY
PLANNING DEPARTMENT

26 September 1990
Mr. Jurg Heuberger,
Planning Director
County of Imperial Planning Department
Courth House
939 Main Street
El Centro, CA 92243-2856

Re: GSX Imperial Valley Facility Expansion Project

Dear Mr. Heuberger,

GSX Services (d.b.a. Laidlaw Environmental Services, Inc.) proposes to expand the capabilities of its existing Class I landfill at its present site six miles west of Westmorland, Imperial County. The County of Imperial Planning Department is the Lead Agency in ensuring implementation of the Inter-agency Environmental Compliance Program as required in California AB 3180. Laidlaw Environmental Services, Inc. requested IVC Barker Museum to physically examine the facility
169 to address the condition of Cultural Resources, one of the nine concerns identified for project impacts, mitigation measures, and monitoring proqrams as outlined in the report of Environmental and Energy Services Company, September 1990, Section 3.9, p. 3-21. I reviewed the reports pertaining to this project (op. cit.), and visited the facility on 18 September 1990 with special attention to the two fenced archaeological sites d-Imp-4258 and 4-Imp-4263.

WESTEC Services, Inc. (now Environmental and Energy Services Company, San Dieqo) surveyed, mapped, identified, removed, and cataloqued all artifacts within the Laidlaw project area (T13S R12E Sec. 16) in 1979-80 (WESTEC 1980). Laidlaw fenced the two sites identified above as potential National Register of Historic Places (36 CFR 106/800) quality. As recommended in the ERCE Sep '90 report (loc. cit.), Laidlaw removed the on-site monitoring device within the fenced area of 4-Imp-4263, and secured the gate with a padlock. Additional protection to the fenced sites include at-site monitoring twice weekly (Personal communication, Laidlaw Environmental Coordinator, 20 Sep '90). The current proposal to expand the utility of the landfill does not include any impacts to the fenced sites nor, indeed, to the entire area south of Main Wash shown in Fig. 2-3, p. 2-13 (op. cit.).

All artifacts collected, and all field-laboratory documents from WESTEC investigations of 1979-80 will be deposited at Imperial Valley College Barker Museum on 1 October 1990 (Personal Communication with ERCE Staff, 20 and 26 Sep '90).

In sum, I believe that Laidlaw Environmental Services, Inc. has complied with all requirements identified for Cultural Resources as outlined in the Enviornmental and Energy Services Company report of September 1990.

Best regards,

Jay von Werlhof,
Director/Archaeologist IVC Museum

cc: R. Higson

IVC Barker Museum

169. Comment acknowledged. (Communication with the letter's author, Jay von Werlhof, indicates that the letter contained a typographical error. Site "4-Imp-4263" should read "4-Imp-4260". This correction does not affect the letter's conclusion.)

SUTHERLAND, GERBER & LARSEN
4 CORPORATION
ATTORNEYS AT LAW
SUITE 7, THE IMPERIAL BUILDING
300 SOUTH IMPERIAL AVENUE
EL CENTRO, CALIFORNIA 92243

LOWELL F. SUTHERLAND
NEIL GERBER
CHRISTOPHER LARSEN
—
RANDY J RUTTEN
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October 2, 1990

HAND DELIVERED

RECEIVED
OCT 02 1990
IMPERIAL COUNTY
PLANNING DEPARTMENT

Mr. Jurg Heuberger
Planning Director
Imperial County Planning Department
939 Main Street
El Centro, California 92243-2856

Re: **Comments on Draft E.I.R. for Proposed Master Plan Expansion of G.S.X. Services**

Dear Mr. Heuberger:

I have reviewed the draft Environmental Impact Report and wish to ask a couple of questions with reference to it.

170 1. Will there be any financial costs in long term preservation and/or monitoring of the proposed site following the 20 year expansion of the facility and, if so, **what** entity will be responsible for these costs?

171 2. What will be the expected long-term health risks, if any, from airborne contaminants considering the percentage of westerly wind flow over the facility?

172 3. **Considering** the potential for earthquake activity in the proposed site area, what tests have been done to test the strength of the linings, clay and synthetic, of the waste management units?

Thank you for seeing that these questions are addressed.

Very truly yours,

SUTHERLAND, GERBER & LARSEN
A Professional Corporation

Randy J. Rutten

RANDY J. RUTTEN

RJR:skb

Sutherland, Gerber & Larsen

170. **GSX** Services **(dba Laidlaw** Environmental Services, Inc.) will be responsible for the costs of the long-term preservation and monitoring of the facility.

Long term monitoring activities planned at the facility are discussed in the Closure Plan prepared by GSX, which is summarized in Section 2.7 and Appendix D of the Draft EIR.

171. The draft EIR examined the expected long-term health risks from airborne chemicals. The risks were determined to be insignificant for both the existing facility and the proposed expansion. Please refer to Section 3.9 of the draft EIR.

172. Engineers for GSX have evaluated the strength and stability of the liner systems for ability to withstand both static and seismic forces during all phases of construction, operation, and closure. Static forces of concern include stress due to vertical loads, elongation due to settlement, and stresses during installation. Seismic forces evaluated include the additional stresses that are placed on the liner system due to ground acceleration and velocity induced during a seismic event.

Static Stresses. To test strength and stability in terms of static stresses, the shear strengths of the foundation clays and the compacted clay liner were estimated from unconsolidated, undrained triaxial compression tests (Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression, ASTM D 2850). Engineering analyses were conducted on the stiff, dense underlying soils to determine the maximum differential settlement likely from the load imposed by the solid waste; the result was a maximum of 6 inches. The high density polyethylene (HDPE) liners were evaluated for stress due to vertical load of waste by computing the equivalent compressive stress of the total projected depth of waste in each landfill, assuming a unit weight of 110 pounds per cubic foot. The resulting compressive stresses for LC-1, LC-2, LC-3, LC-4, and LC-5 were 38 psi, 54 psi, 50 psi, 64 psi, and 52 psi, respectively, as reported in the design reports for each landfill (Appendices D-4, D-l 1, D- 12, D- 13, and D-14 of the RCRA Part B Permit Application). Each of the resulting compressive stress estimates is well below the typical compressive strength of 2,300 psi for HDPE liners.

The elongation of the HDPE liner expected from maximum differential settlement of the foundation soils would be less than 6 inches. This value is far less than the elongation potential for the liner material A l-foot elongation would have to occur within a horizontal length of less than 8 feet to reach the yield point of HDPE, which is 13 percent elongation at yield. (The breakpoint for the HDPE liner is specified as 300 percent elongation in the construction documents.)

Stresses during synthetic liner installation would be monitored by inspections and tests required in the specifications, which include the following:

- visual inspection of materials, lift thickness, and compaction of clay liner, verification that field moisture and density tests have been performed.

- manufacturer's certification that synthetic liner material meets specifications.

- visual inspection of synthetic liner and prepared subgrade.

- inspection of all seams for visible discontinuities in the seam weld; observation of all seam testing.

- laboratory testing of seam samples, which shall include verification of thickness, determination of bonded seam strength in shear, and bonded seam strength in peel.

Seismic Stresses. The main source of stress in a liner system due to seismic forces would result from deformation of the soils on the landfill side slopes. This would create stress in the clay liners and tensile stress in the synthetic liners because they are anchored in the top of the slope. Stability of the landfills during earthquake loading was evaluated by engineers for GSX on the basis of an estimated deformation induced by the design earthquake. The method proposed by Makdisi and Seed (1978) and recommended by the International Commission of Large Dams (ICOLD) (1985) was used to perform seismic-stability analysis. It was concluded in the design reports for each of the landfills that the natural elasticity of the clay liner and the high yield strength and elongation characteristics of the HDPE liner would allow the system to maintain strength and integrity under the predicted deformations.

Berg Realty

380 NORTH EIGHTH STREET
EL CENTRO, CALIFORNIA 92243
TELEPHONE 352-0502

September 17, 1990

RECEIVED

IMPERIAL COUNTY
PLANNING DEPARTMENT

Mr. Jurg Heuberger
Planning Director
Planning Dept. Imperial County
939 Main Street
El Centro, Calif. 92243-2856

Dear Mr. Hueberger:

Please consider this my formal written notice to oppose
173 the "Master Plan" expansion of GSX Services (Imperial Valley) facility (DBX Laidlaw Environmental Services, Inc.

Following a review of the Draft Environmental Impact Report and a private and public meeting with GSX representative, Danny Shaw, expansion of this facility, in my opinion, would
174 pose a serious threat to farmland in the immediate area. As a landowner in the direct area to the east of GSX, I don't feel the (DEIR/SCH#90010086) gives me, other landowners in the area or the County of Imperial the protection we all deserve.

175 I am very concerned about the seismic portion of the report. Updated information indicates clearly that the area at the waste site is much more active than originally thought.
176 The air quality portion of the report also leaves a lot of questions that need additional answers.

Sincerely,

Ed Snively

Ed Snively

173. Comment noted.

174. The EIR is an information document intended to inform public decision-makers, other responsible or interested agencies, and the general public of the potential environmental effects of a proposed project. The environmental review process for the GSX facility expansion enables the County to evaluate the proposed project in terms of its environmental consequences, to examine and implement methods of eliminating or reducing any potentially adverse impacts, and to consider alternatives to the project. If the project is approved, the Board of Supervisors should include the mitigation measures proposed in the EIR as permit conditions.

The EIR identified potential significant impacts related to land uses, geology, ground water, surface water, air quality, traffic, health and safety, public services and utilities, and cultural resources. With proposed mitigation measures, only the air quality impacts remain significant. The emissions of NO_x and reactive hydrocarbons will add to existing violations of state and federal ozone standards and emissions of particulate matter will add to existing violations of the state 24-hour PM_{10} standard. Although the air quality impacts would remain significant, the risk assessment (summarized in Section 3.9 of the DEIR) found no significant long term health risks due to inhalation of dust, vapors, chemicals or asbestos from the proposed project.

The DEIR is not the only document regarding the GSX facility which would set forth measures to protect the health and safety of Imperial County residents. As discussed in Section 1 of the DEIR, the project must obtain the following permits:

- Conditional Use Permit from Imperial County Planning Department
- General Plan Amendment from Imperial County Planning Department
- Solid Waste Facilities Permit from Imperial County Division of Environmental Health Services
- Authority to Construct from Imperial County Air Pollution Control District

- Waste Discharge Permit from the Regional Water Quality Control Board

- Hazardous Waste Facility Permit from the State Department of Health Services

- RCRA Part A and Part B Permit from U.S. Environmental Protection Agency

- Grading and building permits from Imperial County for each new component of the planned expansion.

Besides CEQA review and the various permit processes, protection to citizens and the environment is enabled by the local assessment committee, which, in accordance with AB 2948 (Tanner Act) has been formed to:

(A) Negotiate with the proponent for the proposed hazardous waste facility project on the detailed terms of, provisions of, and conditions for, project approval which would protect the public health, safety, and welfare, and the environment of the city or county and would promote the fiscal welfare of the city or county through special benefits and compensation.

(B) Represent generally, in negotiation with the project proponent, the interests of the residents of the city or county and the interests of adjacent communities.

(C) Receive and expend the technical assistance grants made available pursuant to subdivision (g).

(D) Adopt rules and procedures which are necessary to perform its duties.

(E) Advise the legislative body of the city or county of the terms, provisions, and conditions for project approval which have been agreed upon by the committee and the proponent, and of any additional information which the committee deems appropriate. The legislative body of the city or county may use this advice for its independent consideration of the project.

Participation of all concerned citizens in the review process for this facility has been encouraged by Imperial County Planning Department.

175. Comment noted. Page 3-50 of the DEIR states that although current project design meets California Code of Regulation's Title 23 requirements, onsite faulting is potentially more extensive than is currently documented. To mitigate this potential

impact, the DEIR requires that additional investigation of onsite faulting be conducted and that the pertinent results be incorporated into final project design. See page 3-55 of the DEIR.

176. The letter is not specific as to what air quality questions require answers. The air quality analysis contained in the DEIR is based on information from the Authority to Construct (ATC) permit application. Additional information may be found in this ATC permit application. Any unanswered questions may be addressed to the Imperial County Air Pollution Control District (ICAPCD). (The project applicant must obtain discretionary permits from the ICAPCD to construct and operate the proposed expansion.)

Marlin E. Medearis

Phone (714) 344-0814 · 1337 West Baughman Rood · Brawley, CA 92227

September 25, 1990

Mr. Jurg Heuberger
Planning Director
Planning Dept. Imperial County
939 Main Street
El Centro, Calif. 92243-2856

Dear Mr. Hueberger:

Please consider this letter my formal written notice of opposition
177 to the "Master Plan" expansion of GSX Services, Imperial Valley facility
(DBA Laidlaw Environmental Services, Inc.

After a review of the Draft Environmental Impact Report and a private
and public meeting with GSX representative, Danny Shaw, expansion of
this facility, in my opinion, would pose a serious threat to those of
178 us who live and have farmland in the immediate area. I am an adjacent
landowner to the North of GSX and in the direct area to the east. I
do not feel the (DEIR/SCH#90010086) gives me, other landowners and
residents in the area or the County of Imperial the protection we all
deserve.

The seismic portion of the report has me very concerned. Updated
179 information clearly indicates the area at the waste site is much more
active than originally thought. My principal residence is directly
180 East of the prevailing West winds from GSX and the air quality portion
of the report also leaves a lot of unanswered questions that need
answers.

I have also reviewed the Seismic and Hydrogeologic Report by
MOORE & TABER, Geotechnical Engineers and Geologists (Job 188-073).
181 There are numerous items in their report that need to be taken
seriously and further explored. In my opinion much of the
information in the MOORE & TABER report has not been mitigated.
Until that time, any expansion of GSX facilities should not be
approved.

Sincerely,

Marlin E. Medearis

Marlin E. Medearis

Marlin E. Medearis

177. Comment noted.

178. Please see the response to comment 174.

179. Please see the response to comment 175.

180. Please see the response to comment 176.

181. The mitigation sections of the DEIR provide for detailed geologic, structural, and hydrogeologic studies. Any changes resultant from these detailed studies shall be included in the final project design. The modified final project design will then be submitted to all appropriate regulatory agencies for approval.

September 25, 1990

Mr. Jurg Heuberger
Planning Director
Planning Dept. Imperial County
939 Main Street
El Centro, CA 92243-2856

Dear Mr. Heuberger:

O182 Please consider this letter my formal written notice of opposition to the Master Plan expansion of GSX Services, Imperial Valley facility (dba Laidlaw Environmental Services, Inc.

O183 As a young farmer on adjacent farmland to the North of GSX and in the direct area to the East, I do not feel the (DEIR/SCH#90010086) gives me, other landowners and residents in the area or the County of Imperial the protection we all deserve. This facility, in my opinion, would pose a serious threat to those of us who live and farm in the immediate area.

O184 I live and work directly East of the prevailing West winds from GSX and the air quality portion of the report leaves a lot of questions that need additional answers.

O185 The seismic portion of the report also has me very concerned. Updated information clearly indicates the area at the waste site is much more active than originally thought.

Sincerely,

Von Medearis

Von Medearis

182. Comment noted.

183. Please see the response to comment 174.

184. Please see the response to comment 176.

185. Please see the response to comment 175.

P. O. Box 543
Westmorland, CA 92281

September 25, 1990

Mr. Jurg Heuberger
Planning Director
Planning Dept. Imperial County
939 Main Street
El Centro, CA 92243-2856

Dear Mr. Heuberger:

186 Please consider this my formal written notice of opposition to the Master Plan expansion of GSX Services, imperial Valley facility (DBA Laidlaw Environmental Services, Inc.)

187 I live in the City of Westmorland along with my husband and two children. We are directly East of the GSX facility and feel the expansion of this facility would pose a serious threat to those of us who live in the immediate area. I do not feel the expansion will give me and other residents in the area or the County of Imperial the protection we all deserve.

Sincerely,

Esther Sepulveda

Esther Sepulveda

Esther Sepulveda

186. Comment noted.

187. Please see the response to comment 174.

GSX

GSX Services (Imperial Valley), Inc.
P.O. Box 158
5295 South Garvey Road
Westmorland, CA 9228 1
(619) 344-9400
FAX (619) 344-9405

October 1, 1990

Mr. Jurg Heuberger
Planning Director
Imperial County
939 Main Street
El Centro, CA 92243

Re: Comments on the Draft Environmental Impact Report on the "Master Plan" Expansion of GSX Services (Imperial Valley) Facility, State Clearing House No. 90010086

Dear Mr. Heuberger:

Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the "Master Plan" Expansion of GSX Services (Imperial Valley) Facility (State Clearing House No. 90010086). GSX Services (Imperial Valley), Inc. has reviewed the DEIR, and this letter summarizes our comments regarding geologic, ground water, design, air quality and socioeconomic issues at the facility. Six issues were identified by GSX Services (Imperial Valley), Inc. that warrant specific mention in this cover letter. These six issues and other comments are discussed fully in the Attachment. This letter and the Attachment contain our comments on the DEIR.

GSX Services (Imperial Valley), Inc.'s summary of specific comments on the DEIR follows:

183
- Hydrogeologic characterization at existing facilities is considered to be adequate for ground water monitoring purposes, and existing monitoring networks have been properly designed and installed in accordance with facility permits. Because each WMU is monitored individually, site-wide variations are of little consequence in designing the localized network for a specific WMU. However, because of complexities in the southeastern part of the site near WMUs 3,5,8 and 9, we agree that the proposed monitoring network for WMU LC-5 should be re-evaluated prior to installation.

- 189 We do not agree with the recommendation that low permeability saturated sediments be considered for monitoring, due to the limited potential for migration of chemicals in saturated clay units and the difficulty of monitoring such units effectively.

- 190 The DEIR recommends that studies in the western portion of the site should be conducted in a phased approach in conjunction with facility expansion. These recommended studies would further evaluate hydrogeologic conditions as well as better define the termini of previously identified faults. Although we agree that future hydrogeologic characterization is warranted we believe that additional field investigation of the extent of recognized faults is not necessary based on our review of existing trench logs, which indicate that the termini of these faults have been identified.

- 191 We recommend that a peak seismic ground acceleration value of 0.48 g be used for project design rather than the 0.6 g cited in the DEIR.' Because the 0.6 g value was developed for exposed bedrock conditions, which do not exist at the site, it is therefore unnecessarily conservative for site conditions.

- 192 Requiring smaller liquid-containing tanks is an unnecessary mitgation measure. The institution of an emergency cleanup protocol as required by existing permits is appropriate mitigation for the unlikely scenario of the simultaneous rupture of liquid-containing tanks and secondary containment.

- 193 Socioeconomic effects are not required to be mitigated or avoided under CEQA, as they are not considered significant effects on the environment under CEQA.

The first two comments above and others further described in thk Attachment relate to the site hydrogeology and ground water monitoring. The site hydrogeology has been studied in considerable detail, and an understanding of the existing ground water flow characteristics is key to many of our comments on the DEIR. The hydrogeology of the facility is thoroughly described in the DEIR. However, a brief synopsis of the information provided in the DEIR is presented below to provide context to evaluate these comments without having to refer to the discussion in the main body of the DEIR.

SYNOPSIS OF SITE HYDROGEOLOGY

Subsurface conditions at the GSX Imperial Valley facility have been investigated extensively since 1979. Appioximately 225 soil borings, 83 piezometers, 72 monitoring wells, and 140 exploratory trenches have been installed during this period. In addition, the excavations for the facility's waste management units (WMUs) are geologically mapped prior to construction of these units. The following summary of subsurface conditions is based on this extensive previous site characterization work.

The site is underlain by a series of lacustrine (or lake) deposits that have been characterized to a depth of several hundred feet below ground surface. These deposits are predominantly fine-grained and consist of interbedded clays, silts and silty fine sands. In general, the beds dip gently to the east, with average dips on the order of 5 to 10 degrees.

The natural dip of the sediments is affected locally by a series of relatively small north-south trending faults. The faults are considered to be small secondary faults that developed in response to seismic activity on major regional faults in the Imperial Valley area. The largest of these mapped faults is Fault C, which is situated between the developed northeastern portion of the facility and the area designated for expansion to the northwest. At Fault C, information from trenches and nearby well borings indicates that the greatest vertical displacement occurs in the central portion of the fault and that it decreases rapidly to a relatively small offset of a few feet or inches near their ends. Similar displacement patterns were observed in the trenches that were excavated to investigate the extent of identified onsite faults. As a result of this vertical crescent configuration, the faults cause. only localized offset and warping of the subsurface stratigraphic units and do not significantly alter the overall pattern of easterly dipping units.

Ground water is encountered at an approximate depth of 60 feet below ground. The overall direction of ground water flow is toward the northeast, although there is localized variation as described in the DEIR. The ground water beneath the site occurs in both unconfined and confined aquifers. In the eastern portion of the site, ground water is first encountered in the $Q1_5$ stratigraphic unit. This is an unconfined aquifer. Because of the natural eastward dip of the sediments, the $Q1_5$ unit rises above the water table in the western part of the site. In general, the $Q1_5$ unit is not saturated west of Fault C.

The next aquifer below $Q1_5$ occurs in the $Q1_6$ stratigraphic unit. The $Q1_6$ aquifer is present below the entire site. It is the uppermost aquifer in those areas where the $Q1_5$ unit is not saturated (i.e., the western part of the site). The $Q1_6$ aquifer is generally under confined conditions. Where the two aquifers both occur, the piezometric surface of the $Q1_6$ aquifer is typically between 8 and 12 feet higher than the water level in the overlying $Q1_5$ aquifer. This indicates that ground water flow in the two aquifers is hydraulically separate, and that the vertical direction of flow would be upward, from the deeper aquifer to the shallower zone.

Investigation of several deeper confined aquifers ($Q1_8$, $Q1_{10}$) has been less extensive because these units are not monitored separately under the facility's approved ground water monitoring program. Instead, the deeper confined aquifers are grouped with $Q1_6$ into a single lower aquifer.

Ground **Water Flow Conditions in the Vicinity of Faults**

The most pronounced fault at the Facility (Fault C) has caused vertical displacement of aquifer unit $Q1_5$ relative to Ql,, which allows limited interconnection of ground water flow across these aquifers, which would not normally exist in the absence of faulting. Aquifer unit $Q1_5$, which is saturated only to the east of Fault C, generally exists under water table, or unconfined conditions. Aquifer unit $Q1_6$, on the other hand, which is generally saturated throughout most of the site, exists under both water table or artesian (confined) conditions, depending on location. In the central portion of Fault C, ground water from unit $Q1_6$ is believed to flow into both unit $Q1_5$ and unit $Q1_6$ to the east of the fault, depending on the degree of vertical offset, which is not uniform across the length of the fault zone.

The juxtaposition of units along the fault zone and the resulting localized interconnection of the ground water flow system across the fault, however, is not believed to fundamentally change the ground water flow conditions in the vicinity of the waste management units, with unit $Q1_5$ generally remaining as a water table aquifer, and the underlying $Q1_6$ remaining as a separate artesian aquifer. This would indicate that to the east of Fault C, unit $Q1_5$ generally constitutes the uppermost aquifer for ground water monitoring purposes.

The ground water monitoring systems at the Facility are designed for individual waste management units. As a result, any localized complexities in ground water flow conditions introduced by faults are not relevant in the localized scale of the WMUs (which cannot be located over fault zones). The presence of faults on the site. therefore, is not a significant concern in designing individual ground water monitoring systems for the WMUs, although it is recognized that a careful examination of ground water flow conditions for each unit must be made in selecting the most appropriate aquifer to be monitored.

Ground Water Flow Conditions at WMUs 3,5,8 and 9 (Future Location of LC-5)

Ground water flow conditions in the vicinity of the existing WMU nos. 3,5,8 and 9 are more complex than elsewhere at the Facility in that the shallower zone (unit $Q1_5$) is only partially saturated, and is underlain by an artesian condition in deeper units $Q1_6$, $Q1_8$ and $Q1_{10}$. This situation occurs because the sediments in this area have been gently folded. $Q1_5$ consists of silty fine sand. In this area, $Q1_6$ consists predominantly of clay with thin sand layers at the base of the unit. The current ground water monitoring program for this area is based primarily on monitoring of the sandy layers at the base of $Q1_6$, because this is the first fully saturated unit encountered throughout this area. The overlying $Q1_5$ unit, which is only partially saturated, generally does not contain sufficient thickness of water-bearing sand that it could be conventionally monitored. However, the current . monitoring program includes two wells completed in $Q1_5$ where it is sufficiently saturated to be monitored.

The numerous soil borings and monitoring wells constructed in this area and the multiple years of ground water data clearly define the nature of the separate
195 water table and artesian aquifers in the area. However, the complexity of the ground water flow conditions, and in particular the partially saturated nature of unit $Q1_5$, will necessitate a re-examination of the design of the ground water monitoring system for the new landfill LC-5 that is proposed for this area.

Monitoring of Low Permeability Saturated Zones

The existing ground water monitoring system is based on wells completed within the first water-producing unit encountered beneath the WMUs. These are generally units containing silts and sands. Although some monitoring wells have been constructed with longer wells screens, extending up into overlying confining low permeability zones, the ground water monitoring program is not designed to monitor low permeability saturated zones which may overlie these first water-bearing units.

There are practical limitations to our ability to monitor ground water in clay units by conventional monitoring wells or other available devices. This is particularly of concern for classes of chemicals such as VOCs, which would likely volatilize from ground water during the collection of samples from such units. If chemicals were released from a regulated unit and migrated vertically to a low permeability zone

that overlies the first aquifer unit, it is expected that these chemicals would then move primarily by diffusion within the clays and eventually reach a deeper water-bearing aquifer unit. Whether these chemicals would be detected in the aquifer would depend on the rate of diffusion of any chemicals through the overlying clay unit and the volume of natural ground water flow within the underlying aquifer. As discussed in the Attachment, diffusion is the primary mechanism for movement in saturated clay because the ground water flow rates in clay are so slow. Because diffusion is unrelated to ground flow direction, the potential for these chemicals to move offsite via horizontal migration through saturated clays is less than through
196 the higher permeability sands. The lack of a monitoring system based in the saturated clay units, therefore, is not believed to be a significant concern for the integrity of the ground water monitoring system at the Facility.

Thank you for the opportunity to comment on this DEIR. If you have any questions about the issues described in this letter or the Attachment, please do not hesitate to call me.

Sincerely,

Danny I. Shaw

Danny I. Shaw
Facility Manager

Attachment

ATTACHMENT

COMMENTS BY GSX SERVICES, (IMPERIAL VALLEY), Inc.
About the GSX Imperial Valley Facility Expansion
Draft Environmental Impact Report, August 1990

Comment Number

1. **Executive Summary**

Geology

Page ES-6; Third column, last paragraph:

"Conduct additional investigations of onsite faulting as part of final design. Incorporate a peak seismic ground acceleration value of 0.60 g into project design. Excavate and recompact or replace materials potentially subject to liquifaction or dynamic settlement. Use stabilizing materials and buttressing where needed to stabilize slopes. Incorporate methods to reduce seiches in the evaporation tanks into project design as recommended in the DEIR. Provide necessary geologic studies to more thoroughly assess site stratigraphy, especially in the western portion of the site. Studies in areas of existing facilities should be conducted as soon as possible and used to evaluate adequacy of present monitoring system. Results of studies for areas of proposed facilities should be issued to design monitoring systems and should be included in the final project design documentation. Install and monitor the liner systems planned for landfill facilities. Conduct vadose zone monitoring as proposed in project design reports. These measures will reduce potential impacts to below a level of significance."

Comment: Subsequent comments will address each aspect of this statement in detail. However, in summary, available information suggests that:

- Faults on the site have been adequately characterized
197 (Comments 9, 13, 15 and 23);

198 - A peak seismic ground acceleration of 0.48 g should be used for project design (Comments 14 and 16);

- Hydrogeologic characterization at existing facilities is
199 considered to be adequate for ground water monitoring purposes (Comments 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 33, 36 and 37); and

- Additional hydrogeological characterization of the western
200 portion of the site should occur in a phased approach during landfill design and construction. (Comments 17 and 32);

2. Ground Water

Page ES-7; Third column, second paragraph:

"Conduct additional geohydrologic studies as recommended in the DEIR to more completely characterize the hydrogeologic system underlying the project site. Install and monitor the liner systems planned for landfills, install and maintain the secondary containment facilities planned, add to existing and planned. ground water monitoring system as stated the DEIR. These measures will reduce potential impacts to below a level of significance."

201 Comment: See Comment 1.

3. Surface Water

Page ES-S; Third column, first sentence:

"GSX shall install bank protection to prevent erosion at critical reaches of the diversion channels..."

202 Comment: See Comment 40.

4. Health and Safety

Page ES-11; first paragraph, third column:

"Reduce size of tanks to minimize quantities of waste that could be released, and/or plan and implement a clean up program to be conducted immediately if a spill occurs. These measures will mitigate potential for impacts to below a level of significance."

203 Comment: The presence of low permeability clays and silts underlying the site would conservatively delay the migration of any

spilled chemical to the ground water for several years. This would allow sufficient time for the material to be removed from the area, and any necessary excavation to be carried out. Thus, a cleanup program that would be conducted immediately is sufficient mitigation for this scenario. A reduction in the tank size would decrease the area requiring cleanup, but would not reduce the seepage rate, and the corresponding time until ground water is impacted. In addition, the concrete secondary containment would have a flexible polymeric liner, that would provide some redundancy to the secondary containment. The institution of an emergency cleanup protocol is required in various permits which contain spill and prevention contingency plans.

5. Public Services and **Utilities**

Page ES-13; Second paragraph, third column:

"The county should hire additional staff persons as necessary. The APCD and Office of Emergency Services presently have a method of recovering costs associated with permit monitoring and enforcement. The costs to the other agencies shall be funded by GSX. This will reduce potential impacts to below a level of significance."

Page ES-14; First paragraph, third column:

"Mitigation can be achieved through participation of the school districts in the various funding mechanisms available for the construction of schools. These include: developer fees, lease purchase arrangements, Mello-Roos Community Facilities Act, and the Leroy F. Green State School Building Lease - Purchase Law. These measures will reduce potential impacts to below a level of significance."

204 Comment: The DEIR concludes that the project would cause the following significant socioeconomic effects: (1) staffing shortages in County public agencies involved in permit monitoring and enforcement; (2) overcrowding of schools in Brawley and El Centro; and (3) cumulative impacts on the schools of Brawley. The scope of CEQA is limited to identifying and mitigating changes in "physical conditions" caused by a project. CEQA §§ 21151, 21060.5. Although an EIR may include socioeconomic analysis for information purposes, "economic or social effects of a project shall not be treated as a significant effects on the environment." CEQA Guidelines § 15131 (emphasis added). Since socioeconomic effects are not significant effects on the environment under CEQA, they are not required to be mitigated or avoided under CEQA. San Franciscans for Reasonable Growth v. City and County of San Francisco, 209 Cal.App.3d 1502, 1516 (1989). We request that this be corrected in the Response to Comments.

6. 2.6.9 Nonhazardous Waste Treatment Area

Page 2-62; last paragraph:

"Mixing of incompatible liquids will be feasible because the liquids accepted at the evaporation tanks will have been neutralized and stabilized by the removal of volatile components and oily products."

205 Comment: No mixing of incompatible liquids is contemplated in the evaporation tanks. Once liquids have reached the evaporation tanks, they would be neutral liquids with less than 10 ppm volatile organic materials, and would not be incompatible.

7. 2.6.10.1 Ground Water Monitoring

Page 2-65; First full paragraph, fourth sentence:

"The downgradient monitoring well spacing perpendicular to the hydraulic gradient will be less than 200 feet."

206 Recommended change: The downgradient monitorine well spacing perpendicular to the hvdrauiic gradient will be approximatelv 150 feet.

8. 33.13 Site Geology

Page 3-30; Third paragraph, first sentence:

"$Q1_7$ is a transitional unit between Ql, and $Q1_8$."

C207 Recommended change: <u>$Q1_7$ is a transitional unit between $Q1_6$ and $Q1_8$.</u>

9. 33.15 Structure

Page 3-33; Last sentence:

"Additionally, the onsite termini of several faults have not been conclusively established."

C208 <u>Comment</u>: A series of investigations were performed to identify the location of all active faults at the facility prior to the siting of the Class I units. These investigations included a review of aerial photography at the facility as well as the excavation of exploratory trenches through the near-surface soils in the expected location of faults.

The faults at the Facility are thought to be sympathetic faults that formed in response to seismic activity on major regional faults in the Salton Trough area. The displacements of the faults is primarily normal or vertical and has occurred as a result of crustal extension in the Salton Trough.

More than 50 exploratory trenches were excavated and logged as part of fault investigations at the Facility. Information gathered during these investigations indicated that the greatest displacements occur along the central portion of the faults and that the displacement decreases rapidly to relatively small offsets of a few feet or inches near their ends. This systematic decrease in offset allows for a conservative delineation of the termini of the faults on site. Therefore the statement quoted above should be changed in accordance with this comment.

10. 3.3.1.7 Seismic Hazards

Page 3-42; Third paragraph, last sentence:

"Additionally the termini of several onsite structures (including faults A,D,E,F,H,I and J) have not been conclusively established, potentially increasing the extent of onsite ground rupture hazards."

C209 See Comment 9.

11. 3.3.1.8 Regulatory Requirements

Page 3-45; Sixth paragraph:

"Units must be located outside of floodplains subject to floods with a 100-year return period."

210 Comment: Table 4.1 of Title 23 of the CCR states a more stringent siting requirement for Class I landfills. The EIR should be amended to reflect this requirement.

Recommended change: Units must be located outside of floodplains subject to floods associated with the Probable Maximum Precipitation (PMP).

These requirements have been incorporated into Facility design.

12. **332.4 Reactivity**

Page 3-49; 2nd full paragraph, last sentence:

"If reactive soils are encountered, it is anticipated that any potential impacts could be mitigated below levels of significance by utilizing standard construction techniques (such as the use of corrosion resistant mater&is).

211 Recommended change: If reactive soils are encountered. any potential impacts will be mitigated below levels of significance by utilizing standard construction techniques (such as the use of corrosion resistant materials).

13. 332.6 Seismic Hazards **Impacts**

Page 3-50; Second paragraph, last 2 sentences:

"As noted under Existing Conditions, however, the onsite termini of several fault traces (specifically faults A, D, E, F, H, I, and J) were not conclusively established, with onsite faulting potentially more extensive than is currently documented. Under such a scenario the site may be within an area of rapid geologic change and/or one or more proposed storage/disposal facilities could be within 200 feet of an active fault trace.

O 212 Comment: Faults located onsite have been adequately delineated as noted in Comment 9. Therefore additional pre-design fault investigations are not necessary. The same objectives can be achieved during standard landfill construction and certification activities. During excavation of the new landfills, geologic mapping of all cutslopes will certified by a Professional Civil Engineer or Certified Engineering Geologist in order to ensure that no faults impact the sites of the new landfills. This mitigation measure should be amended.

14. Page 3-53; Third full paragraph:

"Project design will incorporate a peak ground acceleration value of 0.60 g. This figure is based on projections of horizontal acceleration in bedrock underlying the site, rather than the attenuated surface value (i.e. 0.48 g) discussed above (IT 1987). Use of this higher value in design specifications (along with associated repeatable high ground acceleration values) would reduce potential impacts related to ground acceleration below levels of significance. Specific design applications include the proposed used of flexible liners, drainage, and leachate collection and removal systems, as well as appropriate composition and construction of fill embankments and soil covers."

<u>Comment:</u> As stated elsewhere in the DEIR (3.3.1.2 Regional
21B Geologic Setting, page 3-23), sedimentary deposits within the Salton Trough are on the order of 20,000 feet thick. Landfill design at the facility has therefore been based on the maximum peak acceleration expected for these sediments based on the maximum credible earthquake on the Superstition Hills Fault which is located approximately four miles from the Facility. A peak acceleration of 0.48 g takes into account the necessary factors of safety required for safe landfill design. This attenuated peak acceleration of 0.48 g is based on guidelines presented by Seed and Idriss (1982)[1] as well as attenuation relationshps for deep soils by Idriss (1985)[2]. Therefore design criteria based on a peak acceleration of 0.60 g in bedrock are not necessary due to the substantial depth to bedrock. The EIR should state that a landfill design incorporating an acceleration of 0.48 g is appropriate.

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[1] Seed. H.B., and Idriss, I.M., 1982. Ground Motions and Soil Liquefaction during Earthquakes: Monograph series. Earthquake Engineering Research Institute. Berkeley, California.

[2] Idriss, I.M., 1985. Evaluating Seismic Risk in Engineering Practice: Theme Lecture No. 6, Proceedings, XI International Conference on Soil Mechanics and Foundation Engineering, San Francisco. pp. 265-320

15. 333 Mitigation **Measures**

333.1 **Seismic**

Page 3-55; First paragraph:

"Additional investigation of onsite faulting will be conducted by a qualified geologic consultant. This analysis will include exploration activities (as outlined by the geologic consultant) to delineate the extent and age of onsite fault traces. All recommendations and conclusions generated from this study will be incorporated into final project design."

214 **See** Comment **13.**

16. Page 3-55; Second paragraph:

"Project design will incorporate a peak seismic ground acceleration value of 0.60 g (as well as associated repeatable high ground acceleration)."

215 Recommended change: Project design will incorporate a peak seismic acceleration value of 0.48 g. (See Comment 14)

17. 333.2 **Stratigraphy**

Page 3-55; Last paragraph:

"Additional geologic studies shall be conducted by a qualified geologist to more thoroughly assess site stratigraphic conditions, particularly in the western portion of the facility (west of Faults C and F). The study shall be sufficiently thorough to allow accurate mapping of the various subsurface lithologic units which have been defined in previous studies. The investigations shall include geotechnical testing of lithologic materials as well as both laboratory and field evaluations of permeability. This data shall be provided as part of the final design reports and submitted to the appropriate local, state, and federal agencies for approval."

216 Comment: Previous investigations in the western portion of the site have resulted in a general understanding of flow conditions in the Q 1, and lower aquifers. Additional hydrogeologic characterization need only be focused towards gaining information on the aquifers beneath the proposed waste management units. This work will be performed in a phased approach as part of both the final design and construction phases. Additional site-specific information will be collected from monitoring wells that will be incorporated into the monitoring network. All findings will be presented in a final monitoring network construction report. Therefore the mitigation measure should be amended in accordance with this comment.

18. Figure 3- 15:

Contour Map showing Potentiometric Surface ·In Wells Screened in Unit $Q1_6$ (August 1989):

217 Comment: Piezometers P-25 and P-SO are in fact completed in unit Ql, and do not belong on this map. Piezometers P-45, P-36, and well MW-49 are completed in both units $Q1_6$ and $Q1_8$ and should not be inciuded on this map.

19. Figure 3- 16:

Contour Map showing Potentiometric Surface in Wells Screened in $Q1_8$-Q_{10} (August, 1989):

218 Comment: Piezometers P-25, P-45, P-48, and wells MW-9C and MW-44 are screened across $Q1_6$ and $Q1_8$. Piezometer P-8 is screened in the $Q1_6$ unit. Therefore, these piezometers and wells should not be included on this map.

20. Figure 3-19:

Contour Map Showing Potentiometric Surface in Wells Screened in Uppermost Aquifer (August, 1989):

219 Comment: The title on this figure is unclear. At the Facility, the saturated portion of the $Q1_5$ stratigraphic unit has been defined as the uppermost aquifer. The Q1, aquifer is unconfined and is not

saturated west of Fault C. The lower aquifer at the Facility has been defined as the saturated $Q1_6$, $Q1_8$ and $Q1_{10}$ stratigraphic units. In general, this lower unit is confined. As a result, Figure 3-19 depicts a confined piezometric surface in the western part of the site and a predominantly unconfined water table in the area east of Fault C. Hydrogeologic data collected to date indicate that ground water flow under these two regimes is separate. As noted in Section 3.4.1.7 of the EIR, "In general, there is a significant difference in head between the $Q1_5$ and $Q1_6$ zones, generally in the range of 8 to 12 feet. This suggests that there is limited interconnection of these zones." Therefore, to combine data for these two distinctly different aquifers on one map implies a hydraulic connection for which there is no evidence. This interpretation has little or no relationship to actual ground water flow patterns at the site and does not represent a single "uppermost aquifer," an entity which does not exist at this site.

21. 3.4.13 Site Specific Description of Water-bearing Zones and Directions of Ground Water **Flow**

Page 3-69; First full paragraph:

"Figure 3-19 is important since it represents the hydraulic configuration in the saturated zone that would first be impacted should leakage occur from any of the waste disposal units. Therefore, the ground-water monitor well network must be designed with adequate information on directions of ground-water flow within the uppermost water bearing zone. The adequacy of data in the uppermost zone is definitely in question for the western portion of the facility and somewhat questionable for the eastern area."

220 Comment: Whereas Figure 3-19 does show the elevation of the first encountered continuous water-bearing zones at the facility, it does not represent a single aquifer, and it therefore cannot be considered as a basis to design a ground water monitoring network. As stated in 'Comment 14, the first continuously saturated aquifer west of Fault C occurs under confined conditions, while the first encountered continuously saturated aquifer east of Fault C is unconfined.

Ground water quality is monitored on a unit-specific basis, with each regulated unit being constructed with its own background and point of compliance monitoring wells. Each regulated unit's monitoring network is completed in the unit-specific uppermost continuous aquifer. To the west of Fault C, this is the $Q1_6$ unit. East of Fault C, $Q1_5$ is monitored in the north, and $Q1_6$ is monitored in the south.

Ground water flow characteristics in the western portion of the site have been adequately characterized to allow for future investigations to be focused on the design and installation of monitoring networks on a unit-specific basis. This would be performed in a phased approach, with flow velocities and permeability information gathered during the installation of the first monitoring wells. This information will be incorporated into the final design and construction of the monitoring network for each waste management unit.

Ground water flow in the southeastern portion of the site has been complicated by the presence of several faults. This situation appears to have affected the choice of units screened during installation of the monitoring network surrounding Waste Management Units (WMUs) 3,5,8, and 9. Monitoring wells around the perimeter of proposed LC-5 will be installed in a phased approach as described in the previous paragraph to ensure that the proper hydrostratigraphic unit is monitored.

22. 3.4.1.6 Hydraulic Conductivity and Rates of Groundwater Movement

Page 3-78, 3-79, entire section:

The calculations of flow velocities in the DEIR incorporated inappropriate hydraulic gradients (i). New values for i should be used following discussions with ERCE. The resulting equations and flow velocities are shown below.

C-221 Recommended change:

1. $Q1_5$ in the vicinity of LC-3

k = 4.5 x 10” cm/sec

i = 0.002 feet/foot (obtained from Figure 3-17 [ERCE $Q1_5$])

n = 20%

$$v = \frac{4.5 \times 10^{-3}\ \text{cm/sec} \times 0.002\ \text{feet/foot}}{0.2} = 4.5 \times 10^{-5}\ \text{cm/sec} = .128\ \text{ft/day}$$

2. $Q1_6$ in the vicinity of P-5 near LC-4

$K = 1.6 \times 10^{-4}$ cm/sec
$i = 0.0025$ feet/foot (obtained from Figure 3-15 [ERCE $Q1_6$])
$n = 20\%$
$v = \dfrac{1.6 \times 10^{-4} \text{ cm/sec} \times 0.025 \text{ feet/foot}}{0.2} = 2.10'$ cm/sec = 0.006 ft/day

3. $Q1_6$ in the vicinity of MW-43, near WMU 3 (Future LC-5)

$K = 3.6 \times 10^{-3}$ cm/sec
$i = 0.004$ feet/foot (obtained from Figure 3-15 [ERCE $Q1_6$])
$n = 20\%$
$v = \dfrac{3.6 \times 10^{-3} \text{ cm/sec} \times 0.004 \text{ feet/foot}}{0.2} = 7.2 \times 10^{-5}$ cm/sec = 0.2 ft/day

4. $Q1_8$ in the vicinity of P-7 near WMU IIB

$k = 1.8 \times 10^{-4}$ cm/sec
$i = 0.001$ feet/foot (obtained from Figure 3-16 [ERCE $Q1_8$])
$n = 20\%$
$v = \dfrac{1.8 \times 10^{-4} \text{ cm/sec} \times 0.001 \text{ feet/foot}}{0.2} = 9.0 \times 10^{-7}$ cm/sec = 0.002 feet/day

23. Page 3-79; Second full paragraph.

"Faulting within the project area also represents a possible mechanism for interconnection of the water-bearing zones. Fault C appears to cause perturbations in hydraulic gradients in all water-bearing zones identified within the project area. If faults on the site represent permeable conduits, it is most likely that movement occurs from the deeper zones to the shallower zones due to the substantially higher hydraulic head in the deeper water-bearing units. There are currently insufficient data available to fully assess the hydraulic nature of the faults in the project area."

C22 Comment: As discussed in Comment 9, a review of IT's trench logs indicates that significant vertical displacement typically occurs along the central portion of each fault trace, decreasing to displacements on the order of a few feet or inches near the tertnini. As a result, the zone of possible hydraulic interconnection across the faults would be limited to a relatively small "window" in the center, where vertical displacement may be sufficient to juxtapose two aquifer zones. Whether this situation occurs depends on the size of the fault and the amount of vertical displacement in its central section. Based on borings and trench logs across Fault C, IT concluded that limited interconnection between the $Q1_6$ and $Q1_5$ aquifers does occur across the central portion of Fault C.

However, perturbations of ground water flow in the vicinity of Fault C have little or no effect on the facility's ground water monitoring program. This is because each ground water monitoring network is unit-specific, with water quality monitored immediately upgradient and downgradient of each waste management unit. For example, Unit LC-2 is west of Fault C, while Unit LC-3 is east of Fault C. Ground water quality is monitored on the downgradient, eastern side of LC-2 prior to movement towards Fault C. Ground water quality is then monitored along the western, upgradient side of LC-3 approximately 200 feet west of Fault C. Therefore, water quality will be monitored on both sides of this fault on a routine basis.

24. Page 3-80; Second page, last sentence:

"However, the screened intervals in a number of monitor wells may be in approximately (sic) designed to allow accurate monitoring of the ground water system beneath LC-3."

0 223 Comment: The approved ground water monitoring network for LC-3 is described in the IT Report "Revised Proposal for Monitoring Waste Management Units LC-2 and LC-3" dated January 1989 with a revision dated June 2, 1989. As proposed, the screen lengths were selected to monitor the entire saturated thickness of $Q1_5$. This would allow for the detection of compounds with specific gravities higher and lower than ground water.

During well installation, clay units above the silty $Q1_5$ aquifer were also found to be saturated in some areas. In several instances, well screens were extended into the overlying saturated clay as well; however, the primary purpose of these wells is to monitor the $Q1_5$ aquifer. As discussed in comment 31 and our summary cover letter, the ground water yield from the saturated clays is expected to be very low. As a result, screen sections that extend into these clays are therefore thought to allow for sampling of waters that is almost exclusively from the $Q1_5$ unit. On this basis, long screen lengths are still effective for monitoring $Q1_5$ and allow for earliest possible detection of any contaminants in the ground water.

25. **3.4.1.8** Existing Ground Water Monitoring Units

Page 3-84; First paragraph, last sentence:

"In addition, water level contour maps (Figures 3-15, 3-16 and 3-17) suggest that MW-50 is not situated hydraulically downgradient and will be of limited usefulness in the well network."

224 Comment: Monitoring well MW-50 is a background well. This correction should also be made in Table 3-6 (immediately following line in text).

26. Page 3-86, Table 3-8:

225 Comment: MW-21 should be incorporated in the list of background wells.

27. Page 3-86; Second paragraph, last two sentences:

"Hydraulic mounding associated with leachate migration could potentially affect the water quality in these wells. A background well situated in the vicinity of P-39 could alleviate these concerns."

226 Comment: The Class I landfills have all been constructed with leachate detection and removal systems. The leachate detection system is monitored on a daily basis. To date, there has not been a sufficient accumulation of leachate to require pumping of this system. Therefore, hydraulic mounding associated with leachate

migration does not appear to be a significant concern, and an additional background well in the vicinity of P-39 is not warranted on this basis.

28. Page 3-86; Last paragraph:

'The parameters being analyzed during monitoring may be insufficient to fully detect the types of contaminants that are, or could, potentially be disposed of in LC-1. It is likely that hydrocarbon- and solvent-contaminated materials have been disposed of, and that these waste streams may not be adequately monitored by the existing chemical parameters. It is therefore suggested that a volatile organic analysis such as EPA Method 8010/8020 or 8240 be included in the list of analyses. These analyses detect compounds such as methylene chloride and benzene. Inclusion of a semi-volatile analysis such as EPA Method 8270 may also be advisable. This method would detect compounds such as naphthalene or phenol."

C227 <u>Comment</u>: The, DEIR should be changed to reflect the fact that these analyses are currently being performed as required by existing permits.

29. Page 3-89; Third paragraph, last two sentences:

"The background well, MW-59, is situated a substantial distance from the Morton Landfill and is separated from it by LC-3.

Relocation of the background well to a position in the vicinity of P-63 would be appropriate."

228 Comment: The Morton Solids is an existing, permitted facility. Since it is not within the scope of the expansion project, it is outside the scope of the DEIR. CEQA does not require mitigation for facility that are not part of the "Project." A ground water monitoring plan for the Morton Solids landfill is in place and has been approved by the Colorado River Basin Region of the California Regional Water Quality Control Board.

30. 3.422 Potential for Migration Through the Ground-Water System

Page 3-96; Second paragraph, third and fourth sentences:

"Data presented in this EIR suggest that ground-water flow rates range from 0.04 ft/day in $Q1_6$ to 1 ft/day in $Q1_5$. Assuming that contaminants entered the ground-water system at LC-1 and moved through the system at the same rate as ground-water flow, off-site impacts could occur in 1 to 2 years."

229 Comment: The flow rates are inconsistent with other information in the DEIR. Accordingly the following change in the recommended: Data presented in the ETR suggest that ground water flow rates range from 0.02 feet/day in $Q1_6$ to 0.128 feet/day in $Q1_5$. Assuming that contaminants. entered the ground water system at LC-1 and

moved through the system at the same rates as ground water flow, offsite impacts could occur in 10 to 20 vearg.

31. 3.43 Mitigation Measures

Page 3-97:

"ERCE's review of the hydrogeologic information accumulated for existing facilities on the site, identified the following data deficiencies:

1. Lack of adequate information concerning the lithologic characteristics of the water-bearing intervals underlying existing facilities.

2. Lack of adequate data identifying the uppermost saturated zone in many areas of the existing facilities.

3. Insufficient data available to assess the influence of faulting on ground-water flow directions and hydraulic gradients.

4. Insufficient information concerning interconnections of water-bearing zones on a detailed basis.

Hydraulic, lithologic, and water quality data shall be utilized to assess the influence of Faults C and F on hydraulic gradients and ground-water movement near existing facilities. These studies should be conducted as soon as possible in order to allow for optional monitoring network design and the earliest possible detection of contaminant migration."

230 Comment: Ground water flow has been thoroughly characterized in the eastern portion of the facility in the vicinity of the active waste management units. A summary of the site geology may be found in the introductory comments. In the vicinity of LC-1 and LC-3, all monitoring wells have been completed in the unconfined $Q1_5$ aquifer. In the vicinity of WMUs 3,5,8, and 9, monitoring wells have been completed in both the unconfined $Q1_5$ aquifer and the lower confined aquifer. A description of the lithologic characteristics of these units may be found in the Hydrogeologic Characterization Report by IT dated September 3, 1987. Information gained through the geotechnical testing of samples collected as part of the hydrogeoiogic characterization of the site has been used to evaluate the flow velocity in all saturated units.

The unit-specific monitoring networks have been designed to take into account the complexities in the site hydrogeology related to faulting. This is exemplified at the WMUs, where ground water samples are collected from both the unconfined $Q1_5$ aquifer and the lower confined aquifer. Both aquifers are monitored because $Q1_5$ is unsaturated along the southern margin of the WMUs due to warping of the strata. Sampling wells in the lower confined unit is required in order to effectively monitor ground water as it approaches the WMUs from the southwest.

Localized perturbations in the hydraulic gradients in the immediate vicinity of Faults C and F are of little consequence. As stated in Comment 18, monitoring networks are designed on a unit-specific basis and do not rely on site-wide aquifer characteristics.

32. Page 3-97; Last sentence through 3-98 to second to last paragraph:

"In reviewing the available information for proposed facilities, ERCE found that the data was not fully sufficient to evaluate the potential for hydrogeologic impacts. Studies shall be conducted during design of WMUs IIA, IIB, G1, G2, LC-4 and LC-5 which provide the following information:

1. Adequate information concerning the lithologic characteristics of water-bearing intervals west of Fault C.

2. Adequate water-quality data in the western portion of the facility.

3. A thorough evaluation of hydraulic gradients in the western and southeastern portions of the site.

4. A thorough assessment of the influence of Faults D, F, I and J on hydraulic gradients and ground-water movement.

5. Additional permeability and transmissivity data for the western and southeastern portions of the site.

6. Further definition of the so called “deep” aquifer on the western side of the facility to allow evaluation of the distinct water-bearing zones that underlie this area.”

231 Comment

Characterization in the western portion of the site has resulted in an understanding of general flow patterns in the confined $Q1_6$ aquifer. This is the first laterally continuous aquifer encountered west of Fault C. Future hydrogeologic characterization will be performed in a phased approach in the vicinity of each proposed landfill. This approach will allow for an accurate assessment of flow characteristics during the design and construction phases of each new landfill. During the initial phases, geotechnical sampling will be performed to aid in the understanding of permeability and transmissivity of the monitored units.

As stated in Comment 3, faulting on site has been adequately characterized. Future fault studies will consist of mapping excavation walls during landfill construction to evaluate the possible presence of previously unrecognized fault strands.

33. Ground **Water Monitoring**

Page 3-99; Third paragraph:

"LC-5. A total of five wells will be installed to monitor ground-water on the WMU embankment, approximately 20 feet from the inside top of slope. The wells will be spaced a maximum of approximately 400 feet apart on the eastern (downgradient) side of the unit. Existing wells P-26, P-67, and MW-45 will also be used to monitor WMU LC-5. Two of the new wells will be located upgradient (west and south) of the WMU and will be screened in the "deep aquifer" (presumably $Q1_6$). The downgradient monitoring wells will be located on the eastern and northern edges of the landfill and will be screened in the sand subunit of Ql,. MW-45 is also screened in this unit. According to the design report, wells screened in $Q1_5$ in this area did not produce a sufficient 'amount of water to support a well."

232 Comment: The DEIR does not take into account the most recent modifications in the approved Monitoring Network for LC-2. Accordingly the following change is recommended: A total of 10 monitoring wells will be installed at an approximated distance of 30 to 40 feet from the inside top of slope of the containment structure. They will be spaced at a distance of approximately 150 feet a part on the downgradient side and approximately 300 feet apart on the upgradient sides. The wells will be completed with approximately 5 feet of well screen positioned in the saturated sands of the $Q1_6$ unit.

34. Page 3-100; Third paragraph:

"G1. A total of 6 monitoring wells (GMW3 through GMW-8) will be installed on the surrounding WMU embankment as described above for 11-A. All wells will be screened in the saturated sands of unit Q1, and will be installed during landfill construction."

Comment: The DEIR does not recognize the inclusion of background monitoring wells CMW-1 and GMW-2 in the monitoring network surround G 1.

233 Recommended change: G1. A total of 8 monitoring wells (GMW-1 through GMW-8) will be installed on the surrounding WMU embankments as described for IIA. Wells GMW-I and GMW-2 will act as upgradient wells for both WMU G1 and WMU G2. All wells will be screened in the saturated sands of unit 01, and will be installed during landfill construction.

35. Page 3- 100; Fourth paragraph:

"G2. A total of 5 monitoring wells (GMW-9 through GMW-13) will be installed on the surrounding WMU embankment as described above for II-A. All wells will be screened in the saturated sands of unit Ql, and will be installed during landfill construction."

234 Comment: The DEIR should be changed to reflect the fact that wells GMW-1 and GMW-2 will function as background wells for G2.

Recommended change: G2. A total of 5 monitoring wells (GMW-9 through GMW-13) will be installed on the surrounding WMU embankment as described above for IIA. All wells will be screened in the saturated sands of unit O1o. Background water quality samples will be collected from wells GMW-1 and GMW-2 that will be installed upgradient of G1.

36. Page 3-100; Last paragraph, page 3-101 first two sentences and underlying paragraph:

"1. Monitor wells were not screened within the uppermost saturated zone.

2. Screen lengths in monitor wells are excessive, contrary to the recommendations by the EPA (1986).

In addition, a review of ground-water monitoring parameters should be conducted to assess their adequacy. This review should include a comparison with those materials likely to be disposed of in the WMUs."

Comment: Monitoring wells were installed in the uppermost
235 continuously saturated unit. This accounts for wells being installed in both the upper and lower aquifers in the vicinity of WMUs 3,5,8, and 9. Screen lengths used were approved by the DHS, EPA, and RWQCB. Parameters analyzed for during routine ground water monitoring were selected as a result of their being representative of the constituents in the waste being disposed of in the WMUs. This

information was submitted to the agencies in a report prepared by IT entitled "Proposal for Ground Water and Vadose Zone Monitoring Programs, Waste Management Units 3, 5, 8 and 9" dated September 1988.

37. Page 3-101; Third full paragraph and first sentence of second paragraph:

"A complication to designing ground-water monitoring networks at the GSX facility is the presence of fine-grained lithologies such as silt and clay as the uppermost saturated zone beneath many areas of the facility. In many instances, such units are not monitored due to their low permeability; this apparently occurred during design of the monitoring system for WMUs 3, 5, 8, and 9.

It is ERCE's opinion 'that monitoring of these fine-grained units should be conducted at GSX if they represent the uppermost saturated zone."

236

Comment: The low permeability of the fine-grained deposits on site and associated hydraulic conductivities (on the order of 10^{-7} to 10^{-8} cm/sec) does not allow for significant migration of ground water. Any possible contaminants would therefore not be identified for tens of years. Because of the low flow velocities associated with these fine-grained sediments, the monitoring plan was developed so that monitoring is conducted in the uppermost unit in which ground water moves "relatively" quickly. (It is again important to note that even in these coarser units, ground water generally moves at rates of only 0.04 to 0.1 feet per day).

The apparent saturation of the clays at the Facility is misleading. Wells that are screened within the sands underlying these thick clay units often exhibit water levels that extend into the overlying clays. This elevated water level is a result of ground water flow under confined conditions allowed to equilibrate with atmospheric pressures. A well that is installed in the low permeability clays will <u>not</u> exhibit water levels at the same elevation as a well completed in an underlying confined aquifer.

This was confirmed during drilling onsite. It is highly probable that wells completed solely within the clay units will not produce any water. Inspection of clays from continuous core samples was performed during well installation around LC-3. No free water was noted in these clays.

There are practical limitations to the ability to monitor ground water in clay units by conventional monitoring wells or other available devices. This is particularly of concern for classes of chemicals such as VOCs, which would likely volatize from ground water during the collection of samples from such units. If chemicals were released from a regulated unit and migrated vertically to a low permeability zone that overlies the first aquifer unit, it is expected that these chemicals would then move primarily by diffusion within the clays. Diffusion movement is based upon concentration gradients, with movement from areas of high concentration to areas of lower concentration. The apparent upward hydraulic gradient though the clay will not impart advective transport forces within the clays. Therefore, diffusion will continue with chemicals eventually reaching a deeper water-bearing aquifer unit. Whether these chemicals would be detected in the aquifer would depend on the rate of movement of any chemicals through the overlying clay unit and the volume flow rate of natural ground water within the underlying aquifer. A monitoring system completed in the saturated clay units, therefore, is not a necessary component viable within the ground water monitoring system at the Facility.

38. Page 3-102; First paragraph:

"It may also be advisable in certain instances to monitor the permeable zone immediately underlying an uppermost saturated zone composed of fine-grained materials. This would be important if there was a possibility of dense non-aqueous phase liquids being disposed of within the waste management units, which could migrate downward through the upper fine-grained unit in spite of the apparent upward hydraulic gradient."

0237

Comment: Dense non-aqueous phase liquids are not disposed of at the site without first being treated and stabilized, thus limiting any migration potential. Therefore, the presence of these treated and stabilized wastes within the landfills should not require any additional monitoring.

39. 3.42 **Impacts**

Page 3-95; Second paragraph .

"A second possible impact scenario is a catastrophic release of large amounts of liquid waste materials inside and outside the landfills."

238 Comment: There will be no liquid waste disposed of in the landfills. All wastes disposed of in the landfills will either be solid waste that has passed appropriate leach tests, or liquid or sludge waste that has been stabilized (treated and solidified).

40. 353.1 **Hydrology**

Page 3-110; Last paragraph:

"High flow velocities are expected of result from the PMP and other large rain events. Steps shall be taken to insure that the previously discussed critical reaches of the diversion channels be protected against excessive channel erosion and possible breaching by flash flood waters. Protective measures shall be employed to mitigate the potential for breaching and undermining. These measures could include some form of bank armoring or other means of protecting the bank from erosion."

239 Comment: During a rainstorm on September 3, 1990, approximately 6.5 inches of rain fell overnight. This is greater than the 100 year event. An inspection of the diversion channels and berms showed

very minor erosion and no undermining. Thus, armoring of the banks does not appear to be warranted.

41. 3.6.13 Air Quality Trends

Page 3-121; Fourth paragraph

"During an ll-day period in January 1988, toxic air contaminants measured at concentrations above background levels included benzene; 1,2, dibromomethane; methylene chloride; tetrachlorethene; tetrachloromethane; and trichloroethylene; (GSX Background Environmental Data, 1989)."

240 Comment: The methylene chloride found in both the integrated surface samples and ambient air is suspected to be a laboratory artifact. Similar levels were found in the integrated surface samples as in the ambient air, and similar levels were found in upwind and downwind samples. The results for 1,2, dibromoethane (not 1,2, dibromomethane, as listed) showed that all samples were either trace or non-detects. Similar results were reported for tetrachloromethane. The EIR should be amended accordingly.

42. Page 3-142; Table 3-30

241 Comment: There appears to be two typographical errors in this table.

The value of methylene chloride emissions for the non-hazardous waste unit should be 11.1 lbs/day and the worst case daily emissions for methylene chloride is 37 lbs/day.

43. 3.9.2.5 Chronic and Acute Risks of Proposed Facility compared with Current Operations

Page 3-208; Third paragraph

"Only the ingestion of ground water at the property boundary as a result of a potential tank release from the hazardous waste treatment area of the proposed facility showed a high cancer risk (9 x 10^{-1}) and non-cancer risk (hazard index was greater than 1.0). The probability of such an event is, **however, low,** and..."

242 Comment: The probability of an event that would rupture the tank, its secondary containment and its redundant liner is very low. Should such a rupture occur, it would take years for the material from such a spill to reach groundwater. An emergency spill program would allow the material from such a spill to be removed long before it reaches ground water. Thus, the potential impacts assumed in the above scenario are so implausible as to not even be a reasonable worst-case event.

44. **3.9.3.1** Hazardous Waste Treatment

Page 3-222; Third paragraph

"Another mitigation measure would be to utilize tanks that are smaller than the estimated 19,800 gallon capacities. If smaller tanks are used, the quantity released for a rupture would decrease the stress on the containment system and could prevent its release to the ground. Also, if the release escaped the containment system, the quantity to be cleaned up would be more manageable and could be prevented from reaching the aquifer. Either of these mitigation measures should reduce the impact to insignificance."

0 243 Comment: See Comment 4.

45. 3.11.1 Mitigation Measures

Page 3-237; First paragraph:

'The potential requirement of additional personnel at the Planning Department, EHS, and Department of Public Works was identified as a significant impact resulting from the GSX facility expansion. This impact can be mitigated to below a level of significance by providing the necessary personnel through funding from GSX, with the exception of the APCD and the Office of Emergency Services, which have their own fee structure to provide needed funds."

0 244 Comment: See Comment 5.

46. 3.11.4 Mitigation Measures

Page 3-240; Last paragraph continuing to page 3-341:

'The following mitigation measures are available to the elementary school districts to alleviate their overcrowding and fund the construction of new facilities:

- Developer fees (as allowed by Assembly Bill 2926, Section 53080 of the Government Code)
- Lease-purchase arrangements
- Mello-Roos Community Facilities Act
- Leroy F. Greene State School Building Lease-Purchase Law

It can be assumed that the Brawley and El Centro school district will utilize some of these mitigation measures to reduce the impact of population growth in Imperial County upon the primary schools. However, it has been pointed out by Imperial County education officials that these programs are only operable as long as the State has money to implement them. There are no definitive criteria for appropriation of funds by the state to the program; the appropriation process takes into account the Governor's budget, legislative activity, and demand for funds."

245 The DEIR concludes that the addition of children to schools in Brawley and El Centro is a significant direct and cumulative impact and suggests the above potential mitigation. Please refer to Comment 5.

188. The existing ground-water monitoring system is not adequate to monitor or define the extent of the uppermost saturated zone in this area. Additional investigation must be conducted prior to designing a ground-water monitoring network for WMU LC-5. Specifically, the uppermost saturated zone must be accurately defined throughout the general vicinity where future WMU LC-5 will be situated. The ground-water monitoring network should be designed to evaluate water quality in this uppermost zone.

189. Monitoring of the uppermost saturated zone is necessary to adequately evaluate the potential for impacts to ground water from the WMUs. These reasons include the following:

1. Monitoring of the uppermost zone will result in the earliest possible detection of contaminant migration to the ground-water system. If an underlying permeable zone is monitored rather than the uppermost saturated zone, detection may be significantly delayed or may never occur.

2. It is possible that significant migration of contaminants might not be detected if the uppermost fine-grained zone is not monitored. The contamination could migrate horizontally within the fine-grained zone and never penetrate to monitor wells located in an underlying permeable zone. This is particularly true when a vertically upward hydraulic gradient is present, as has been demonstrated within the study area.

Environ has noted that there are difficulties in monitoring fine-grained units such as clays, in particular that volatile organic compounds (VOCs) could be "stripped" from water samples obtained from these monitoring points. While it is agreed that monitoring of clays poses greater difficulties than assessing more permeable lithologies, it is essential to monitor the less permeable units if they represent the uppermost saturated zone for the reasons described above. Environ also hypothesizes that if contaminants reach an uppermost saturated clay that "Chemicals would then move primarily by diffusion within the clays and eventually reach a deeper water-bearing aquifer unit." Given the probable upward hydraulic gradient in this area, it is virtually impossible that contaminants impacting the clay would migrate vertically downward. Even without an upward gradient, it would likely take hundreds of years for diffusive migration through any significant thickness of clay. It is much more likely that horizontal migration through the clays would occur, rendering a monitoring network screened in underling permeable zones completely ineffective. Therefore, an effective monitoring approach must include assessment of water quality in low permeability zones if they represent the uppermost saturated zone.

In regard to LC-3, it is possible that establishment of a monitoring network in the uppermost saturated clays may not be feasible due to the downward dip of the clays toward the west and the lack of a saturated section to the east of the landfill. Therefore, monitoring of the Ql5 unit only may be appropriate. Additional data may be required to fully assess this situation.

In regard to WMUs 3, 5, 8, and 9, there is no question that significant additional work is necessary to fully define the location of the uppermost saturated zone. Based on these additional studies, a monitoring well network should be established that is capable of detecting contaminants which could potentially leak from the landfill. This may include monitoring of low permeability units.

190. See the responses to comments 208,212 and 216.

191. See the response to comment 213.

192. See page ES-l 1 of the Revised Draft EIR.

193. Imperial County, the lead agency, determined that socioeconomics would be discussed in the EIR, as is their prerogative in accordance with CEQA 15131. Socioeconomic impacts may be determined to be significant if they cause substantial adverse effects on human beings, either directly or indirectly, according to CEQA Guidelines discussion of this section.

194. GSX expressed the view that the presence of faults does not fundamentally change the ground-water flow in the vicinity of the WMUs east of the fault and that any complexities introduced by the faults are irrelevant since WMUs cannot be located within the fault zones.

There are currently insufficient data to clearly define the interrelationships between the “deep” and “shallow” aquifers across Fault C. The Hydrogeologic Characterization Report (IT 1987) makes reference to a future study, never performed, that was intended to “further examine the recharge” to the shallow aquifer across Fault C.

Despite the 200-foot setback from the faults, the potential exists for effects of the faults on ground-water flow in the vicinity of the WMUs. It is essential that these relationships are understood in order to adequately monitor ground water at the site and to predict directions of contaminant migration should leakage to the water-bearing zones occur.

195. The existing ground-water monitoring system is not adequate to monitor or define the extent of the uppermost saturated zone in the area of WMUs 3, 5, 8, and 9 (future location of LC-5). Additional investigation must be conducted prior to designing a ground-water monitoring network for WMU LC-5. Specifically, the uppermost saturated zone must be accurately defined throughout the general vicinity where future WMU LC-5 will be situated. The ground-water monitoring network should be designed to evaluate water quality in this uppermost zone.

196. See response to comment 189.

197. See responses to comments 208 and 212.

198. See response to comment 2 13.

199. See responses to comments 195,223, and 226.

200. See response to comment 216.

201. See responses to comments 208, 212, 213, and 216.

202. See response to comment 239.

203. See response to comment 192.

204. See response to comment 193. In addition, the impacts to the school districts are not considered socioeconomic (Note that they are separate items on the initial study checklist). The overcrowding of a school is a physical impact, requiring the construction of temporary classrooms or new schools, as well as an adverse impact on human beings.

205. See page 2-63 of the Revised Draft EIR.

206. See page 2-65 of the Revised Draft EIR.

207. See page 3-30 of the Revised Draft EIR.

208. The DEIR concludes that a more accurate determination of fault termini and fault age is necessary. This particularly true in the western portion of the site, where delineation of fault traces is based on relatively few trenches.

209. See response to comment 208.

210. See page 3-45 of the Revised Draft EIR.

2 11. See page 3-49 of the Revised Draft EIR.

212. As stated in the response to comment 208, the DEIR concludes the faults have not been adequately delineated. It is imperative that these investigations be conducted prior to construction of WMU's in order to comply to the 200-foot setback siting requirement of CCR Title 23. These objectives cannot be achieved during landfill construction since excavation is not likely to extend 200 feet past the perimeter of the new facilities.

213. The figure of 0.60 for the peak horizontal ground acceleration value is based on projections of horizontal acceleration in sedimentary bedrock underlying the site and is the peak acceleration design value identified by the geotechnical consultant for the site (Leroy Crandall and Associates). The value was apparently derived from the attenuation curves presented in Schnabel and Seed (1973). The 0.60 g value was

also cited in the Hydrogeological Characterization Report (HCR) as the appropriate acceleration for facility design considerations.

Environ has presented the argument that attenuation should be based upon those guidelines established by Seed and Idriss (1982), as well as attenuation relationships for deep soils presented in Idriss (1985). According to Environ, the appropriate value for facility design is 0.48 g.

The methodology utilized to estimate this peak ground acceleration value could not be identified in the literature so no verification of the calculation was possible. However, ERCE's review of Idriss (1985) indicates that it is inappropriate to utilize the attenuation curves presented in this paper for "soft to medium stiff clay and sand" or "deep cohesionless soils" for the Imperial Valley site since the facility is underlain by stiff clays and dense sands. It may be appropriate to utilize the curve presented for "stiff soils"; however, this results in reductions of peak accelerations of less than 10% from the "rock" acceleration curve. Therefore, the validity of the methodology used for developing the 0.48 g design acceleration is very questionable.

A number of well-documented peak horizontal ground acceleration attenuation curves have been developed by various researchers. These curves generally incorporate acceleration data from previous seismic events and attempt to develop mathematical equations and curves which describe and predict attenuation of ground acceleration with distance from a particular fault for earthquakes of various magnitudes.

Presented below are a number of different attenuation equations which have been developed by various researchers. Site-specific data from the GSX facility have been incorporated to allow prediction of mean peak accelerations at the facility. The site-specific data include using a maximum credible earthquake of 7.0 and a distance of 4 miles (6.48 km) from the facility to the closest segment of the Superstition Hills fault.

a = median peak horizontal ground acceleration (in g)
m = magnitude of earthquake
R = closest distance to the source

1. Joyner and Boore (1981)

   $\text{Log a} = -1.02 + 0.249\ m - \text{Log D} - 0.00255\ D$
   $D^2 = R^2 + h^2$; h = 7.3 km
   a = 0.51 g

2. Joyner and Boore (1982)

   $\text{Log a} = -1.19 + 0.276\ m - \text{Log D} - 0.00259\ D$
   $D^2 = R^2 + h^2$; h = 7 exp [0.4 (m-6)]
   a = 0.42 g

3. Campbell (1981)

   $\ln a = -3.99 + 1.28\ m - 1.75 \ln [R + C(m)]$
   C(m) = 0.147 exp (0.732 m)
   a = 0.35 g

4. Idriss et al (1982)

   $\ln a = \ln a\ (m) - I3\ (m) \ln (R + 20)$
   a (7.0) = 91.7 ß (7.0) = 1.63
   a = 0.44 g

5. WCC (1983)

   $In\ a = -2.611 + 1.1\ m - 1.75 \ln [R + C(m)]$
   C(m) = 0.3157 exp (0.6286 m)
   a = 0.37 g

The attenuation calculations listed above have median peak accelerations ranging from 0.35 to 0.51 g. The researchers for Method 1 recommend that the calculated acceleration be multiplied by a factor of 0.87, reducing the calculated 0.51 g acceleration to 0.44 g. The overall average of these acceleration calculations is 0.42 g. Therefore, the 0.60 g design value cited in the DEIR, based on information in the geotechnical report for the facility and the HCR, is substantially greater than these calculated peak horizontal accelerations.

2 14. See the response to comment 208.

215. See the response to comment 213.

2 16. The DEIR concludes the understanding of stratigraphy in the **western** portion of the site is not adequate to determine site suitability or to design individual ground-water monitoring systems. Additional studies shall provide data on the extent and thickness of the lithologic units defined in previous studies, ground-water levels and flow characteristics, geotechnical properties, and both laboratory and field evaluations of permeability. These data will provide a more detailed knowledge of hydrogeology in the western portion of the site on which to base **the** ground-water monitoring system design. A system so designed will provide optimal placement of monitoring wells and the earliest possible detection of a **contaminant release.**

217. Piezometers P-36 and P-50 are shown in the Borings Logs (Appendix A of the HCR) as being screened in Ql_6. Likewise, well MW-49 is **shown** as being screened through the saturated basal sand of Ql_6. It is agreed, however, that piezometers P-25 and P-45 are screened through Ql_6 and Ql_8. There is a sparsity of data concerning the two water-bearing zones especially in the western portion of the site and there is a need for additional evaluation of the hydraulic characteristics of these zones.

21.8. Piezometer P-8 is shown as being screened through Ql_8 and Ql_9 in Figure 23 (Cross-section V-V') of the HCR and in Table 5.2-l (Summary of Well Installation Data) of the RCRA Part B Permit Application. It appears that the boring log is incorrect in that the top of Ql_8 is not labelled. Well MW-44 is shown in Figure 14 (Cross-section E-E') and the boring log in Appendix A, both in the HCR, as being screened from the moist clay of Ql_6 to the wet silt of Ql_8. Table 5.2-l of the RCRA Part B Permit Application shows well MW-44 as screened in Ql_8. Therefore, it appears that these two ground-water elevations are appropriately placed in Figure 3-16 of the DEIR. It is agreed, however, that the screened interval for piezometers P-25, P-45, P-48, and well MW-9C includes Ql_6 and Ql_8. The rationale for placement of these measurements in Figure 3-16 is as stated above for Figure 3-15. The paucity of data is even more pronounced for Ql_8, Ql_9, and Ql_{10} than for Ql_6 and emphasizes the need for more hydraulic evaluation of deeper water-bearing zones throughout the site. This is particularly true for the western section of the site and for the lower portions (below Ql_6) of the "deep aquifer."

219. This figure depicts water-level data for all wells screened in the uppermost aquifer, regardless of the unit in which the well is screened. No hydraulic interconnection

between the "deep" and "shallow" aquifers is implied in this figure since the contours delineating each aquifer are not connected. The figure is intended to provide some ability to assess hydraulic gradients and directions of ground-water flow in the uppermost water-bearing zones across the site. Admittedly, the lack of adequate data for the uppermost zone in some areas causes inaccuracies in the evaluation that can only be remedied by acquisition of additional data.

220. As indicated in the response to comment 219, Figure 3-19 is not intended to represent "a single aquifer," but merely depicts the water-bearing zone which would be first impacted should leakage occur from any of the WMU's. Currently available data are not adequate to assess the hydraulic relationships between these various uppermost zones.

The DEIR concludes ground-water flow characteristics in the western and southeastern portions of the site have not been adequately characterized to allow for the design of monitoring systems. Additional studies shall be performed prior the design and emplacement of monitor-well networks.

221. Corrected equations incorporating new hydraulic gradients are included on page 3-80 of the Revised Draft EIR. Solutions to these equations suggest that ground-water flow rates range from 0.006 to 0.2 feet/day in Ql_6, to 0.128 feet/day in Ql_5. Using these corrected values, offsite impacts as described in Section 3.4.2.2 of the DEIR could occur in 8 to 13 years.

222. See the response to comment 194.

223. The DEIR concludes some monitor wells at LC-3 are screened over intervals which are too long to accurately monitor ground-water beneath the site. Five of the eleven monitor wells at this waste management unit have screen lengths greater than 30 feet. As a result, the potential exists in these wells for dilution of ground water, possibly resulting in delay of contaminant detection. In addition, wells screened across low permeability clays and underlying higher permeability lithologic materials are incapable of rapidly detecting contaminant impact to the clay units due to dilution effects.

224. See page 3-86 of the Revised Draft EIR.

225. See page 3-88 of the Revised Draft EIR.

226. To date, there has apparently been no leakage of leachate at the Class I landfills. However, in the event leakage does occur, the potential exists for hydraulic mounding at these sites. A background well located in close proximity to the WMSJ would, in this instance, be of limited usefulness. Therefore, the area in the vicinity of piezometer P-39 is a better location for a background well for this WMU.

227. A second review of the following sources of ground-water quality data was conducted to locate analytical results for volatile organic (EPA Methods 8010/8020 OR 8240) and semi-volatile organic (EPA Method 8270) compounds in the vicinity of LC-1:

Hydrogeologic Characterization Report (IT 1987), Appendix C – Water Quality Data.

Quarterly Report, Hydrologic and Vadose Zone Monitoring, First Quarter 1988 (IT 1988).

Hydrogeologic Assessment Report (HAR), Tables 10.4, 10.5, 10.6, and Appendix K (IT 1989).

Quarterly Hydrogeologic Monitoring Report, Fourth Quarter 1989 (Environ 1990).

No data for these parameters were located pertaining to ground-water in the vicinity of LC-1.

228. It is acknowledged that the Morton Solids landfill is an existing, permitted facility. However, as stated on page l-l of the DEIR, the continued operation of existing developments on the site were addressed as well as the planned expansion. Therefore, the "Project" includes all activities on the 640-acre site. The Morton Solids landfill is no more "outside the scope of the DEIR" than any of the other facilities evaluated in the document, and mitigation proposed for this landfill is just as appropriate.

229. See the response to comment 221. See pages 3-80 and 3-98 of the Revised Draft EIR.

230. Although there has been a significant amount of hydrogeologic characterization completed in the northeastern portion of the facility, no permeability data have been obtained from the deep aquifer in the vicinity of LC-1 and LC-3.

In the vicinity of WMUs 3, 5, 8 and 9, a majority of the wells are screened in the "deep" aquifer (Ql_6 and Ql_8). The existing ground-water monitoring system is not adequate to monitor or define the extent of the uppermost saturated zone in the area of WMUs 3, 5, 8, and 9 (future location of LC-5). Additional investigation must be conducted prior to designing a ground-water monitoring network for WMU LC-5. Specifically, the uppermost saturated zone must be accurately defined throughout the general vicinity where future WMU LC-5 will be situated. The ground-water monitoring network should be designed to evaluate water quality in this uppermost zone.

Several existing and proposed units are located in close proximity to known faults. The existence of these faults appear to cause perturbations in ground-water flow characteristics which have yet to be clearly defined. Therefore, in order to design effective monitoring programs, it is necessary to understand the details of fault/ground-water interactions. There are currently insufficient data to delineate the interconnection of Ql_5 and Ql_6 near Fault C.

231. See the response to comments 212 and 216.

232. See page 3- 102 of the Revised Draft EIR.

233. See page 3- 102 of the Revised Draft EIR.

234. See page 3- 103 of the Revised Draft EIR.

235. See the responses to comments 195,223 and 227.

236. See the response to comment 189.

237. Given the treatment and stabilization processes employed prior to disposal of these materials, the potential for migration of dense non-aqueous phase liquids (DNAPL) may be low. It may still be advisable to monitor underlying fine-grained units in

order to ensure that any release, however unlikely, is detected. In addition, Environ's comments indicate that the ground-water monitor wells around LC-3 were screened over the entire thickness of Ql5 to "allow for the detection of compounds with specific gravities higher and lower than ground water", suggesting a potential for DNAPL migration.

238. See page 3-97 of the Revised Draft EIR.

239. Armoring of the banks at the critical reaches discussed in the DEIR is warranted by the potential for highly significant water quality degradation in the Trifolium Storm Drain and the Salton Sea National Wildlife Refuge if a PMP occurs and the offsite diversion berm fails. It is this level of catastrophic event the bank armoring would be designed to prevent, as stated on page 3- 110 of the DEIR. Lower flow rates, such as produced during the storm event mentioned in the comment, may not generate substantial erosion; however a probable maximum flood, which is the worst-case scenario, easily could.

240. See page 3- 126 of the Revised Draft EIR.

241. See Tabel 3-30 of the Revised Draft EIR.

242. Comment noted. Text to clarify that an emergency spill program would allow the material from a spill to be removed before it reaches the ground water has been added to the DEIR Please see page 3-214 of the Revised Draft EIR.

243, On page 3-222, the DEIR notes an immediate clean up program would reduce impacts to below a level of significance, and acknowledges the low permeability of most of the underlying formations should slow percolation rates, providing time to complete a successful clean up. Reducing tank size was mentioned as an alternative mitigation measure. A sentence has been added to the DEIR noting emergency clean up plans are required in various permits which contain spill and prevention contingency plans. Please see page 3-226 of the Revised Draft EIR.

244. See responses to comments 193 and 204.

245. See the response to comment 204.

IMPERIAL COUNTY HEALTH CENTER,
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
COURTHOUSE * 939 W. Main Street
El Centro. CA 92243

Phone:
(619) 339-4203 Ext.203

DATE 8-21-90

RECEIVED
AUG [illegible] 1990
IMPERIAL COUNTY
BUILDING DIVISION

MEMORANDUM

TO: Jurg Heuberger, Director - Planning/Building

FROM: Gerald Quick, LEA, EHS

SUBJECT: GSX Imperial Valley Facility Draft EIR

This memorandum addresses only thatportionof the DEIR relating to the non-hazardous waste processing facility (NWSU) and the related Class II, geothermal and asbestos landfills.

In a telephone conversation on August 20, 1990, with Mr. Joe J. Zarnoch, Department of Health Services, Long Beach Region IV office, it was agreed that the asbestos landfill would be placed under the DHS permit (along with RWQCB). This will of course, necessitate adding the asbestos landfill operations to his Part B application for the Class I expansion.

The NWSU, Class IIA-IIB and geothermal Gl-G2 will be permitted by the Local Enforcement Agency with concurrence from the California Integrated Waste Management Board. The NWSU will be under one permit and the Class II and Geothermal under another permit.

Following are specific comments:

246 1. List of tables, page iX, number 3-49. This relates to Residents at Lemon Grove. This should say, "Residents at the lemon grove," so as not to confuse anyone with the residents in Lemon Grove, a community in San Diego County.

247 2. Page 2-27, Section 2.4.6, 2nd line, following Imperial Valley, the word "Facility" should be added.

248 3. Page 2-63, Section 2.6.10.1 Groundwater Monitoring. This section should include radionuclide background monitoring prior to receiving geothermal wastes. Include operational and postclosure monitoring.

249 4. Page 2-72, Section 2.6.12.3 Wind Dispersal Control. This section mentions specific control measures for high wind conditions, but is silent on what constitutes high winds. Recommend that disposal of geothermal wastes cease when wind velocities reach 13 miles per hour and that other earth moving or similiar activities associated with the geothermal landfill cease when wind velocities reach 21 miles per hour.

250 5. Page 2-73, Table 2-10, Scheduled Closures. WMU A-l, asbestos shows a closure date of 2020, yet the cubic yard capacity on page D-11 lists 823,000 which by calculation would have to enclude all four phases (Al-A4) with a life expectancy of 39.5 years. One of the two figures requires clarification.

251 6. Page 2.7.2 Postclosure Plan. This section as it relates the NWSU, Class 11 and Geothermal units must reflect that closure and Postclosure plans require approval by the California Integrated Waste Management Board and the Local Enforcement Agency as well as the Regional Water Quality Control Board. The "County of Imperial" 2nd paragraph, is too ambiguous.

252 7. Page 3-2 Section 3.1.1. The use of the words "Septic tank" is inappropriate as such a term is generally associated with a secondary system. Since a secondary system does not exist, the proper term to use is "holding tank."

253 8. Page 3-223, Section 3.9.3.2. NORM. The Section should address the use of personal film badges (dosimeter) for all personnel handling geothermal wastes.

254 9. Page 3-223 NORM. The last paragraph of Mitigation of Exposure to Workers. The filters on the air conditioners should be indicated as HEPA or equivalent.

255 10. Page 3-242, 3-243. Sewage Disposal and Sewage. The use of chemical toilets and their pumping has been omitted and must be included in the discussion.

cc: Janet Page, CIWMB - Permitting
cc: Mike Finch, CIWMB - CLosure/Postclosure
cc: Joe J. Zarnoch, DHS, Region IV
cc: Danny Shaw, Plant Manager, GSX

8/90 au

Imperial County Division of Environmental Health Services, from Gerald Quick

246. The phrase is capitalized because it is part of a title. The phrase "Residents of the Lemon Grove" is not expected to confuse anyone; those seeking further explanation would find adequate clarification in the associated text.

247. Correction noted. See page 2-28 of the Revised Draft EIR.

248. Section 3.9.3.2 of the DEIR discusses mitigation measures for impacts due to naturally occurring radioactive materials (NORM). Page 3-225 states that the Groundwater Monitoring Plan as required by the RWQCB and Department of Health Services should include analyses of ground water for determination of radionuclides, and that these data should be compared to baseline values submitted by the applicant for soil and ground water.

249. See the response to comment 35.

250. A 39.5 year life expectancy for the asbestos landfill is an estimate based on the facility receiving a given number of trucks per week. However, this estimate is not exact. The year 2020 for closure is based on a 30-year financial assurance period which can be adjusted if there is remaining capacity after the year 2020. Therefore, all the numbers cited in the comment are as accurate as can be at this time.

251. Correction noted. See page 2-76 of the Revised Draft EIR.

252. Correction noted. See page 3-2 of the Revised Draft EIR.

253. Recommendation noted. A requirement for thermo luminescent dosimeters for personnel handling geothermal wastes has been added to mitigation measures. See page 3-227 of the Revised Draft EIR.

254. Recommendation noted. The filtration system on the vehicles in the geothermal WMUs should have the structural integrity to withstand the operating conditions and have a removal efficiency of 90 percent or higher for fugitive dust. HEPA or equivalent filters, which have a rated efficiency of 99.97 percent, would not be required for the expected operating environment.

255. Comment noted. A discussion has been added to page 3-243. See page 3-247 of the Revised Draft EIR.

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL PROGRAM
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245 WEST BROADWAY, SUITE 350
LONG BEACH. CA 90802
(213) 590-4868

DEC 04 1990

Mr. Jurg Heuberger
Planning Director
Imperial County Flaming Department
939 Main Street
El Centro, CA 92243-2856

Dear Mr. Heuberger:

COMMENTS ON THE DRAFT FINAL ENVIRONMENTAL IMPACT REPORT (CRAFT INTERAGENCY REVIEW, SUMMARY OF COMMENTS AND RESPONSES, NOVEMBER 1990) FOR THE LAIDLAW ENVIRONMENTAL SERVICES (IMPERIAL VALLEY) FACILITY EXPANSION (EPA ID NO. CAD000633164)

The California Department of Health Services (DHS) is taking this opportunity to provide comments on the Draft Final Environmental Impact Report (EIR) for the Laidlaw Environmental Services (Imperial Valley) Facility Expansion, dated November 1990.

DHS, in a letter dated October 3, 1990, submitted comments on the Draft EIR (dated August 1990). DHS' review of the Draft Final EIR has found that responses to our original comments on the Draft EIR are generally inadequate. As you know, DHS has a major permitting responsibility for the proposed project and will be required to use the Final EIR for compliance with the California Environmental Quality Act (CEQA) as well as for permit determination. We, therefore, believe it is very important that all DHS comments, presented in Attachment 1, be given full consideration.

In summary, we appreciate the opportunity to comment on the EIR prepared for the Laidlaw Imperial Valley facility and request that the Final EIR should adequately address our comments and concerns expressed in the attachment.

If you have any questions regarding these comments, please contact Joe J. Zarnoch of my staff at (213) 590-4872.

Sincerely,

Carmelita E. Pangeni
for Mohinder S. Sandhu, P.E.
Branch Chief
Facility Permitting Branch

Enclosures

cc: See next page

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ATTACHMENT I

DHS COMMENTS ON THE DRAFT FINAL ENVIRONMENTAL IMPACT REPORT (DRAFT INTERAGENCY REVIEW, SUMMARY OF COMMENTS AND RESPONSES, NOVEMBER 1990) FOR THE LAIDLAW ENVIRONMENTAL SERVICES (IMPERIAL VALLEY) FACILITY EXPANSION

A. GENERAL COMMENTS

256 1. The final EIR should include the current facility name, Laidlaw Environmental Services (Imperial Valley).

257 2. Text or margins in the draft EIR for final distribution should be marked to indicate that a correction or supplemental information appears in the Errata Section of the Final EIR.

3. Section 7.4 of the draft EIR does not adequately evaluate other alternative treatment technologies for the wastes proposed for liquid evaporation. The bioreclamation section discusses in-site soil decontamination. Incineration is not a likely treatment alternative for the Laidlaw facility and is therefore unsuitable for the treatment of wastes destined for evaporation. Specifically, the Errata Section of
258 the final EIR should discuss other viable treatment alternatives that would preclude the release of volatile organic compounds (VOCs) to the ambient environment. These alternatives should include an W/oxidation system capable of removing organic constituents from waste streams prior to introduction into the evaporation tanks. The Errata Section of the
259 final EIR should elaborate on an alternative system where VOC vapors from the evaporation tanks would be directed to the steamgenerators.

The proposed evaporation tanks will receive wastes from several process points. Chemical precipitation using oxidizing or reducing reagents may
260 not necessarily reduce the VOC level below 10 ppm. The Errata Section of final EIR should explicitly describe hw these multi-waste streams will be monitored so that a 10 ppm VOC lwel in the evaporation tanks will not be exceeded.

The Errata Section of the final EIR should include the follwing statement from response #2: "The carbon adsorption system, the methods
261 used to monitor for vapor breakthrough and the criteria for replacement of the carbon are specified by RCRA regulations and the GSX [sic] facility will comply with these regulations."

Again, the Errata Section of the final EIR should evaluate mitigation
262 measures to monitor and control products of incomplete combustion being emitted from the proposed steam generators being co-fired with VOCs.

4. The Errata Section of the final EIR should describe the truck covering
263 used for the transportation of geothermal wastes (which may contain naturally radioactive materials) and include it as a mitigation measure. This mitigation measure must protect public health by eliminating

exposure of radioactive materials in fugitive dust from trucks transporting geothermal wastes.

5. DHS disagrees with the findings of the Health Risk Assessment conducted by Clement Associates concerning an off-site truck transportation accident. We do not feel that risks would necessarily be below a level of insignificance. The severity of such an incident is difficult to predict with uncontrolled variables such as accident location, distance to nearest receptor, wind speed and direction, etc. Especially
264 considering that hazardous waste will be transported through a community such as Westmorland, emergency responses might mitigate the consequences of this type of accident, but nut necessarily to a level of insignificance. DHS requests that the possibility of an off-site transportation accident, with potential significant impacts, be addressedas an Unavoidable Adverse Environmental Effect in the final EIR.

B. SPECIFIC COMMENTS

1. Table ES-1, Air Quality/Climatology Issue

This section only addresses vehicular emissions and particulate matter emissions. Potential VCC emissions are a major concern of several
265 regulatory agencies. Again, DHS requests that VOC emissions from the proposed treatment and storage facility as well as combustion products from the steam generators be addressed under impacts.

2. Table ES-l, Health and Safety Issue

Again, the Errata Section of the final EIR should include the potential emission of radioactive particles in dust generated during the
266 transport of geothermal wastes as an impact and include, as amitigation measure, that geothermal wastes would be transported to the site in covered trucks.

3. Page 1-3, Paragraph 2

Again, DHS disagrees that EHS is the final permitting agency for the facility. EHS may be the CEQA lead agency, but irrespective of EHS, the
267 facility can not store, treat or dispose of hazardous waste without a permit from EPA or DHS. In the Errata Section, please change "EHS is the final permitting agency for the facility" to "EHS is the CEQA lead agency for the facility."

4. Page 2-19, Paragraph 5

Again, the Errata Section of the final EIR should describe the Hazardous
268 Waste Stabilization Unit (HWSU) solids receiving area. Will solids be placed on an open concrete pad? If so, considering that the facility is frequently subjected to severe wind conditions, please describe containment controls for dust and VOC emissions, if any.

5. Pace 2-21, Paragraph 3

The Errata Section of the final EIR should include the response to our
269 comment concerning the number and capacity of tanks proposed for sludge processing.

6. Pace 2-21, Paragraph 5

The Errata Section of the final EIR should include the response to our
270 comment if the liquid receiving tanks and the tank truckrinseate tanks are covered or not, and the number and capacity of tanks.

7. Pace 2-22, Paragraph 2

The Errata Section of the final EIR should include the capacity of the HWSU evaporation tanks. The response to our comment failed to describe
271 how the VOC content of wastes entering the evaporation tanks would be determined; the Errata Section of the final EIR should include this information.

8. Page 2-22, Paragraph 3

272 The Errata Section of the final EIR should include that the liquid bulking area will contain eight 10,000-gallon cover& storage tanks.

9. Page 2-22, Paragraph 4

The Errata Section of the final EIR should describe the VOC stripper system in more detail. This descriptim should include: wastes from the liquid bulking area which are amenable to further treatment will be
273 pumped to the liquid stabilization area where VOCs will be removed, as appropriate, in the stripper system: the VOCs will be directed to the two low-pressure steam generators where theywillbe mixedwith primary combustion air at the burners.

10. Page 2-23, Paragraph 2

Again, in the Errata Section of the final EIR should describe what vapors will pass through the adsorption unit (the draft EIR text is ambiguous). Please state that vapor streams containing greater than a 100 ppm concentration of halogenated hydrocarbons will be directed to
0274 the refrigeration/condenser and carbon adsorption unit A threshold cut-off value must be cited for the halogenated hydrocarbons concentration - the use of the term "appreciable halogenated compounds" in the response is unacceptable. The response to our comment failed to describe how the halogenated organic concentration will be monitored or determined - the Errata Section of the final EIR should include this information.

11. Page 2-23, Paragraph 3

0275 The response to our comment should be included in the Errata Section of the final EIR.

12. Page 2-24, Paragraph 2

The Errata Section of the final EIR should include the following statement from the response to our comment: "The NWSU solids receiving area incorporates a reinforced concrete slab." Please include the
0276 number and capacity of the storage tanks for liquids and sludges in the Errata Section of the final EIR. Also, please include the statement from the response to our comment that these tanks will be covered and "the process unit will have particulate control via misting."

13. Page 2-24, Paragraph 4

0277 The Errata Section of the final EIR should include the response to our comment.

14. Page 2-25, Paragraph 2

The Errata Section of the final EIR should include the respcnsetoour
0278 comment that storage tanks in the Area N-150 will be covered. Again, include the number and capacity of tanks for this area.

15. Page 2-25, Paragraph 4

Again, in the Errata Section of the final EIR, describe how drums or containers will be sampled and tested as a check with manifest
0279 descriptions. Also include the number of drums to be sampled in a truck load. The statement in the response to our comment that "Each drum will be sampled individually" is inconsistent with the RCRA Part B Permit Application.

16. Page 2-26, Paragraph 3

280 Include, in the Errata Section of the final EIR, the response to our comment.

17. Page 2-39, Laboratory

Again, in the Errata Section of the final EIR, include how many drums in
281 one truck load will be sampled and analyzed. This correction should supplement the following statement in the draft EIR: "The laboratory currently takes a sample from every load that arrives at the project site."

18. Page 2-65, Paragraph 2

282 Include, in the Errata Section of the final EIR, the response to our comment.

19. Page 3-203, Paragraph 1

DHS will provide a verbal comment, concerning the use of the database to
283 estimate potential facility air emissions, at the interagency meeting discussing the draft final EIR on Wednesday, December 5, 1990.

20. Page 3-208, Paragraph 3

284 See our General Comment #5.

C. ADDITIONAL COMMENTS

285 1. The Errata Section of the final EIR should include a table including the information requested in our original Additional Comments #3.

California Department of Health Services, supplemental Comment letter

256. Comment noted. Explanation of the current facility name has been added to the introduction of this volume of the Final EIR, page l-l.

257. Comment noted. The Revised Draft EIR will be distributed as Volume II of this Final EIR. Corrections or supplemental information are noted in Volume II as strikeout (~~strikeout~~) where text has been deleted and underline (<u>underline</u>) where new text has been added The errata section of the Final EIR for agency review has been eliminated, and all responses to comments requiring a change in the Draft EIR now refer to appropriate page(s) in the Revised Draft EIR. Note some pages in the Revised Draft EIR are different from pages in the August 1990 Draft EIR due to the insertion of new text. The Table of Contents in the Revised Draft EIR indicate both old and new page numbers.

258. The purpose of Section 7.4 (Alternative Technologies) in the DEIR was to evaluate processes different from those proposed for the GSX facility which have been successfully applied for treatment of hazardous waste on a commercial scale. The basis for the discussion was EPA Technology Transfer 625/8-87/014, "A Compendium of Technologies Used in the Treatment of Hazardous Waste" (EPA 1987). In this document, the status of ultraviolet photolysis (UV oxidation) is noted as laboratory scale, so the methodology was not discussed. However, the technology has advanced past this stage since the EPA document was published in late 1987. UV photolysis is a process that destroys or detoxifies hazardous chemicals in aqueous solutions utilizing UV irradiation. UV light has been used for degradation of dioxins in waste sludge. However, the waste must be extracted into a clean transparent solvent to be destroyed. Therefore, the process is not applicable for treatment of solid and sludge wastes, but it has been applied for the treatment of contaminated ground water. At the GSX facility, this technology may be applicable for removal of organic material from clear liquid wastes prior to introduction into the evaporation tanks. Disadvantages of this technology include the production of dechlorinated materials and free chlorine gas as reaction by-products, although these materials would be generated in low quantities due to the low concentration of organics in the waste stream to be treated. The principal disadvantage of UV oxidation for the GSX facility is the need for specific waste stream treatability studies by the vendor of the UV oxidation equipment in order to establish

appropriate oxidation conditions. This process would require roughly 3 weeks each time a waste stream changes. Since the GSX facility is expected to process widely varying waste streams, this treatability evaluation could be necessary on a frequent basis. Having a critical stage of the treatment processes under control of a vendor and subject to several-week delays is not desirable. Therefore, UV oxidation is not deemed a practical alternative for organics treatment at this time. However, if the technology advances to a stage where it can treat a wide range of waste streams without such vendor involvement, and if monitoring of the facility indicates VOC releases from the evaporation tanks are a concern, this evolving technology should be considered for appropriate applications at the GSX facility.

A discussion of UV oxidation has been added to page 7-13 of the Revised Draft EIR.

259. In order to collect VOC vapors from the evaporation tanks, a weak, one-stage distillation system would have to be created. However, this type of system would operate poorly with the low concentrations expected from the evaporation tank. Therefore, such an alternative would not be an effective addition to the treatment processes.

260. The ultimate control of the amount of volatile organics in this plant is by manual means. The plant feed is reviewed for waste type and waste composition. A treatment strategy is formulated. A sample of the waste is pilot-tested in bench-scale equipment to determine the stability of the resulting solids, volatile organic and volatile halogenated species in the resulting water, and volatile organic and halogenated species in the resulting vapors. The waste, if accepted for treatment, is run alone through the equipment for run lengths greater than 10 hours.

The redox section is used only for aqueous feeds whose dissolved solids are not easily stabilized in the pug mill or can be rendered less toxic by change in oxidation state (e.g. hexavalent chromium) but are amenable to aqueous-phase chemical modification or precipitation. The treated water leaving the redox section, if determined through pilot tests or during redox operations by grab samples and/or online monitoring to have excessive volatile species, will be directed to the carbon or combustion controlled steam stripper prior to evaporation. The exact type of instrument, whether laboratory-based or online and continuous has not yet been determined, but will be defined during final design.

261. The requested statement has been added to page 2-23 of the Revised Draft EIR, distributed as Volume II of the FEIR.

262. Waste gases are expected to amount to less than 10 percent of the heat value of the fuel required in the steam generators. The primary mechanisms of control of products of incomplete combustion 'are introduction of the waste gases into turbulent, hot, and oxidizing (proper oxygen concentration) conditions. Gases containing excessive sulfur, halogens, etc. will be directed to condensation/adsorption.

Details of the monitoring system to verify the destruction performance of the boiler firebox will be developed with Imperial County APCD in the permitting process. Possible measures include periodic source testing, fuel monitoring, flue gas monitoring, or temperature monitoring.

263. It is expected that geothermal wastes will be transported via trucks in steel roll-off bins that are covered with a tarp. Because the wastes will be covered, fugitive dust during transport was not identified as a potential hazard to the public. Therefore, it would not be appropriate to include covering the trucks as a mitigation measure for 'the facility. However, text describing the expected transport conditions for geothermal wastes arriving at the GSX facility has been added to page 3-213 of the Revised Draft EIR.

264. It is acknowledged that during the transport of hazardous wastes, or even common materials such as gasoline, there is an unlikely possibility of an accident with consequences that are difficult to predict. Such an incident would be outside the control of the facility. The original response to this comment from DHS in the letter dated October 3, 1990 (see response to comment 4) has been modified to include a discussion of this possibility, and appropriate text has been added to Sections 3.7.2.6 (Accident Potential/Safety) and 6 (Significant Adverse Environmental Impacts which Cannot Be Avoided If the Project Is Implemented) of the Revised Draft EIR.

265. As stated in response to Comment 9, the summary table notes that significant air quality impacts would result from the emission of NO_x and reactive hydrocarbons. Emissions of these compounds and other pollutants are generated by several sources in the proposed facility, as summarized in Table 3-30 of the DEIR, including the hazardous waste unit, various landfills, steam generator, fugitive vapors, onsite trucks, and delivery trucks.

Impacts of these emissions are discussed in Section 3.6.2.2 (Effects on Ambient Pollutant levels) in the DEIR. Reactive hydrocarbons, which are VOCs, are noted as precursors which will have the potential to contribute to continued exceedances of the l-hour California and federal standards. VOCs are also discussed in terms of odor impacts. Combustion products from the steam generator are tabulated specifically in Table 3-30. The potential for adverse health effects from the toxic air contaminants emission's, including VOCs, is addressed in Section 3.9. The summary table is not the appropriate place to discuss all these impacts in detail. Interested readers should refer to the air quality section.

266. See response to comment 263 in this letter.

267. As noted in response to comment 11, Imperial County Planning Department is the CEQA lead agency for the project, not EHS. However, it is acknowledged the language that "EHS is the final permitting agency for the facility" could be misleading since several other permits are required, including those from DHS and EPA. This language has been corrected in the Revised Draft EIR (see page l-3).

268. The Hazardous Waste Stabilization Unit solids receiving pad will be concrete lined. This note has been added to page 2-21 of the Revised Draft EIR. The pad is planned to be open. When winds exceed 13 mph, dust control measures would be instituted; these include sealing the waste piles with foam and misting while unloading. There will be a curb around the area, as noted on page 2-21 of the Revised Draft EIR. All operations would be shut down when winds reach 21 mph. See also the response to comments 16 and 35.

269. The description in response to this comment (see also comment 17) has been added to page 2-21 of the Revised Draft EIR.

270. The description in response to this comment (see also comment 18) has been added to page 2-22 of the Revised Draft EIR.

271. The capacity of the evaporation tanks requested in this comment (see also comment 19) has been added to page 2-22 of the Revised Draft EIR. The primary means of control of the non-water volatiles evaporated in the evaporation tanks will be feed screening, pilot-simulation of the behavior of each batch prior to treatment, and individual batch-wise operation. The screening of the plant feeds prior to entry into the plant, which consists of checking the waste description, generator's operations, and the waste's laboratory analysis, might lead to diversion of the waste elsewhere (refusal to treat) or repackaging in the liquid bulking area for export to a specialized treatment facility. If the waste is accepted for treatment, the yields of volatile species in the resulting water will be determined in a pilot simulation. The results of this simulation will be to determine, for example, whether the water can go directly to evaporation, or whether it should be steam stripped first. Finally when the waste is actually treated, the process will be monitored, either periodically or continuously, by a method to be determined during final design. The waste will be fed alone, and the run lengths will be 10 hours to a number of days. If, for example, during actual treatment, VOC concentrations in the resulting water destined for evaporation turn out to be unacceptably high, higher than previously expected from the pilot simulation, then the water will be stored and stripped.

To summarize, limitation of the amount of non-water volatiles evaporated in the evaporation tanks will be done via document review of generator's characterization of the feed, review of generator's chemical analysis of the feed, review of the analytical results from the pilot simulation of the treatment of the feed, and finally review of grab-sample or on-line analysis during treatment. The exact type of instrument, whether laboratory based or online and continuous has not yet been determined, but will be defined during final design. A note that either in-line or batch monitoring equipment will be selected during final design has been added to page 2-22 of the Revised Draft EIR.

272. The description in response to this comment (see also comment 20) has been added to page 2-22 of the Revised Draft EIR.

273. Additional description of the VOC stripper system has been added to page 2-24 of the Revised Draft EIR.

274. The text requested in this comment has been added to page 2-23 of the Revised Draft EIR.

275. The text in response to this comment (see also comment 23) has been added to page 2-23 of the Revised Draft EIR. The plant will be operated batch-wise, one-feed-at-a-time, for a period of from 10 hours to days on each batch. Before any waste is introduced into the process it will have been run through a bench scale treatment simulator to determine among other things, the quantity and composition of the vapors generated during treatment. This will be done in a laboratory with mostly grab-sample analyses.. The results of the simulation, plus the results of periodic grab samples during full-scale treatment will determine which treatment strategy will be used, or whether a treatment strategy should be modified or abandoned.

For the vapor species generated from the storage tanks, reactors and stripper overhead, the preferred method of disposal is combustion as a minor addition to the combustion air for the steam boiler firebox. The steam boilers are not designed per se to handle highly halogenated gaseous fuels. Volatile halogenated organics entering the boiler firebox in incidental amounts will probably be converted into carbon dioxide, water vapor, and hydrogen chloride.

The suitability of combustion of the organic-laden vapors from the plant will be a case-by-case decision based on the results of the pilot simulation and grab sample or continuous analysis during the full-scale treatment of the waste. The criteria for diverting the vapors away from the firebox and toward the condensation/adsorption unit will be developed in coordination with the boiler vendor and Imperial County APCD during the permitting process. Whatever number or criterion is chosen, the halogen concentration of the waste gases burned for each batch will be monitored, recorded, and the performance of the boiler verified by occasional source test. The type of instrument, whether laboratory-based or online and continuous, and the frequency or nature of performance verification have not been determined yet, but will be in the Authority-to-Construct process with Imperial County APCD.

276. The text requested in this comment (see also comment 24) has been added to page 2-24 of the Revised Draft EIR.

277. The text requested in this comment (see also comment 25) has been added to page 2-25 of the Revised Draft EIR.

278. The text requested in this comment (see also comment 26) has been added to page 2-25 of the Revised Draft EIR.

279. A detailed description of the sampling and checking procedures appears in Section 3.3.4 of the Waste Analysis Plan, which is in the RCRA Part B Permit application. This document was incorporated by reference into the Draft EIR. The Waste Analysis Plan has been included in this FEIR, see Appendix B. Text referencing the Waste Analysis Plan has been added to page 2-27 of the Revised Draft EIR. Response to comment 28 has been corrected to note that waste verification analysis (fingerprint analysis) will be conducted on a minimum of 10 percent of the total drums or containers in a multiple drum or container shipment. If the total number of containers is less than 10, at least one drum will be sampled, as discussed in Section 3.3.4 of the Waste Analysis Plan.

280. The text discussed in response to this comment (see also comment 29) has been added to page 2-27 of the Revised Draft EIR.

281. The text requested in this comment (see also comment 31) has been added to page 2-40 of the Revised Draft EIR.

282. The text discussed in response to this comment (see also comment 33) has been added to page 2-65 of the Revised Draft EIR.

283. Comment noted.

284. See response to comment 264 in this letter.

285. A table listing existing and proposed tanks for the facility follows response to comment 43.

State of California

MEMORANDUM

To : Mr. Jurg Heuberger
Director
Imperial County Planning Department
939 Main Street
El Centro, CA 92243-2856

Date : December 12, 1990

From : Genevieve Shiroma, Chief
Toxic Air Contaminant
Identification Branch
Air Resources Board

Subject : Draft Final Environmental Impact Report for the Expansion of a Hazardous and Non-Hazardous Waste Treatment Storage and Disposal Facility in Imperial County Proposed by GSX Services. SCH# 9001008

We have reviewed the "draft final environmental impact report" (DFEIR) for the proposed expansion of the GSX treatment storage and disposal facility (TSDF). We have found some of the responses to our original comments inadequate and therefore, in this memorandum, we reiterate and elaborate on our concerns. Technical comments are enclosed. My staff have discussed our comments with Mr. Gaspar Torres of the Imperial County Air Pollution Control District (APCD), Mr. Joe Zarnoch of the Department of Health Services (DHS), Mr. Danny Shaw of Laidlaw Environmental Services, and Ms. Shari Libicki of Environ.

Thank you for the opportunity to provide written comments on the DFEIR. We are available for further discussion. If you have any questions or if we can be of further assistance, please contact me at (916) 322-7072.

Enclosure

cc. Stephen Birdsall, APCO, Imperial County APCD
Gaspar Torres, Imperial County APCD
Joe Zarnoch, DHS, Region IV
Lawrence Jackson, DHS, Headquarters
Janette Brooks, ARB

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IMPERIAL COUNTY
PLANNING DEPARTMENT

Enclosure

TECHNICAL COMMENTS

1. **Mitigation of Criteria Pollutants (DFEIR #44)**

286 The proposed mitigation for PM_{10}, NO_x and HCs emissions in the DFEIR should be expanded. The discussion should include the options for mitigation which may be under review during Air Pollution Control District (APCD) permit processing.

The discussion of PM_{10} emissions should indicate if all-possible sources were considered. This includes soil and waste spillage onto roadways and subsequent dispersion; and disposing of waste, which will not go through pretreatment, at the Class 1 landfill. Mitigation of PM_{10} should also consider the use of catalytic trap-oxidizer systems on diesel engines.

Additional possible mitigation measures for HCs include enclosure of the hopper, pug mill and waste curing piles areas (during initial high emission period), with negative pressure ventilation of emissions to air pollution control devices. The use of UV/oxidation for the treatment of waste water could present a next-to-no emissions alternative to some of the technologies proposed to-date. The use of low benzene fuels in diesel engines should also be considered.

There should be a comprehensive discussion of all possible measures to reduce NO, emissions including:

- o implementation of NO, control on other generator sources in Imperial County;
- o operational measures to reduce emissions such as limiting engine idling to no more than five minutes;
- o use of turbocharged and intercooled diesel engines;
- o and use of newer model low emission diesel engines.

2. Air Quality Monitoring Plan **(DFEIR #45)**

287 The air quality monitoring plan need not be delayed until one year's worth of on-site meteorological data has been collected. Meteorological data from another proximate location, such as the local military base, should be used for preliminary analysis of local annual average and seasonal changes in meteorology. On-site meteorological data must be used to refine preliminary findings. For the purpose of public information in the FEIR, the air quality monitoring plan should be reasonably substantive. However, the plan may be made more stringent and comprehensive during the course of DHS and APCD permit processing.

3. **Analytical Laboratory Capabilities (DFEIR # 46)**

In addition to the laboratory analyses described in the Part B, Department of Health Services' (DHS) Resource Conservation Recovery Act (RCRA) permit application, the laboratory should have optimal capabilities to measure parameters that would be used to monitor and
288 regulate process flows as quantitatively described in the permit applications. Process flow conditions and therefore monitoring may be applicable to more than one permit. To augment process control and for general waste characterization, the laboratory should have the following additional analytical capabilities:

a) Total organic carbon (TOC) and total organic halide (TOX) for monitoring waste water and vapor and streams associated with the steam incinerator, carbon adsorption unit and evaporation tank areas. Monitoring of these streams is appropriate in order to stay within the concentration specifications as described in permit applications and possible permit conditions. TOC and TOX analyses should be used to augment specie specific analyses.

b) Broader semi-volatile analytical capabilities by gas chromatography for waste stream analysis since the waste code specifications may allow other compounds than those covered by the methods listed in the Part B application;

c) Gas chromatography/mass spectroscopy (GCIMS) for screening identification of unknown (and/or quantitation of known) organic substances which are present in significant concentrations but cannot be identified and/or quantitated by standard GC methods and;

d) All incoming waste oils must be screened for polychlorinated biphenyls **(PCBs).** Since Aroclors in hazardous waste can often be heavily weathered, in addition to **commercial** Aroclor standard comparison, total chlorinated biphenyls should be quantitated and used as a criterion for waste acceptance or rejection.

4. **Waste Stream Characterization (DFEIR #47)**

In the analysis of any database, the objective of quality control (QC) is to assess rather than guarantee accuracy and precision of the information. From the QC on the DHS 1985 generators' database, the
289 University of California at Davis (UCD) authors identified several limitations in the survey information. These limitations are described in their report **"Toxics** Reduction Analysis Project" (TRAP), April 1988. The limitations of the 1985 survey information are:

a) The survey response rate was estimated to be only 12.5%; UCD authors could not distinguish what portion of the remaining

87.5% of generators fell into the less than 2 tons per annum exclusion category or the group of non-respondees.

b) A comparison between the manifest database (Hazardous Waste Information System - HWIS) and the TRAP database showed a 50% discrepancy in waste sent to **TSDFs** (1.8 million tons versus 1.18 million tons, respectively).

c) For each generator, the survey form did not distinguish between manifested and non-manifested waste streams. Therefore, a database user, including Environ, could not distinguish from the record between waste which were treated **onsite,** waste disposed of to a publicly owned treatment works or waste sent to a TSDF. Therefore, Environ's characterization of TSDF waste may be biased low because it included waste which would not be disposed of **offsite** at a TSDF.

These limitations in the quality of the 1985 survey data constitute sources of error when transferred to calculated emissions and risk. Therefore, the data needs to be adjusted to reflect an acceptable level of confidence.

We reiterate that current information needs to be incorporated. At a minimum, a comparison between the 1987 and 1985 databases should be made. The comparison should include a succinct description of procedures used to prepare the 1985 database for this particular application and conclusions of the comparison must be supported with data.

5. **Extrapolation of Survey Data and level of Error (DFEIR #48).**

290 The level of error in estimating emissions from generator surveys should be estimated since real data from streams accepted at an existing similar TSDF were not used. The waste stream composition data should be adjusted to reflect an acceptable level of confidence and be used to update emissions and risk assessment.

While extrapolation of data from a small (12.5%) known field to a large (87.5%) unknown field is permissible, Environ should utilize a more rigorous procedure than apply simple linear proportion to a set of proportionate data because proportionate data is usually non-gaussian in nature. Guidance on appropriate treatment of survey data can be found in texts on statistics such as "Sampling Techniques" by Cochran, 1977, published by Wiley and in "Principles and Procedures of Statistics" by Steel and Torrie, 1960, published by McGraw Hill.

6. **Vapor and Particulate Suppresant Foam (DFEIR # 49).**

29 Our original **comment** asked for a comparison between the conditions of the 29 Palms and **McColl** studies versus anticipated facility operating conditions. Significant parameters were missed.

In the 29 Palms study, for "stabilized foam", 99% efficiency was obtained on a flat surface, whereas 90% (an order of magnitude less) was obtained on a sloped surface **(2:1).** Permit applications describe the working face of the landfill as being equally sloped **2:1.** For the sloped surface, the 90% efficiency should be taken for a first cut estimate of efficiency for the landfill. Rather than idealized test data, best engineering judgement should be used to estimate an efficiency for the basis of emissions estimates at the landfill. The estimate must be supported by data and a description of the analysis. This estimate should also be addressed in permit conditions.

Both the **McColl** study on acidic wastes and 3M Corporation's (3M) own laboratory studies suggest that stabilized and temporary foams are not likely to perform well on untreated waste because untreated waste could be acidic, basic, corrosive, reactive, etc. The permit applications propose the use of this kind of foam on untreated solid waste piles, while awaiting entry into the solids treatment unit. While all incoming wastes may not be as aggressive as **McColl** wastes, they will clearly not be benign. Since field data on various waste types is limited, the results of the **McColl** study may be the only available and applicable field data on which to estimate emissions control efficiencies for untreated waste. Additional consultation with foam manufacturers may be required in order to arrive at best engineering judgement on control efficiency at the waste piles. Clearly, 99% is not appropriate for all waste types.

On the basis of expected holding periods and manufacturer recommendation, permits must specify whether stabilized or temporary foam will be used on the untreated waste piles and landfills.

In addition to the issue of control efficiency values, it is recommended that GSX prepare a standard operating procedure (SOP) for the proper preparation and use of foam and train staff in its use with the assistance of manufacturer technical personnel. 3M provided some guidance information to us in a letter on October 10, 1990, on which GSX was copied; this information should be used in the SOP. It is **recommended** that only potable water be used for all foam preparation. It is also recommended that an estimate of the annual amount of foam expected for use at the facility based on permit application descriptions, be prepared for permitting agencies and, permit conditions should require that logs of actual use be maintained for compliance.

7. <u>Alternative **Technologies (DFEIR #50)**</u>

All discussions of alternative technologies should use available actual test data about subject technologies in use either at the pilot or full operational stages. This would apply to the discussion of
292 0 incineration and with respect to treatment of waste water, to UV/oxidation as an alternative to the carbon adsorption and evaporation tank units. We **recommend** a thorough review and study of UV/oxidation based on actual test data from facilities and manufacturers of the

technology. UV/oxidation could represent a next-to-no emissions alternative to some areas of waste water treatment.

8.' **Existing Facility Emissions (DFEIR #51)**

The FEIR must clarify whether the existing facility will be incorporated into the design and operation of the proposed facility. If the existing facility is to be incorporated, then emissions must be calculated on the basis of the proposed operation. If the existing facility is expected to operate unchanged, or under an existing permit,
293 then the incremental difference in emissions must be addressed in the. risk assessment.

The assumption that the risks from the existing facility would be less than that calculated for the Class I landfill of the Master Plan is unrefined. It is **recommended** that emissions estimates **endeavor** to be accurate and that all emission sources with risks in the 10^{-7} range be included in sumation of risk. Actual testing data from the existing and similar facilities represent best available information and should be used.

9. **Criteria Pollutant Modeling**

There are several **comments** on the criteria pollutant modeling. Adequate response to the **comments** may require further calculations. The review consisted of evaluating 1) appropriateness of model selection, 2) proper model application to assess project and cumulative impacts, 3) input data to represent worst-case conditions, and 4) adequacy of documentation. The following sumarizes the comments:

294

a) Although Environ did not use the most current version of ISCST, 88348, the justification presented in their September 12, 1990, response to Imperial County Air Pollution Control District's **comments** is satisfactory.

b) Environ used meteorological data from Yuma, Arizona in the dispersion modeling. Although Yuma maybe the nearest site of available data, it may not be the most representative. Environ should justify that the Yuma data is the most representative of all the available data of the meteorological conditions found at the site.

c) In the analysis, Environ placed receptors approximately 150 meters from the property boundary. Environ should justify that the maximum impacts from the facility do not occur between the property boundary and 150 meters, or that the public does not have access to this area.

d) Environ placed receptors around the facility with spacing between each receptor of approximately 750 or greater meters. Environ should justify that this spacing of receptors is dense enough to delineate the maximum impact from the facility.

e) Finally, Environ compares concentrations resulting from criteria pollutant emissions to the State and Federal standards. If dispersion modeling results are to be compared to the standards, then background concentrations must be added to the modeled concentrations. If ambient monitored background data is to be used, the ARB recommends using three years of the most recent representative data. To the extent possible, the three years of data should correspond to the period of meteorological data used in the simulations. If Environ proposes to model background levels, then discussion of other nearby sources and potential plume overlap needs to be provided.

10. **Compounds of Concern (DFEIR # 52)**

It has been verified with Environ and Clement Associates that for chronic cancer risk assessment, at the outset of emissions calculation, the list of chemicals under study was delineated. Nickel, arsenic, mercury, beryllium, trichloroethylene, perchloroethylene, chloroform and 1,4-dioxane were excluded from quantitation. Therefore, the
295 response that "..the total annual quantities (of these substances) were considered to be too low.." is unsubstantiated. The 1985 TRAP report shows nickel, arsenic and perchloroethylene as being among the most abundant toxic substances found in hazardous waste in California, which is strong justification to include these substances for estimating emissions and health risk in all scenarios for the FEIR.

11. **Acute and Chronic Non-Cancer Risk**

We recommend that acute, non-cancer health risk be assessed based on worst case, maximum hourly emissions. Worst case waste characterization should use the highest concentrations of toxic substances found in waste in the 1987 database which are available from
296 DHS. Both acute and chronic risk should be assessed using the California Air Pollution Control Officers (CAPCOA) manual "Air Toxics Hot Spots Program Risk Assessment Guidelines", July 1998. The FEIR should estimate any differences in chronic non-cancer risk as calculated compared to the methods described in the CAPCOA manual.

12. **Multipathway Exposure (DFEIR #53)**

The relative significance of multipathway exposure must be
297 substantiated with supporting data. We reiterate that the CAPCOA risk assessment guideline document be used.

13. Risk Factors **(DFEIR #** 54)

We reiterate that current CAPCDA unit risk factors (and modeling guidelines) need to be used. The use of a 0.3 modeling factor instead
298 of 0.1 is generally inconsistent with CAPCOA modeling guidelines (see **comment #16** f below) and is not a satisfactory justification for using unit risk factors lower than current CAPCOA values.

14. **Chronic Cancer Risk Assessment Modeling (DFEIR #54)**

We have several further comments on the risk assessment modeling. Adequate response to the **comments** may require additional calculations. The review consisted of evaluating 1) appropriateness of model selection, 2) proper model application to assess project and cumulative impacts, 3) **imput** data to represent worst-case conditions, and 4) adequacy of documentation. The following sununarizes the comments.

299

a) The Imperial Valley facility contains both area and point sources. However, Clement modeled these sources separately. If these sources emit pollutants in **common,** then the consultant should have used a multiple source model such as . ISCST in order to address the issue of potential plume overlap.

b) Clement calculated concentrations for two receptors. It is impossible to determine a priori which receptors will experience the maximum impact. The consultant should model for all those areas to which the public has access. The receptor field in those areas should be dense enough to delineate the maximum impact.

c) The risk assessment document did not identify as included in calculations, significant sources of emissions such as the vibrating grizzly, pug mill and curing pile areas. The document states that for risk assessment due to the entire hazardous waste treatment area, Environ provided Clement emission rates from the liquids bulking, the lab pack/small quantity generator rebulking, the liquid separator, the sludge separator, and the oxidizing/reduction sub-areas only. It is **recommended** that the risk assessment include all areas and provide documentation to this effect.

d) For the treatment area emission sources included, Clement combined them into a single area source. Can all sources be described as area sources? Further, Clement must justify that combing all sources into one source will not bias the calculations toward under-estimation of the actual concentration.

e) Clement used a D stability when modeling the sources. Clement must justify that assuming a D stability as the worst case stability will not bias the calculations toward under-estimation of the actual concentrations.

f) Clement used an annual average wind speed and assumed that the wind direction was toward the receptors for 30 percent of the time in order to estimate the annual average concentration. Clement must justify that this methodology will not bias the calculations toward under-estimation of the actual concentrations. The methodology recommended by the California Air Pollution Control Officers Association's "Air Toxics Assessment Manual" (1987) is to assume a worst case 1-hour average wind speed, and use a 0.1 factor to determine an annual average concentration.

g) Clement ignored stack tip downwash, a regulatory default option. Clement should justify that this assumption will not bias the calculations toward under-estimation of the actual concentrations.

h) Clement assumed a wind speed of 60 mph in the air dispersion of asbestos analysis. Clement should justify that this assumption will not bias the calculations toward under-estimation of the actual concentrations.

i) Clement stated that the Gaussian dispersion model cannot be used to determine the ambient concentrations within 30 feet of the edge of the tanker spill. This is not the case. The "Industrial Source Complex (ISC) Dispersion Model User's Guide-Second Edition (Revised), Volume I" states:

> "It is recommended that, if the separation between an area source and a receptor is less than the side of the area source x_o, the area source be subdivided into smaller area sources. If the source-receptor separation is less than x_o, the ISC Model tends to overpredict the area source concentration. The degree of overprediction is a function of stability, the orientation of the receptor with respect to the area source and the mean wind direction. However, the degree of over-prediction near the area source rarely exceeds 30 percent."

Thus, the over-prediction of the concentrations can be minimized by subdividing the pool, and the bias toward over-prediction of the concentrations maximizes the protection to the public.

We ordinarily encourage applicants to prepare a written modeling protocol at the beginning of the risk assessment process, and submit it to the appropriate regulatory agencies for review and approval. This can help keep misunderstandings to a minimum and reduce the need for additional analyses.

15. **Use of Current Information**

Interpretation of the California Environmental Quality Act implies that current information be incorporated into the final EIR document (e.g. see Section 15162 (a)(3) of Title 14 of the California Code of Regulations). Since permit applications were used as references for the DFEIR, the requirement for currently available information extends to permit applications and processing.

300 The need for up-to-date information suggests that all estimates of emission rates and risk assessment be up-dated, at least by comparison, using currently available information sources. This need would apply at least to:

a) waste characterization using the DHS generator's hazardous waste database - compare 1987 to 1985;

b) estimates of emissions and risk which must use EPA emission rate formulae - for "Hazardous Waste TSDF Air Emission Models" compare November 1989 to 1987 manual and; for "Hazardous Waste TSDF - Background Information for Proposed RCRA Air Emission Standards" compare February 1990 to 1985 manual;

c) inclusion of all substances for the risk assessment which are known carcinogens or toxic and hazardous substances as currently identified by the U.S. EPA, DHS and/or the CAPCOA and;

d) use of the CAPCOA manuals "Air Toxics Hot Spots Program Risk Assessment, July 1990."

16. **Lab-Pack Area/Changes to Operational Plan**

301 In response to our request to recalculate emissions from lab-packs, by using composition data representative of lab-packs rather than the entire domain of generators, GSX indicated that lab-packs with organics will not be opened at the proposed facility. Specific proposed facility operation must be described and included in all appropriate permit applications and mentioned in the FEIR.

Air Resources Board District, supplemental comment letter

286. The text in Section 3.6.3 of the Revised Draft EIR has been modified to incorporate information regarding offsets. PM_{10} estimates were limited to onsite activities. Additional discussion of possible mitigation measures is presented below.

Mitigation of PM-10 with Catalytic Tran-Oxidizer: The emissions rate for particulate matter from onsite truck traffic is 200 lb/d out of a plant total of 300 lb/d. Grading operations at the landfills represents another 65 lb/d. However only about 20 lb/d of this particulate matter is as soot or smoke, the rest is dirt kicked up by the wheels of the vehicles.

Catalylic trap/oxidizer systems are new control devices developed to reduce smoke emissions from mobile diesel engines. All previous add-on filters for smoke have been plagued by pluggage with soot or soil. The Catalytic Trap/Oxidizer oxidizes the trapped soot to carbon dioxide and water. It must be kept hot to be effective, and must be protected from poisons which render it useless. The devices were developed in response to California ARB's requirement for decrease smoke emissions from diesel-driven passenger vehicles starting with 1990 models.

Catalytic trap/oxidizers are not commonly available on new heavy duty equipment or trucks. Retrofit units for existing heavy duty equipment are also rare. The technology is relatively new and has not yet been proved reliable. Finally, if effective, it would have a small impact on particulate emissions in comparison to entrained road dust. The technology should be considered when reliable retrofit units become available.

Use of Low-benzene Diesel Fuel: According to information from the ATC application, benzene emissions from diesel fuel combustion represent 10 to 20 percent of total plant benzene emissions. Typical data from Chevron for presently available diesel indicates that probably more benzene is emitted from diesel engines than is present in the fuel to begin with. This suggests that the benzene emissions from diesel engines are not from volatilization and unoxidized escape of the trace benzene in the fuel, but instead from production of benzene when other large aromatics or polynuclear aromatics are combusted in the truck engine. If this is the case, reducing the benzene in the fuel probably will have minimal effect on benzene emissions.

Secondly, benzene (approximately 180°F normal boiling point) is present as a trace "contaminant" in diesel (initial boiling point approximately 400°F). Present levels are 20-100 ppmw. With added ARB restrictions on benzene content of motor fuels the levels will be reduced at the refineries in time. But it is doubtful that the refiners can hold or guarantee the trace levels to below 5 or 10 ppmw.

<u>NO_x Mitigation Measures</u>: Except for the steam boiler, all the NO_x emissions from the plant are from heavy duty internal combustion engine-driven equipment. Typical economic BACT for diesel engines would be turbo charging/after cooling plus 4' retardation of injection timing from the manufacturer's recommended (for direct injection engines only). Minimization of nitrogen oxide emissions from internal combustion engines can be done by the following methods:

1. Engine modifications
   Lower combustion temperature
   Lower compression ratio
   Lower excess air

2. Add-on control device
   Selective catalytic reduction

3. Lower NO_x fuel
   LPG
   Methanol

4. Alternate energy conversion
   Electrification

Engine modifications to reduce NO_x emissions can be done on existing engines or might require complete engine replacement. Most common modifications lower the combustion temperature by cooling the incoming air, cooling after the turbocharger ("aftercooling") or retarding the injection timing.

Adding turbochargers and aftercoolers typically increases the power output of a given engine.. Retarding the ignition timing typically lowers output, raises fuel consumption, and might aggravate smoking.

The addition of turbochargers is typically done to increase engine performance, not for NO_x control. Increasing turbocharger boost pressure generally increases the specific NO_x emissions, but cooling the boosted air reduces NO_x. Most engines are after-cooled with jacket cooling water. This allows cooling of the air to about 325°F. Cooling the compressed combustion air with ambient air (like the regular radiator) results in a larger cooler, but gets the combustion air temperature down to below 140°F and results in 150-200' cooler combustion temperatures and reduced NO_x emissions.

NO, control by add-on control devices: The state-of-the art low-NO_x diesel engine would have a turbocharger, air-to-air aftercooler, and an add-on selective catalytic reduction bed on the engine exhaust. This catalyst bed, unlike on gasoline engines, reduces nitric oxide to molecular nitrogen by reaction with ammonia in a catalyst bed which selectively speeds this reaction rather than allowing the thermodynamically favored oxidation of ammonia to NO. Besides the add-on catalyst bed, reagent ammonia vapor is required for this device. If the ammonia stoichiometry is wrong, unreacted ammonia will be released. Because of the added complexity of feeding ammonia in this system, selective catalytic reduction (SCR) is usually only used on large stationary engines, turbines, or boilers, which run at much more constant load than vehicle engines.

Lower NO_x fuel: Diesel engines are usually employed in heavy machinery because of the high energy density of diesel fuel and the higher thermodynamic efficiency of the diesel cycle, (as compared with the spark-ignition Otto cycle with gasoline fuel). The Otto cycle engines are cheaper, lighter, more responsive, and because of their more volatile fuel, lower residence time and less harsh combustion conditions (lower compression ratio), have much higher carbon monoxide (CO) and hydrocarbon (HC) emissions than diesels. However, their NO_x emissions are lower because they do not give the oxygen from the air enough energy to oxidize nitrogen to NO. Thus while gasoline has lower specific NO_x emissions, its much higher HC, CO, and benzene emissions make it a poor replacement (emissions-wise) for diesel.

LPG is much more expensive than diesel, it is typically used in spark ignition engines (having a lower thermodynamic efficiency than compression ignition), requires pressurized storage, is much less dense, compared with diesel, and has lower CO, NO_x, HC and particulate emissions. However, the cost and fuel consumption drawbacks make this alternative to diesel rare and undesirable. Natural gas is generally cheaper than diesel, cleaner, and can be used in compression-ignition (diesel cycle) engines, but has higher specific NOx emissions than diesel. Methanol is often mentioned as a substitute for diesel. It can be used interchangeably with diesel (in specially designed engines), has lower CO, HC and NO_x emissions, but is considerably more expensive and has a much lower energy density then diesels. It is not available in many places, and as mentioned above, requires a brand-new specially designed engine.

Alternate/Miscellaneous Means: GSX also has the option of using hard-wired electric or battery-powered vehicles. This shifts the energy conversion from onsite internal combustion torque' to offsite fossile steam electric-torque or geothermal steam electric torque. The disadvantages are the considerable capital cost to put in electrical lines to all the work places, the operating cost penalty of electric versus diesel fuel, and the added capital cost and share supply of heavy duty electric or battery) graders, loaders, and dump trucks.

GSX could also choose to reduce someone else's nitrogen oxide emissions (someone else whose emissions are more cheaply controlled than at GSX's plant). South Coast AQMD customary BACT costs for controlling NO_x were about $5/lb until 1987 (when they were raised to $12/lb reflecting increased pressure to require control on sources in that non-attainment area). Using this figure, GSX would be expected to spend 100 lb/d x 260 d/y x $5/lb = $130,000/y or more to clean up someone else's NOx emissions to partially offsite GSX's truck emissions. To do this most economically GSX should search for a large concentrated NOx source and apply, for example, increased water injection on a gas turbine, or aircooled aftercooler/4° retard on large stationary engines. Such sources are not easy to find, and control costs could rise to $10 or $20/lb.

GSX has presently proposed imported electric power for most of its plant, and conventional loaders, trucks and graders for remote areas (like at landfills throughout the state whether Los Angeles, Scaramento, or San Francisco Bay Area.) It is recommended that GSX investigate electrifying any loaders or other equipment in the plant which do not have to travel too far. This might save 20-

40 lb/d of NO_x from the loaders in the waste treatment units. That still leaves 100 lb/d from graders at the landfills and 100 lb/d from haul trucks.

For the graders at the landfills in remote temporary locations, GSX might consider using the newest factory low NO_x diesels (direct injection-turbocharged-air aftercooled-4° retard from optimum). Beyond this the alternatives examined above are quite expensive.

287. Comment noted. A substantive air monitoring plan is being prepared for circulation with the final EIR. The plan will use available onsite data as well as data from proximate locations for preliminary analysis. This plan will allow for modifications during DHS and APCD permit processing.

288. Comment noted. The following information supplements response to comment 46:

TOC and TOX analytical equipment, as required for process control, will be added to present laboratory equipment. If equipment required for appropriate analysis of materials is not available in the laboratory, then material will be sent offsite for analysis at a certified lab. The best analytical methods, as approved and required by appropriate agencies and specified in the facility's waste analysis plan (WAP), will be used (i.e., GC/MS).

All incoming wastes are currently screened for PCBs. PCB characterization will be required in the WAP for the expanded facility.

289. a) The survey response rate of 12.5 percent represents the fraction of generators of record that responded to the survey. The document that is cited in the comments goes on to explain that this represents approximately 25 percent of the 1985 hazardous waste generators in the state, and approximately 65 percent of the hazardous waste manifested.

b) Comment regarding the discrepancy in waste sent to TSDFs is noted. However, since the 1985 data base was used as a basis for estimating the percentage breakdown of waste types at a typical TSDF, rather than the quantity of total wastes to be received, it is not clear that this discrepancy has any significant effect on the validity of the conclusions drawn from the data for this EIR.

c) The 1985 database explicitly asked each responder to fill out one form for each waste stream, and to detail whether that stream was disposed offsite or onsite. Only the waste streams disposed offsite were included. The instructions for the form clearly state, "Do not report information for wastes that were recycled onsite or sewered." Therefore, no wastes disposed at a POTW would have been included in the Environ database, and the characterization of TSDF waste is accurate and not biased.

The analysis of air emissions in the Draft EIR was based on a 1985 data base made available in 1988, which characterized the physical and chemical nature of waste streams that could potentially be treated and disposed of at the GSX facility. A 1987 data base made available in late 1990 contains similar information but was not included in the air emission and risk analysis for the Draft EIR, which was distributed to the public in August 1990. Application of the 1987 data base could result in air emissions and risks that are higher or lower than those estimated for the Draft EIR. Therefore, as the permitting process continues for the facility, and as a check on the conclusions regarding potential impacts, a comparison of the two data bases would be useful.

A preliminary comparison of the 1985 and 1987 waste data bases and emission rates therefrom was conducted by Environ and coordinated with the Air Resources Board and Air Pollution Control District through meetings and correspondence. Results of the comparison are presented in the table below.

Ratio of 1987/1985	Ratio of Fractions Solids	Sludges	Liquids	Total Fractions
Benzene	0.27852793	0.45759 106	0.38845567	0.31162186
Carbon tetrachloride	0.00622319	0	1.98907502	0.70693435
Ethylene dibtomide	3.53081747	0	0.03712377	2.41438168
Ethylene dichloride	0		93.6421642	0.19517753
Ethylene oxide			--	
Formaldehyde	0.4935023;	0.396748;	0.04764585	0.1169608;
MeCL - Methylene chloride	0.09730634	0.44453449	1.65295345	0.62569359
PCDD	0	0	--	0
Asbestos			0	0
Cadmium	0.2936578:	5.1318982:	273.78939	2.70525785
Chromium	0.04206752	0.03390105	998.871808	6.30320572
Lead	2.73821488	57.752397 1	3.50222633	3.44570759

The preliminary comparison of data bases indicates that the 1987 data base had consistently higher metals content and the 1985 data base was generally higher in organics content. Also, the 1987 data base had higher fractions of the following materials: ethylene dichloride (liquids), carbon tetrachloride (liquids), ethylene dibromide (solids), and methylene chloride (liquids). Emission rates from the provisional 1987 data base, as well as the 1985 data base with certain additional compounds, were used in a risk analysis for this FEIR. Results of the risk analysis are summarized inresponses to comments 296 and 297.

290. As discussed in the response to comment 289, the 1985 UCD data base used to estimate the Imperial Valley Facility's waste stream characteristics and air emissions is believed to represent 25 percent of the California generators manifesting waste offsite and 65 percent of the total hazardous waste. Thus; the relevant extrapolation in terms of developing a model of average waste stream composition is from 65 percent to the remaining 35 percent of the waste for which no data are available. In the absence of more complete information, the reasonable assumption has been made that the generators and waste accounted for in the data base are representative of the total pool of California generators and waste in terms of average waste stream composition. Certainly, there is some error introduced by the simple linear extrapolation technique employed to obtain this average composition. There is additional error in assuming that the southern California average composition is completely representative of the wastes that will be received at the GSX Master Plan facility. It may be possible to estimate the error in the calculated average composition, by assuming that various waste types and substances are

normally distributed throughout the entire population of California TSDFs. However, this exercise would not address the additional error inherent in applying this average "model" to represent conditions at a specific facility.

The applicant has made an effort to develop estimates of its expected waste stream composition and the resulting emissions in order to address impact issues requiring quantitative data, such as the health risk assessment in Section 3.9. While errors are inevitably introduced by an attempt to rely on partial information, there was little choice in this case. It is believed that additional errors would result from more elaborate statistical treatments, since these could only be applied through the adoption of additional assumptions. Given the need for approximation in the analysis used to develop emissions data for the proposed facility, it is incumbent upon those preparing the corresponding health risk assessment to compensate for these uncertainties by means of conservative assumptions in the selection of other parameters to ensure that the facility's health risks are not underestimated. The reanalysis of the risk assessment in accordance with the July 1990 CAPCOA manual is discussed in response to comments 295 through 299.

Another means to compensate for errors which inevitably result from extrapolation is to provide a wide range of possible mitigation measures which can be implemented when actual monitoring results from the operating facility become available. Such measures include restrictions on the type of waste and amount of waste which can be accepted at the facility. Mitigation measures for potential impacts from criteria pollutants are discussed in response to comment 286. Mitigation measures related to potential impacts from cancer risk are discussed in response to comment 297.

291. Odor or vapor emissions from bulk solids or sludges will occur at the following areas of the GSX facility: feed solids/sludge storage areas, curing stabilized solids area, working face of landfills, and covered treated waste in landfills. The principal mechanism of reducing any off gassing of solids at the facility are the neutralization and pozzolanic stabilization processes. This dries and fixes volatile liquids which are the main sources of off gassing.

GSX proposes to use permanent soil cover at the landfills and foam at the exposed working face of the landfills during hours when landfilling is not being performed.

The combination of stabilization, soil cover, and temporary foam cover is Best Achievable Control Technology/Lowest Achievable Emission Rates (BACT/LAER) for air contaminants for this sort of source.

A further comparison between the conditions of the 29 Palms and McColl studies versus anticipated facility operating conditions, provided by Environ, follows:

Data on vapor and particulate suppressant foams yield a range of suppression efficiencies, ranging from 99.99 percent in experimental studies, to 90 percent for suppression of vapors from a 2:1 slope during one study performed by Radian at 29 Palms. In addition, the range of conditions under which the foam will perform will also vary. The literature provide by 3M states that strong acids and other water sensitive materials may require higher expansion foams or layered applications. The same literature also states that chemically basic substrates may cause a thin layer of unpolymerized foam to form above the surface, necessitating the use of extra foam. Neither statement alludes to decreased efficiency of the foam if it is used properly. If the foam is used properly, it can be expected to perform as measured in Radian's 29 Palms study.

The calculations for the suppression of vapors from the landfill were done assuming that 0.75 of an acre was unfoamed for ten hours, and that 10 acres of the landfill was under foam for 10 days, or until that portion of the landfill was recovered with additional waste. The sloped portion of the landfill known as the working face is that portion of the landfill that is uncovered by foam during working hours. It is a fraction of the 0.75 acre of working face. After a working day, the working face is foamed, and, for 14 hours, becomes part of the maximum 10 acres of foamed area. If the working face stretched the average length of a large landfill, 500 feet, and a 2-foot lift is used with a 2:1 ratio yielding 4.5 feet of sloped area per linear foot, only 2,250 square feet of area is exposed for 14 hours under less than optimum foaming conditions. If the foam in that area yielded 90 percent efficiency instead of 99 percent efficiency, as is found in the flat areas for the 29 Palms study, then the increase in VOC emissions over the entire 10 acres of the landfill due to the 2:1 slope can be estimated as follows. The emissions of material assuming that the entire 10 acres is flat, Q_{flat}, can be calculated from the emission rate prior to foaming, $E_{no\ foam}$, and that flat area, A_{flat}:

$$Q_{flat} = 0.01\, E_{no\ foam}\, A_{flat}$$

and the emissions from the sloped area, Q_{slope}, can be calculated from the emission rate prior to foaming and the sloped area, A_{slope}:

$$Q_{slope} = 0.1\, E_{no\ foam}\, A_{slope}$$

A_{flat} = 10 acres = 435,600 square feet

A_{slope} = 2,250 square feet

A_{slope} = 0.005 A_{flat}

and the total emissions can be calculated by adding the emissions from the flat area and the slope area:

$$Q_{combo} = 0.01\, E_{no\ foam}\, A_{flat} + 0.1\, E_{no\ foam}\, 0.005\, A_{flat}\, (14/24)$$

$$Q_{combo} = 0.0103\, E_{no\ foam}\, A_{flat}$$

Based on the above calculations, there would be an increase of 3 percent in emissions due to the sloping portion of the landfill.

In addition, the ATC states that foam will be used to suppress vapor emission from wastes that are being staged for stabilization. The ATC used the conservative assumption that all wastes would be staged for at least 5 days. Wastes may be staged for varying lengths of time. The waste staging area will be 10 feet below the truck traffic level (ATC, page 3-8). The calculations for the staging area were done with the conservative assumption that the wastes would be staged only 6 feet in depth. Deeper staging of wastes would decrease emissions per mass of staged wastes. As is stated above, measured foam efficiencies range from 99.99 percent to 90 percent. Storage time for stage wastes can vary from no time to 15 days, based on storage capacity of the staging area. Therefore, the calculations were done to yield a maximum probable emissions rate, but the emissions from the staging area can vary depending on conditions. Onsite montioring during operations will clearly be an important part of permit enforcement due to the uncertainties in actual performance of the foam and variation in operating conditions.

The recommendations in the last two paragraphs of this comment are noted. Stabilized or temporary foam will be used according to manufacturer's specifications. Potable water will be used in foam preparation. The facility trains operators and has a SOP for foam application, and keeps daily logs of foam applications. The recommendations given should be incorporated into the appropriate permit conditions for the facility.

292. Section 15126 of the CEQA Guidelines discusses various subjects that must be addressed in an EIR, including alternatives to the proposed action. The guidelines state that this section should "describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project....". The guidelines also state that "significant effects which would be caused by the choice of an alternative would need to be discussed to the extent that the effects are different from the project as proposed. This discussion, however, could be provided in less detail than the discussion of the significant effects of the proposal." Therefore, presentation of actual test data for alternative technologies and a detailed analysis is not necessary foi Section 7.4 of the DEIR. Discussion of UV oxidation as an alternative to steam stripping for treatment of organics in clear liquid has been added to Section 7.4 of the Revised Draft EIR. See response to comment 258 for further discussion of UV oxidation.

293. The existing Class I landfill will be operated under the new permits, after the new permits are approved. Therefore, all emissions listed under the proposed expansion incorporate current emissions. Thus, the emissions listed in the DEIR as current emissions represent current emissions, and the emissions listed in the DEIR as emissions for the proposed facility represent total facility emissions under the proposed expansion. This delineation is consistent with page l-l of the DEIR, which states, "This EIR addresses potential impacts associated with the construction and operation of proposed project development, as well as the continued operation of existing developments."

Comment 51 noted that the risk assessment did not consider potential risk due to organics at the existing facility. This comment is apparently correct, although input from Clement, who conducted the risk assessment, could not be obtained for the FEIR. However, risks due to organics can be developed from data presented in Tables 6-1 and 6-3 of the Final Risk Assessment for the Imperial Valley Facility by Clement Associates Inc., dated November 20, 1990. The excess upperbound lifetime cancer risk associated with inorganic emissions from the existing Class I landfill (LC-1) was calculated to be 8 x 10^{-8} (Table 6-l). It can be reasonably assumed that organic emissions from the existing landfill are less than emissions estimated for the proposed landfill. Table 6-3 of the Final Risk Assessment lists excess upperbound lifetime cancer risks for the proposed Class I landfills. The contribution of organic substances to the projected cancer risk for this facility is 2.2 x 10^{-7}. The total cancer risk from the existing Class I landfill can be conservatively estimated as the sum of the above risks (8 x 10^{-8} + 2.2 x 10^{-7}), or 3.0 x 10^{-7}, which is less than significant. Although this approach may not be refined, it represents a worst-case assessment of current risks.

294. (a) Comment noted.

(b) The Imperial County APCD recommended that Yuma meteorological data be used for the modeling presented in the Authority to Construct permit.

(c,d) The modeling for criteria pollutants has been redone to address the commenter's concerns with respect to receptor location and spacing. In particular, receptors were placed along the facility boundaries, since maximum offsite impacts would be expected in the near field with the preponderance of ground-level emission sources at the Imperial Valley facility. As recommended by a representative of the ARB Modeling Branch staff, receptors were placed at 100 meter intervals along the northern and western facility boundaries.

(e) As stated in the subsection on operational impacts in Section 3.6.2.2 of the DEIR, ozone precursor emissions from the project will have the potential to contribute to continued exceedances of the l-hour California and federal ozone standards. No photochemical modeling was conducted to quantify the extent of such violations, nor was such an analysis needed to ascertain the significance of the impact. The maximum hourly ozone concentration recorded in El Centro (the nearest station monitoring ozone) during the period 1986-1988 was 0.12 ppm, which is equal to the federal standard and exceeds the California standard. Whatever the incremental contribution of the proposed facility's NO, and reactive hydrocarbon emissions may be, it will be superimposed on this baseline level and, therefore, will constitute a significant impact.

The incremental effect of the proposed project's emissions on ambient levels of PM_{10} was modeled, with the maximum annual and 24-hour concentrations estimated at 5.3 $\mu g/m^3$ and 37.1 $\mu g/m^3$, respectively. A worst-case approximation of the effects of these increments on total PM_{10} concentrations can be obtained by adding these values to the highest recorded values at the APCD's Brawley monitoring station. The highest measured 24-hour PM_{10} concentration at this station during each of the last 3 years for which data are available (1986-1988) were 148 191 and 368 $\mu g/m^3$. The annual average concentrations during this time frame ranged from 47.4 to 52.0 $\mu g/m^3$. Thus in some years, the baseline PM_{10} near the site are above both the 24-hour and annual federal standards, and are well above the corresponding California standards. Section 3.6.2.2 clearly states that the project's contribution to ambient PM_{10} levels will be significant and may result in additional exceedances of applicable standards.

295. It was initially assumed in the response to comment 52 that Clement used some rationale for eliminating the chemicals mentioned. However, this does not appear to be the case. The estimation of emissions for nickel, arsenic, mercury, trichloroethylene, perchloroethylene, and chloroform have been calculated by Environ for the FEIR under guidance of ARB staff. A compilation of the components in the 1985 database that was used shows that only a very small quantity, nine tons, of dioxane was disposed. This amounts to less than 0.000762 percent of the wastes. The same compilation shows that less than 0.01 tons of beryllium are listed as being disposed of in 1985. Therefore, based on the compilation of the data, calculation of the emissions of dioxane and beryllium was not considered necessary. Estimated emissions for the toxic substances that have been added to the analysis are:

- Nickel 0.00679 $\mu g/m^3$
- Arsenic 0.000015 $\mu g/m^3$
- Mercury 0.000031 $\mu g/m^3$
- Trichloroethylene 1.19 $\mu g/m^3$
- Perchloroethylene 13.55 $\mu g/m^3$
- Chloroform 1.045 $\mu g/m^3$

296. Comment noted. Acute and chronic risks have been assessed for the FEIR using the CAPCOA manual "Air Toxics Hot Spots Program Risk Assessment Guidelines", July 1990. Concentrations derived from both the 1985 and the 1987 data bases were modeled. Results are discussed below.

The model used for this risk analysis is called Assessment of Chemical Exposure for AB 2588 (ACE2588), and was developed by Applied Modeling, Inc. (AMI) under guidance from air toxics staff of the Santa Barbara Air Pollution Control District. This model incorporates the algorithms and recommendations of the July 1990 CAPCOA AB 2588 Risk Assessment Guidelines. The ACE2588 model is designed for multipathway risk assessment and is capable of evaluating potential health risks from multiple pollutants (cancer and non-cancer) emitted from multiple sources located in a wide range of settings (flat or complex terrain, rural or urban, onshore or offshore). A paper describing the model in more detail is in Appendix F of this volume of the FEIR.

The emissions used in the analysis of risks for the FEIR were provided by Environ. The 1985 data base originally used by Clement for their risk assessment has been supplemented by emissions for the chemicals identified by ARB as missing (see comment 295). Emissions from the 1987 data base were not available at the time of Clement's analysis. The new risk assessment calculations conducted for the FEIR are based on preliminary emission rates from the more recent 1987 data base. More detailed analysis of emission rates will occur during processing of the Authority to Construct (ATC) permit application. It may be desirable to conduct additional risk assessment analyses incorporating new emissions and in accordance with the most up-to-date version of the CAPCOA guidelines, as these become available.

Printouts of each of the computer runs made for the risk analysis are available from Imperial County Planning Department. Results are summarized in this response and response to comment 297.

The predicted chronic hazard indices for the lemon grove and at Westmorland using the two data bases are listed below; values presented in the Draft Risk Assessment by Clement Associates are also shown.

Location	FEIR Chronic Hazard Index		Clement Chronic Hazard Index
	1985	1987	
Lemon Grove	1.73E-02	1.68E-02	1 SE-03
Westmorland	1.71E-04	2.63E-03	1 SE-04

The Clement values should only be compared to the results with the 1985 data base, since the 1987 data base has many more compounds and is still undergoing refinement. The results for the FEIR are all higher than the results obtained by Clement. However, all the hazard indices are less than 1, so the chronic risks from the facility would not be considered significant.

The predicted acute hazard indices for the lemon grove and at Westmorland using the two data bases are listed below; values are not available from the Draft Risk Assessment by Clement, since they conducted a screening type of catastrophic risk analysis instead of the acute type of analysis from routine operations in the CAPCOA manual.

Location	FEIR Acute Hazard Index	
	1985	1987
Lemon Grove	3.95E-02	3.95E-02
Westmorland	7.61E-03	7.40E-03

The acute hazard indices are all less than 1, so the acute risks from the facility would not be considered significant.

297 A multipathway exposure risk assessment has been prepared for the FEIR using the 1990 CAPCOA manual. The analysis of risk conducted for the FEIR includes the contribution of multipathway pollutants to the estimated cancer risk. For the 1985 data base, 6 multipathway pollutants were modeled: TCDD, arsenic, cadmium, hexavalent chromium, mercury, and lead. For the 1987 data base, the multipathway pollutants modeled were the six listed above plus beryllium and polycyclic aromatic hydrocarbons (PAH). For these pollutants, exposure and risk due to dermal absorption, soil ingestion, and mother's milk, in addition to inhalation, were evaluated in accordance with the July 1990 CAPCOA Guidelines using the ACE2588 model. Total predicted cancer risks at the lemon grove and

Westmorland for both data bases are listed below; values presented in the Draft Risk Assessment by Clement Associates are also shown.

location	FEIR Cancer Risk 1985	FEIR Cancer Risk 1987	Clement Cancer Risk
Lemon Grove	2.44E-06	6.74E-05	1.3E-06
Westmorland	3.56E-07	9.98E-06	1.3E-07

Comparing the results with the 1985 data base to Clement's values, the cancer risk at the lemon grove is twice as high with the FEIR modeling, and nearly three times as high at Westmorland, but still at the same order of magnitude. The results with the 1987 data base are roughly 50 to 75 times higher. It should be noted that the values from the FEIR risk analysis represent the high end of a possible range of risks. The FEIR risk analysis modeled the Class II landfill as having the same emissions as the Class I landfill, and modeled the non-hazardous waste stabilization unit as having the same emissions as the hazardous waste stabilization unit. These conservative assumptions were made due to the lack of specific data for the non-hazardous facilities, and will lead to much higher risks from chemicals associated strictly with hazardous wastes. Also, the assumptions made in estimating emissions from the provisional 1987 data base were very conservative (see Appendix G) and were only intended to provide an upper bound estimate of emissions pending further analysis. Refined analysis of emissions and risks during the continuing ATC review process will probably result in lower values.

The risks at the lemon grove predicted for the FEIR using the 1985 data base are above the threshold of 1E-06, so would be designated as significant. However, if accurate emissions were available for the non-hazardous components at the facility, the risks would be lower, although it is not known if they would drop below the level of 1E-06. The risks at Westmorland using the 1985 data base are below the threshold of 1E-06, so remain not significant as in the Draft EIR. The operational life of the facility must also be considered when evaluating significance of cancer risks, once these values have been refined. The risks estimated reflect a continuous, 70-year exposure, which may or may not be the case, depending on the closure date of the facility.

Reviewing Clement's approach, there are several factors contributing to their lower values for cancer risk due to emissions from facility operations. First, Clement only modeled two sources of emissions: a Class I landfill and the hazardous waste treatment area. The sources modeled in the CAPCOA analysis for the FEIR are: asbestos landfill, geothermal landfill, Class I landfill, Class II landfill, hazardous waste stabilization unit and associated onsite trucks, non-hazardous waste stabilization unit, steam generator, and carbon adsorber. As noted above, the Class II landfill was modeled as having the same emissions as the Class I landfill, and the non-hazardous waste stabilization unit was modeled as having the same emissions as the hazardous waste stabilization unit.

A second reason the analyses produced different results is that Clement did not conduct a multipathway analysis. However, the contribution of the other pathways to the total cancer risk is small compared to the risk from inhalation, as tabulated below for the lemon grove and Westmorland based on analysis of the 1985 data base with meteorological data from 1984.

Pathway	Cancer Risk at Lemon Grove	Cancer Risk at Westmorland
Inhalation	2.265E-06	2.173E-07
Dermal	5.277E-09	4.526E-10
Soil ingestion	1.678E-07	1.438E-08
Mother's milk	4.074E-10	3.879E-11
Total	2.439E-06	2.322E-07

Thus, the multipathway pollutants make a small, but incremental contribution to the total risks.

A third reason the analyses produced different results is that Clement used a virtual point source adjustment to simulate the large area sources at the GSX facility. They did this adjustment because they used the EPA Superfund Exposure Assessment Manual (1988) as the dispersion method to compute ambient air concentrations from emissions, and this model is recommended for point sources only. However, the virtual point source adjustment will tend to cause underestimates of air concentrations in the case of this facility because the "imaginary" (virtual) point source representing a large area source such as a landfill will be very far from the receptors by the time the plume emanating from the virtual point expands to the width of the area being modeled. For the FEIR analysis, the ISCST dispersion model was used, as is recommended by EPA and the ARB for both point and area sources. The ISCST treatment of an area source is more accurate than the virtual point source technique because it models the area source as being composed of many point sources via integration of the point source plume equation.

A fourth reason the analyses produced different results is that emissions from several additional compounds noted by the ARB as missing from Clement's analysis were included. See response to comment 295.

A fifth reason the analyses produced different results is that Clement did not use the CAPCOA methodology, and therefore used different cancer potencies and unit risk fac tors.

A sixth reason the analyses produced different results is that Clement used hypothetical average meteorological conditions instead of sequential data for their dispersion modeling. This approach is not necessarily conservative. The analysis for the FEIR used actual hourly meteorological measurements at Yuma for the years 1984 and 1986. These two years were selected out of the available, 5-year data set of 1984 through 1988 because the 1984 meteorological data resulted in the maximum annual average of total VOC emissions, and the 1986 meteorological data set resulted in the maximum l-hour emissions. 30th meteorological data sets were modeled for both the 1985 and 1987 waste data bases. The FEIR cancer risks presented above for both 1985 and 1987 waste data bases were for whichever meteorological data set produced the highest risk at each of the two key receptors.

Regardless of the reasons causing the differences in cancer risks predicted at the GSX facility, the CAPCOA analysis for the FEIR indicates emissions and cancer risks need to be refined further to obtain a realistic prediction of risks associated with operation of the GSX facility. If the refined analysis of emisions and risks indicates cancer risks are truly above a level of significance, a combination of mitigation measures will be necessary. Possible measures are discussed below.

As the emissions analysis is refined with the 1987 data base, it is recommended risk analysis with the CAPCOA methodology be conducted to determine which constituents and which sources appear to have the greatest incremental contribution to the total risk. These will be the chemicals and processes on which measures to reduce emissions should focus. A detailed breakdown for given receptors could be produced with the ACE2588 model to delineate cancer risk by individual pollutant and by source. This was done in the FEIR risk analysis for a fenceline receptor, the printout lists cancer risk by pollutant for each pathway analyzed (inhalation, dermal, soil, and mother's milk). The greatest incremental risks were from the inhalation pathway. In the individual chemical analysis with the 1985 waste data base for emissions, benzene and hexavalent chromium produced the highest risks. In the analysis with the 1987 waste data base for emissions, which contained more chemicals, the highest inhalation risks were from hydrazine, followed by creosotes and hexavalent chromium, then acrylamide, cadmium, nickel, and benzene. Benzene had the same risk in both the 1985 and the 1987 analyses; the risks from the other chemicals listed above were higher. According to Environ, the emissions analysis with the provisional 1987 waste data base is extremely conservative. Therefore, further refinement of the emissions may reduce the incremental contribution of these chemicals, leaving benzene and hexavalent chromium as principal chemicals of concern. In terms of sources, as would be expected, the Class I landfill and the hazardous waste stabilization unit produced the highest risks.

Several operational and design measures which could reduce emissions from the facility were discussed in response to comment 286. These include enclosure of the hopper and pug mill with negative pressure ventilation of emissions to air pollution control devices, use of low-benzene fuels, and investigation of possible applications of *W* oxidation technology.

Additional mitigation measures which should be considered during the permitting process are:

- Restrict the types of wastes (via waste code) which can be treated in the solid waste treatment unit, particularly those wastes containing any form of organics or other chemicals the risk assessment indicates are of primary concern.

- Reduce the annual amount of hazardous waste that can be treated at the facility.

- Place a cap on the concentration of certain chemicals allowed in wastes accepted at the facility.

- Restrict the waste codes which can be accepted at the facility.

Applicability and effectiveness of any of the above possible mitigation measures should be evaluated in terms of an accurate estimate of emissions and risks, conducted with methodology acceptable to the regulatory agencies who will be enforcing permit conditions. Therefore, the primary mitigation measure to be implemented during the permitting process is to refine the emissions estimates with the most acceptable waste data base, and then conduct a detailed risk assessment using the CAPCOA methodology to determine the significance of cancer risks and which chemicals should be the focus of mitigation efforts.

298. Comment noted. Clements' analysis was different from the CAPCOA methodology. The risk assessment conducted for the FEIR using the 1990 CAPCOA manual is based on dispersion modeling results obtained with the ISCST model, utilizing a sequential meteorological input data set. Thus, a modeling factor was not needed. Results of the risk assessment conducted for the FEIR were discussed in response to comment 297.

299. The following discussion of Clement's approach is based on interpretation of information presented in their risk assessment, since responses for the FEIR could not be obtained from Clement. Concerns regarding the appropriateness of Clement's model, the application techniques, input data, and documentation have been quantitively addressed in the FEIR by conducting a risk assessment using the July 1990 CAPCOA methodology. Results of this analysis were summarized in responses to comments 296 and 297.

a. It is true that Clement modeled two area sources as point sources and did not add the plumes. The ISCST dispersion model was used in the analysis for the FEIR.

b. According to the risk assessment by Clement, populations at the lemon grove and Westmorland were selected as receptors because "they represent the closest receptors to the facility". The land between the lemon grove, which is the closest receptor modeled, and the facility is owned by BLM and is not generally travelled by the public except for workers or drivers entering the facility, and workers and/or residents at the lemon grove, who would all be traveling along the paved roadway. In terms of evaluating chronic risks and cancer risks, which assume a continuous, 70-year exposure, the choice of these two receptors to indicate possible risks is reasonable. In the risk analysis for the FEIR, fence line receptors at a spacing of 100 meters were added, along with a grid of receptors spaced every 500 meters out to a distance of 3 kilometers around the facility. All these lands are controlled by the BLM. As long as this area remains undeveloped, it is unlikely the general public could experience the chronic hazard or cancer risks analyzed within the grid closer than the lemon grove, since a continuous, 70-year exposure would be required.

c. It is true that Clement included very few sources of emissions in their risk assessment. This is one of the reasons the risk analysis for the FEIR indicates higher risks than Clement's analysis. As discussed in response to comment 297, the analysis for the FEIR modeled the following sources: asbestos landfill, geothermal landfill, Class I landfill, Class II landfill, hazardous waste stabilization unit and associated onsite trucks, non-hazardous waste stabilization unit, steam generator, and cardon adsorber.

d. Clement's approach of using a virtual point source adjustment for large area sources would tend to underestimate air concentrations, as discussed in response to comment 297. However, modeling the different sources within the hazardous waste treatment area would have been acceptable if the appropriate dispersion model had been used. The risk analysis for the FEIR modeled the following sources in the hazardous waste treatment area separately: hazardous waste treatment unit, steam generator, and carbon adsorber. This was done because not all sources at the facility are area sources. The steam generator and the carbon adsorber are more appropriately modeled as point sources because the area they cover is so small, and emissions will be generated at a fixed location.

e. D stability is not a worst case assumption, and could have contributed to the apparent underestimation of risks when compared to the FEIR risk assessment, which used the CAPCOA methodology and the ISCST dispersion model. As discussed in response to comment 297, the FEIR analysis used actual hourly meteorological measurements from Yuma for the years 1984 and 1986.

f. Clement's methodology of using average annual wind speed is not worst case. The CAPCOA recommended factor of 0.1 is appropriate for dispersion modeling with hypothetical worst case meteorological conditions. However, since Clement did not use the recommended worst case condition, air concentrations could have been underestimated. The risk analysis for the FEIR used actual hourly meteorological data for two different years, as discussed above and in response to comment 297.

g. Stack tip downwash cannot be modeled with the methodology Clement used It is not known if this particular inconsistency with the CAPCOA methodology would result in underestimation of air concentrations. However, the risk analysis for the FEIR did use the stack tip downwash option in the ISCST model.

h. Apparently, Clement used such a high wind speed so the toxic substances, which have a short half-life, would be carried to the receptors being modeled (the lemon grove and Wkstmorland). An underestimation of air concentrations could result because the very high wind speed would disperse the particles and dilute the air concentrations. On the other hand, given a very short half-life, the particles would probably never actually reach the receptors modeled if a lower wind speed were used. Since all operations at the facility are to shut down when winds exceed 21 miles per hour, the scenario of asbestos dispersion does not appear to be even remotely possible, and would likely not be significant whatever the analysis procedure.

i. It is true that the Gaussian dispersion model can be used to determine the ambient concentration of a spill within 30 feet of the source. Apparently, the box model was used by Clement to represent a 30-foot diameter pool area from an initial spill of a tanker truck. Because concentrations within the initial spill area are assumed to be uniform, a box model is an adequate representation for initial spill conditions.

300. The need for updated information has been addressed in the FEIR as discussed below.

a. Emissions estimated using the 1985 and 1987 waste data bases have been compared by Environ. The comparison of 1985 to 1987 waste data bases is summarized in response to comment 289. Further details of the comparison are in the December 27, 1990 letter from Shari Libicki to Renee Capouya with the Air Resources Board, included as Appendix G of this volume of the Final EIR.

b. The 1987 Hazardous Waste TSDF Air Emission Models manual was used for emissions because the November 1989 manual is a review document only and has not been finalized for public use. The most recent version of the Hazardous Waste TSDF-Background Information for Proposed RCRA Air Emission Standards available from EPA at the time of the analysis was used; this document is dated 1988.

c. The risk analysis conducted for the FEIR used emissions estimated from the 1985 and provisional 1987 waste data bases in separate computer runs. The methodology followed by Environ for excluding substances with truly negligible impact from the emissions analysis is documented in the December 27, 1990 letter from Shari Libicki to Renee Capouya with the Air Resources Board, included as Appendix G of this volume of the Final EIR. Results of the risk analysis are discussed in responses to comments 296 and 297.

d. The risk analysis for the FEIR used the July 1990 CAPCOA manual, as discussed in responses to comments 296 and 297. See also Appendix F for a more detailed description of the computer model used to conduct the risk analysis.

301. Text requested in this comment has been added to page 2-26 of the Revised Draft EIR.

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

IMPERIAL COUNTY

AIR POLLUTION CONTROL DISTRICT

TELEPHONE: (619) 339-460
FAX: (619) 353-W:.

December 7. 1990

TO: Steve Birdsall. Air Pollution Control Officer

FROM: Gaspar Torres, Deputy Air Pollution Control Officer

SUBJECT: Draft Final Environmental Impact Report for the Expansion of a Hazardous and Non-Hazardous Waste Treatment Storage and Disposal Facility in Imperial County by GSX Services. SCH#90010086.

With the assistance of the California Air Resources Board (ARB), We have prepared the attached comments on the draft final Environmental Impact Report (DFEIR). Our comments focus mainly on responses numbered forty-four through fifty-four which were responses to ARB's original concerns. We have discussed these comments with the applicant and their consultant Environ. We have been assured by Environ and the applicant that they can provide Environmental and Energy Services Company (ERCE), with the appropriate information to adequately respond to our comments.

Some of our comments include issues which will be revisited in greater depth than required at this time during permit processing.

150 SOUTH NINTH STREET
EL CENTRO, CA. 92243-2850

IMPERIAL COUNTY CALIFORNIA

AIR **POLLUTION CONTROL** DISTRICT

TELEPHONE (619) 339-4606
FAX: (619) 353-9420

December 7, 1990

Jurg Heuberger
Planning Director
County of Imperial
939 Main Street
El Centro, CA 92243

Dear Jurg:

Attached herewith are the comments developed jointly by my department and the California Air Resources Board.

We wish that those comments be included with the draft GSX Imperial Valley Facility Expansion E.I.R., State Clearing House No. 90010086.

Sincerely,

Stephen L. Birdsall
Air Pollution Control Officer

SLB/mb

TECHNICAL COMMENTS

1. Mitigation of Criteria Pollutants (DFEIR #44)

302 The discussion of propotad mitigation for PM_{10}, NO_x and HCs emissions in the DFEIR should be expanded. The discussion should include .the options for mitigation which may be under reveiw during Air Pollution Control District (APCD) permit processing. Additional possible mitigation measures for HCs Include enclosure of the pug mill and waste curing piles areas (during initial high emission period), with negative pressure ventilation of emissions to air pollution control devices. The use of UV/oxidation for the treatment of waste water could present a next-to-no emissions alternative to some of the technologies proposed to-data. Additional possible NO mitigation Includes implementation of NO, control on othsr generator sources in Imperial County.

2. Air Quality Monitoring Plan (DFEIR #45)

303 The air quality monitoring plan need not be deiayed until one year's worth *of on-site* meteorological data has been collected. Meteorological data from another proxfmate location, such es the local military base, should be used for preliminary analysis of local meteorology, On-site meteorological data must be used to refine preliminary findings. For *the* purpose of public information in the FEIR, the afr quality monitoring plan should be reasonably substantive. However, the plan may be made more strfngent and comprehensive during the course of OHS and APCD permit processing. 5

3. Use of Current Information

304 Interpretation of the California Environmental Quali ty Act (CEQA) implies that current information be incorporated into the final EIR document (e.g. see Section 16162 (a)(3) of Title 14 of the California Code of Regulations). Since permit applications were used as references for the DFEIR, the requirement for currently available information extends to permit applications and processing.

The need for up-to-date information suggests that all estimates of emission rates and risk assessment be up-dated, at least by comparison, using currently available information sources. This need would apply at least to:

a) waste characterization using the DHS generator's hazardous waste database - compare 1987 to 1986);

b) estimates of emissions and risk which must use EPA emission rate formulae - for "Hazardous Waste TSDF Air Emission Models" compare November 1989 to 1987 manual and; far "Hazardous waste TSDF - Background Intormatfcn for Proposed RCRA Air Emission Standards" compare February 1990 to 1986 manual;

c) inclusion of all substances for the rfsk assessment which are known carcinogens or toxic and hazardous substances as currently fdentfffed by the U.S. EPA, DHS and/or the California Air Pollution Control Officer's Association (CAPCUA) and;

d) ure of the CAPCOA manuals "Air Toxfcs Hot Spots Program Rfsk Assessment, July 1990".

4. Lab-Pack Area/Changes to Operational Plan

305 In response to the ARB request to recalculate emissions from lab-packs, by using composition data representative of lab-packs rather than tha entire domain of generators, GSX indicated that lab-packs with organics will not be opened at the proposed facility. Specific proposed facility operation must be described and included in all appropriate permit applications and mentioned in the FEIR.

5. Analytical Laboratory Capabilities (DFEIR # 46)

306 In addition to the laboratory analyses described in the Part B permit application, the laboratory should have optimal capabilities to measure parameters that would be used to monftor and regulate process flows as quantitatively described in the permit applications. Process flow conditions and therefore monitoring may be applicable to more than one permit. To augment process control and for general waste characterization, the laboratory should hnve the following additional analytical capabilites:

a) Total Organic Carbon (TOC) and Total Organic Halide (TOX) fur monitoring waste water and vapor and streams associated with the steam Incinerator, carbon adsorption unit and evaporation tank ureas. Monitoring of these streams Is appropriate in order to stay within the concentration specfffcatfons as described in permit applications and possible permft conditions. TOC and TOX analyses should be used to augment specie specific analyses.

b) Broader semi-volatile analytical capabilities by gas chromatography for waste stream analysis since the waste code specifications may allow other compounds than those covered by the methods listed in the Part B application;

c) Gas chromatography/Mass spectroscopy (GC/MS) for screening identification of unknown (and/or quantitation of known) organic substances which are present in significant concentrations but cannot be identftfed and/or quantftated by standard GC methods and;

d) AT? incoming waste oils must be screened for polychlorinated biphenyls (PCBs). Since Aroclars in hazardous waste can often be heavily weathered, in addition to commercial Aroclor standard comparison, total chlorinated biphenyls should be quantitiated and used as a criterion for waste acceptance or rejection.

6. <u>Waste Stream Characterization (DFEIR #47)</u>

307 In the analysis of any database, the objective of quality control (QC) is to assess rather than guarantee accuracy and precision of the information, From the QC on the DHS 1986 generators' database, the University of California at Davis (UCD) authors identified several limitations in the survey Information. These limitations arm described in their report "Toxics Reduction Analysis Project"(TRAP), April 1988. The limitations of the 1986 survey infarmaticn are:

a) The survey response ratewas estimated to be only 12.52. UCD authors could not distinguish Whdt portion of the remaining 87.5% of generators fell into the less than 2 tons per annum exclusion category or the group of non-respondsas.

b) A comparison between the manifest database (Hazardous Waste Information System - HWIS) and the TRAP database showed a 50% discrepancy In waste sent to TSDFs (1.8 million tons versus 1.18 million tons, respectively).

c) For each generator, the survay farm did not distinguish between manifested and non-manifested waste streams. Therefore, a database user, including Environ, could not diatingulsh from the record between waste which were treated onsite, waste disposed of to a publicly owned treatment works or waste sent to a TSDF. Therefore, Environ's characterization of TSDF waste mey be biased low because it included waste which would not be dispased af offsite at a TSDF.

These limitations in the quality of the 1986 survey data constitute sources of error when transferred to calculated emissions and risk. Therefore, the data needs to be adjusted to reflect an acceptable level of confidence,

It is reiterated that current information needs to be incorporated, At 6 minimun, a comparison between the 1987 and 1985 databases should be made, The comparison should include a succinct description of procedures used to prepare the 1986 database for this particular application and conclusions of the comparison must be supported with data.

7. <u>Extrapolation of Survey Data and Level of Error (DFEIR #48)</u>

The level of error in estimating emissions from *generator* surveys should bo estimated since real data from streams accepted at an existing similar TSDF wore not used.

308 While extrapolation of data from a small (12.5%) known field to a large (87.5%) unknown field is permissible, Environ should adopt a more rigorous procedure than apply simple linear proportion to a sat of proportionate data bacauso proportionate data is usually non-gaussian In nature. Guidance on appropriate treatment of survey data can be found in texts on statistics such as "Sampling Techniques" by Cochran, 1977, published by Wiley and in "Principles and Procedures of Statistics" by Steel and Torrie, 1960, published by McGraw Hill.

a. Vapor and Particulate Suppresant Foam (DFEIR # 49)

309 The ARB original comment called for a comparison between the conditions of the 29 Palms and McColl studies versus anticipated facility operating conditions. Significant parametars were missed.

In the 29 Palms study, for "stabilized foam", 99% efficiency was obtained on a flat surface, whereas 90% (an order of magnitude less) was obtained on a sloped surface (2:1). Permit applications describe the working face of the landfill as being equally sloped 2:1. For the sloped surface, the 90% efficiency should be taken for a first cut, estfmate of efficiency for the landfill. Rather than idealized test data, best engineering judgement, should be used to estimate *an* efficiency for the basis of emissions estimates at the landfill. The estfmate must be supported by data and description of analysis, This estimate should also be addressed In permiting and besubject for compliance.

Both the McColl study *on* acidic wastes and 3M Corporation's (3H) own laboratory studies suggest that stabilized and temporary foams are not likely to perfom well on untreated waste because untreated waste could be acidic, basic, corrosive, reactive, etc. Tha permft applications propose the use of this kind of foam on untreated solid waste piles, while awaiting entry into the solids treatment unit. While all incoming wastes may not be al aggresive as McColl wastes, they will clearly not be benign. Since field data on various waste types is limited, the results of the McColl study may be the only available and applicable field data *on* which to estimate emissions control efficiencies for untreated waste. Additional consultation with foam manufacturers may be required in order to arrive at best engineering judgement on control efficiency at the waste piles. Clearly, 99% is not appropriate for all waste types,

On the basis of expected holding periods and manufacturer recommendation, permits must specify whether stabilized or temporary foam will be used on the untreated waste piles and landfills.

In addition to the issue of control efficiency values, itis recommended that GSX prepare a standard operating procedure (SOP) for the proper preparation and use of foam and train staff in its use with the assistance of manufacturer trchnfcal personnel. 3M provided some guidance information to GSX in a letter on October 10, 1990 end this information should be used in the SOP. It is recommended that only potable water be used for all foam preparation. It is also recommended that an estimate Of the annual amount Of foam expected for US8 at the facility based on permit application descriptions, be prepared for permiting agencies and, permit conditions Should require that logs of actual use be maintained for compliance.

9. Alternative Technologies (DFEIR #50)

310 All discussions of alternative technologies should us8 available actual test data about subject technologies in use either at the pilot or full operational stages. This would apply to the discussion of incineration and with respect to treatment of waste water, to UV/oxidation as an alternative to the carbon adsorption and evaporatfon tank units. It is recommended a thorough review and study of UV/oxidation based on actual test data from facilities and manufacturers of the technology. UV/oxidation could represent a next-to-no emissions alternative to some areas of waste water treatment.

10. Existing Fact l ity Emissions (DFEIR #51)

311 The FEIR must clarify whether the existing facility will be incorporated into the design and operation of the proposed facility. It the existing facility is to be incorporated, then emissions must be calculated on the basis of the proposed operation, If the existing facility is expected to operate unchanged, or under an existing permit, then the incremental difference in emissions must be addressed in the risk assessment.

The assumption that the risks from the existing facility would be less than that calculated for the Class I landfill of the Master Plan is unrefined. It is recommended that emissions estimates endeavor to be accurate and that all emission sources with risks in the 10^{-7} range be included in summation of risk. Actual testing data from the existing and sfmflar facilities represent best available information and should be used,

11. Criteria Pollutant Modeling

There are several comments on the criteria pollutant modeling.
312 Adequate response to the comments may require furthar calculations. The review consisted of evaluating 1) appropriateness of model selection, 2) proper modal application to assess project and cumulative impacts, 3) input data to represent worst-case conditions, and 4) adequacy of documentation. The following summarizes the comments:

a) Although Environ did not use the most current version of ISCST, 88348, the justification presented fn their September

12, 1990, response to imperial County Air Pollution Control District's comments is satisfactory.

b) Environ used meteorological data from Yuma, Arizona in thr dispertson modeling. Although Yuma maybe the nearest site of avaliable data, it *may not* be the most representative. Environ should justify that the *Yuma* data is the most representative of all the avaflable data of the meteorological conditions found at the site.

c) In the analysis, Environ placed receptors approximately 150 meters from the property boundary. Environ should justffy that the maximum impacts from the facility do *not occur* between the property boundary and 150 meters, or that the public does not have *access to* this area.

d) Environ placed receptors around the facility with spacing between each receptor of approximately 750 or greater meters. Environ should justify that this spacing of receptors Is dense enough to delineate the maximum impact from the facility.

e) Finally, Environ compares concentrations resulting from criteria pollutant emissions to the State and Federal standards. If dispersion modeling results are to be compared to the standards, then background concsntratfons must be added *to* the modeled concentrations. If ambient monitored background dnta is to be used, the AR3 recommends using three years of the most recent representative data. To the extent possible, the three *years* of data should correspond to the period of meteorological data used in the simulations. If Environ proposes to model background levels, than discussion of other nearby sources and potential plume overlap needs to be provided,

12. Compounds of Concern (DFEIR # 52)

313 It has been verified with Environ and Clement Associates that for chronic cancer *risk* assessment, at the outset of emfssions calculation, the list of chemicals under study was delineated. Nickel, arsenic, mercury, beryllium, perchloroethylene, chloroform and 1,4-dioxane were excluded from quantitaton. Therefore, the response that "..the total annual quantities (of these substances) were consfderd to be too low.." is unsubstantiated. The 2985 TRAP report shows nickel, arsenic and perchloroethylene as being among the most abundant toxic substances found in hazardous waste in California, which is *strong* justification to include these substances for estimating emissions and health risk in all *scenarios* for the FEIR.

13. Acute and Chronic Non-Cancer Risk

314 It is recommended that acute, non-cancer health rfsk be *assessed* based *on* worst *case,* maximum hourly emissions. Worst case waste

characterization should use the highest concentratfans of toxic substances found in wastè in the 1987 database which are available from DHS. both acute and chronic risk should be assessed using the CAPCOA manual 'Air Toxics Hot Spots Program Risk Assessment Guidelines", July 1990. The FEIR should ● stfmate any differences In chronic non-cancer risk as calculated compared to the methods described fn the CAPCOA manual.

14. <u>Multipathway Exposure (DFEIR #53)</u>

315 The relative significance of multipathway exposure must be substantiated with supporting data. It is reiterated that the CAPCOA risk assessment guideline document be used.

15. <u>Risk Factors (DFEIR # 54)</u>

316 It is reiterated that current CAPCOA unit risk factors (and modeling guidelines) need to be used. The use of a 6.3 modeling factor -instead of 0.1 is generally inconsistent with CAPCOA modeling guidelines (sea comment #16 f below) and is not a satisfactory justification for not using current CAPCOA unit risk factors.

26. ~~Chronic Cancer Risk Assessment Modeling (DFEIR #54)~~

317 There are several furthercommentsonthe risk assessment modeling. Adequate response to the comments may require additional calculations, The review consisted of evaluating 1) appropriateness of model selection, 2) proper model application to assess project and cumulative impcts, 3) imput data to represent worst-casa conditions, and 4) adequacy of documentation. The following summarizes the comments,

a) The Imperial Valley facility contains both urea and point sources, However, Clement modeled these sources separately. If these sources emit pollutants in common, then the consultant should have used a multiple source model such as ISCST In order to address the Issue of potential plume overlap.

b) Clement calculated concentrations for two receptors. It Is impossible to determine a priori which receptors will experience the maximum impact. The consultant should model for all those areas to which the public has access. The receptor field in those areas should be dense enough to delineate the maximum impact.

c) The risk assessment document did not Identify as included fn calculations, significant sources of emissions such as the vibrating grizzly, pug mf17 and curing pile areas. The document states that for rfsk assessment due to the entire hazardous waste treatment area, Environ provided Clement emission rates from the liquids bulking, the lab pack/small quantity generator rebulking, th9 liquid separator, the sludge separator, and tha oxidizing/reduction sub-areas only. It is recommended that the risk assessment Include all areas.

d) For the treatmant area omission sources included, Clement combined them into a single area source. Can all sources be described as area sources? Further, Clement must justify that combing all sources into one sourca will not bias the calculations toward under-estimation of the actual concentration.

e) Clement used a D stability when modeling the sources. Clement must justify that assuming a D stability as the worst case stability will not bias the calculations toward under-rstimatfon of the actual concentrations.

f) Clement used an annual average wind speed and assumed that the wlnd direction was toward thr receptors for 30 percent of the time in order to estimate the annual average concentration: Clement must justify that this methodology will not bias the calculations toward under-estimation of the actual concentrations. The methodology recommended by the California Air Pollution Control Officers Association's "Air Toxics Assessment Manual" (2987) is to assume a worst case l-hour avaragr wfnd speed, and us9 a 0.1 factor to determine an annual average concentration.

g) Clement ignored stack tip downwash, a regulatory default option. Clement should justify that this assumption will not bias the calculatfons toward under-estimation of the actual concentrations.

h) Clement assumed a wind Speed of 60 mph in the air dispersion of asbestos analysis. Clement should justify that this assumption will not bias the calculations toward under-astlmation of the actual concentrations.

i) Clamant stated that the Gaussian dispersion model cannot be used to determine the ambient concentrations within 30 fret of the adga of the tanker spill. This is not the case. The "Industrial Source Complax (ISC) Dispersion Model User's Gufda-Second Edftfon (Revised), Volume I" states:

> "It is recommended that, if the separation between an area sourer and a receptor is lass than the side of the area source x_o, the area source b9 subdivided into smaller area sources. If the source-receptor separation is lass than x_o, the ISC Model tends to overpredict the are4 source concentration. The degree of overprediction is a function of stability, the orientation of the receptor with rssprct to the area source and the mean wind direction. However, the degree of over-prediction near the urea source rarely exceeds 30 percent."

Thus, the over-prsdictlon of the **concentrations can be minimized** by **subdividing** the pool, and thr bfas toward **over-prediction** of **the concentrations** maximizes the protection to the **public.**

It Is **ordinarily** encouraged that **applicants** prepare a written **modeling** protocol at the **beginning** of the risk assessment process, and submit it to the appropriate regulatory **agencies** for **review** and approval. This can help keep **misunderstandings** to a minimum and reduce the need for sdditfonal analyses.

Imperial County Air Pollution Control District, supplemental letter

302. See response to comment 286.

303. See response to comment 287.

304. See response to comment 300.

305. See response to comment 301.

306. See response to comment **288.**

307. See response to comment 289.

308. See response to comment 290.

309. See response to comment 29 1.

3 10. See response to comment 292.

311. See response to comment 293.

3 **12. See** response to comment 294.

3 13. See response to comment 295.

3 14. See response to comment 296.

3 15. See response to comment 297.

3 16. See response to comment 298.

3 17. See response to comment 299.

SECTION 3
TRANSCRIPTS FROM PUBLIC HEARING HELD ON SEPTEMBER 12, 1990

A public hearing was held on September 12, 1990, in the auditorium of Westmorland Elementary School, to give the public an opportunity to comment on the DEIR. The public meeting was chaired by Jurg Heuberger, Planning Director of Imperial County. The complete transcript of the public hearing, including comments and responses is contained in this section. The transcript was prepared by Ron Fletcher, a Certified Shorthand Reporter (CSR). In an effort to reproduce the comments accurately, no editing transforming spoken English into written English has been done. An additional response to a comment by Michael Remington (page 58 of transcript) is at the end of this section.

G-S-X IMPERIAL VALLEY

FACILITY EXPANSION

WESTMORLAND SCHOOL AUDITORIUM

WESTMORLAND, CALIFORNIA

JURG HEUBER'GER, CHAIRMAN

PLANNING DIRECTOR

IMPERIAL COUNTY

REPORTED BY: RON FLETCHER CSR
LICENSE NO. 1761

I N D E X

PROCEEDINGS OF WEDNESDAY, SEPTEMBER 12, 1990, 6:30 P.M.

** * * *

CHAIRMAN HEUBERGER: GOOD EVENING. LET'S GET STARTED ON THE MEETING FOR THE GSX EXPANSION.

MY NAME IS JURG HEUBERGER, PLANNING DIRECTION FOR THE COUNTY OF IMPERIAL.

THE PURPOSE FOR TONIGHT'S MEETING IS TO MAKE AVAILABLE TIME FOR THE PUBLIC TO ADDRESS QUESTIONS, COMMENTS, OR CONCERNS TO THE GSX IMPERIAL VALLEY FACILITY EXPANSION DRAFT ENVIRONMENTA,L IMPACT REPORT .

THIS IS OUT FOR PUBLIC REVIEW RIGHT NOW, AND THE PURPOSE OF THIS MEETING IS TO ALLOW YOU, THE PUBLIC, TO PROVIDE ADDITIONAL INPUT VIS-A-VIS EITHER QUESTIONS OR COMMENTS.

8EFORE WE OFFICIALLY START, WE HAVE A NUMBER OF PEOPLE THAT I WOULD LIKE TO BRIEFLY INTRODUCE.

WE DO HAVE A COURT REPORTER THAT WILL BE TAKING EVERY WORD, AS I UNDERSTAND IT, AND HE HAS REQUESTED THAT IF YOU HAVE A QUESTION OR A COMMENT THAT YOU IDENTIFY YOURSELF FIRST SO THAT HE CAN CLEARLY UNDERSTAND YCUR NAME SO THAT IN THE FINAL PROCEEDINGS HE WILL NOT ATTRIBUTE A COMMENT TO THE WRONG PARTY.

SO IF YOU HAVE A COMMENT OR A QUESTION,WOULD YOU PLEASE IDENTIFY YOURSELF FIRST.

TO START OFF WITH, AS I INDICATED, I AM WITH THE PLANNING DEPARTMENT FROM THE COUNTY OF IMPERIAL, AND IN THE VERY FAR SACK OF THE ROOM, OUR DIGNITARY FOR THE PUBLIC TONIGHT IS SUPERVISOR ABESEABOLT, JUST AS A FORMAL

INTRODUCTION, AND THEN IN THE FRONT HERE WE HAVE ERC, WHICH IS THE CONSULTING FIRM THAT THE COUNTY HIRED TO DO THE EIR, AND I WOULD LIKE TO HAVE KATHERINE HON INTRODUCE HER PEOPLE REAL QUICK.

MS. HON: THANK YOU. I AM KATHERINE HON. I AM A PROFESSIONAL ENGINEER, AND I AM WITH THE ERCE. I AM THE PROJECT MANAGER FOR THE EIR.

THIS GENTLEMAN IS JOHN HERWIG. HE WAS THE LEADER OF THE GROUP THAT ANALYZED THE GROUND WATER, THE HYDROLOGY ON THE SITE.

NEXT TO HIM IS KIM DAVY, WHO IS THE PRINCIPAL ON THIS SITE ANALYST FOR THE EIR.

NEXT TO HER IS BOB VRANKA, WHO DID THE RISK ASSESSMENT PORTION OF THE EIR.

CHAIRMAN HEUSERGER: THANK YOU. OKAY. AGAIN, FOR THE PUBLIC INFORMATION, THE PROJECT THAT WE ARE HERE TO OISCUSS OR ANSWER QUESTIONS ON, MOST OF YCU, I THINK, KNOW AND ARE FAMILIAR THAT IT IS A HAZARDOUS-WASTE FACILITY LOCATED DIRECTLY WEST OF THE TOWNSITE OF WESTMORLAND, ABOUT SEVEN MILES.

THERE ARE SOME DRAWINGS, CHARTS AND DRAFTS THAT THE GSX CORPORATION HAS PROVIDED THAT ARE UP ON MY RIGHT-HAND SIDE HERE, AND THEY BASICALLY DEPICT A FACILITY.

THE PURPOSE OF THIS EIR AT THIS TIME IS TO DO, NUMBER ONE, MEET A LEGAL REQUIREMENT BY THE STATE OF CALIFORNIA UNDER THE CALIFORNIA QUALITY ACT, AND, SECONDLY, TO ADDRESS ISSUES AN0 CONCERNS FOR THE PROPOSED MASTER PLANNING EXPANSION OF THE FACILITY.

AND FOR THOSE OF YOU WHO DON'T KNOW, THE GSX FACILITY, OF COURSE, HAS BEEN HERE FOR ABOUT TEN YEARS, FORMERLY KNOWN AS THE I-T FACILITY, AND IT WAS THEN SUBSEQUENTLY 80UGHT BY A' CORPORATION BACK EAST, AND IT IS NOW REFERRED TO AS GSX FACILITY, THE PARENT CORPORATION BEING LAIDLAW.

THE PURPOSE OF THE APPLICATION AT THIS TIME IS TO DO A GENERAL PLAN AMENDMENT, A CHANGE OF ZCNE, AND PROBABLY MOST SIGNIFICANTLY A CONDITIONAL PERMIT TO ALLOW THE FACILITY TO EXPAND.

THE NEW FACILITY ENVISIONS DOING BOTH HAZARDOUS WASTE AS WELL AS CLASS 2 WASTE, SO IT WILL EXPANC SUBSTANTIALLY FROM THE PREVIOUS OPERATION.

THERE ARE A NUMBER OF PEOPLE HERE FRCM THE GSX CORPORATION THAT WILL ALSO BE ABLE TO ANSWER QUESTIONS.

I WILL POINT OUT THAT I 'WILL NOT 3E ALLOWING DEBATE OR AN ARGUMENT. WE ARE HERE TO TAKE INFORMATION,TO TRY TO ANSWER SOME OF YOUR QUESTIONS, IF YOU HAVE ANY.

HOWEVER, I WISH TO KEEP IT TO A MCDERATE TONE AND TRY TO KEEP IT TO THE ANSWERS THAT WE CAN PROVIDE.

BASICALLY, BY THAT I MEAN THERE MAY BE SOME QUESTIONS THAT ARE TOO TECHNICAL TO EXPLAIN HERE, AND WE WILL CERTAINLY 8E RESPONDING TO ANY WRITING, AND ANYTHING THAT IS QUESTIONED AT THIS POINT WILL BE INCLUDED IN THE FINAL EIR.

MR. SHAW, IF YOU WOULD COME FORWARD SO i CAN INTRODUCE YOU.

MR. DAN SHAW, AS MOST OF YOU KNOW, IS THE

MANAGER OF THE GSX FACILITY.

HE HAS A NUMBER OF TECHNICAL PEOPLE HERE THAT WILL ALSO BE AVAILABLE TO ANSWER COMMENTS.

MR. SHAW: I HAVE SEVERAL CONSULTANTS HERE.

I AM THE FACILITY MANAGER, AND I WOULD LIKE TO INTRODUCE MY OPERATIONS SUPERVISOR BOB FISCHER.

RAISE YOUR HAND, BOB.

DON MC KINNON, THE REGIONAL PROJECTS MANAGER, AND FROM THE ENVIRONMENTAL TECHNOLOGY ENGINEERING, THE ENGINEERING COMPANY THAT DOES THE DESIGNS ON OUR LAND FILL AND FOR SEVERAL DEQUE (PHONETIC) PROJECTS THAT WE HAVE, THE RESIDENTIAL ENGINEER, RAMON RAYMOND WEINGART.

HIS NAME IS RAYMOND, BUT HE WORKED IN MEXICALI ONE TIME, AND THEY'CALL HIM RAMON NOW.

NEXT TO HIM IS OUR FACILITY COMPLIANCE MANAGER ROGER H IGSON.

WE HAVE A LITTLE DIFFERENT STRUCTURE AT GSX WHERE -- LAIDLAW -- THE COMPLIANCE MANAGER ACTUALLYDOESN'T REPORT TO ME. HE REPORTS TO A SEPARATE VICE-PRESIDENTTHAN I DO, AND IT IS LIKE A CHECK AND BALANCE WITHIN THE COMPANY.

AND OUR REGIONAL COMPLIANCE MANAGER SILL ROSS.

OUR PROJECTS ENGINEER WITH ENVIRONMENTAL TECHNOLOGY ENGINEERING COMPANY IS VINCE SURYASASMITA.

IT IS EASY FOR YOU TO SAY.

WE CALL HIM -- THE SECRETARY CALLS HIM MR. SMITH.

AND THE GEOLOGIST THAT CID ALL THE GROUND WATER MONITORING AND CONDUCTS THE INSTALLATION OF OUR GROUND WATER MONITORING NETWORK AT THE FACILITY, DOUG REABER, WITH A COMPANY CALLED VIRON (PHONETIC).

AND THEN THE CHEMICAL ENGINEER THAT DID THE DESIGN WORK ON OUR AUTHORITY TO CONSTRUCT OUR AIR PERMITS, SHARI LIBICKI.

CHAIRMAN HEUBERGER: THANK YOU, JOHN.

AS I POINTED OUT, THE PURPOSE OF TONIGHT'S MEETING IS TO OBTAIN ADDITIONAL INFORMATION, ANSWER QUESTIONS OR AT LEAST EXPLICIT QUESTIONS PERTAINING TO THIS DOCUMENT RIGHT HERE. AND THIS IS A CRAFT ENVIRONMENTAL IMPACT REPORT.

FOR SCHOOL-AGE CHILDREN, IT'S A WONDERFUL DOCUMENT TO READ IF YOU HAVE NOTHING ELSE TO GO.

IT IS ABOUT TWO-INCHES THICK AND PROBABLY WEIGHS ABOUT FIVE OR SIX POUNDS AT LEAST.

I ONLY BROUGHT EIGHT OF THEM.

THEY ARE AVAILABLE AT THE BACK OF THE RCOM WITH ONE OF MY STAFF MEMBERS, MR. GARDNER.

IF YOU WISH A COPY, HE WILL SE HAPPY TO PROVIDE YOU WITH ONE.

AGAIN, THE POINT OF THE MEETING IS TO GATHER INFORMATION. THERE WILL BE NO DECISIONS MADE TONIGHT.

THE PROCESS THAT THIS PROJECT GOES THROUGH IS FAIRLY CUMBERSOME AND COMPLICATED. HOWEVER, THE END RESULT IS THE PROJECT WILL EVENTUALLY BE BEFORE THE IMPERIAL COUNTY PLANNING COMMISSION AND THEN THE BOARD OF

SUPERVISORS, AND THOSE ARE, IN REALITY, THE ONLY TWO DECISION-MAKING BODIES THAT CAN ACTUALLY MAKE A DECISION WHETHER TO APPROVE OR DENY THE PROJECT, SO AT THIS POINT IN TIMEIF YOU ARE GOING TO ASK ME:

"ARE YOU GOING TO APPROVE THISPROJECT?" I CAN'T ANSWER YOUR QUESTION BECAUSE THAT IS ULTIMATELY UPTO THE BOARD OF SUPERVISORS AND/OR THE PLANNING CCMMISSION IN COMBINATION.

SO AT THIS POINT IN TIME I WOULD LIKE TO OPEN IT UP TO THE PUBLIC FOR QUESTIONS AND ATTEMPT TO ANSWER THOSE QUESTIONS, EITHER BY MYSELF OR WITH THE CONSULTANTS THAT WE HAVE AVAILABLE.

ARE THERE ANY QUESTIONS?

YES, MA'AM.

MS. MEDRANO: EXCUSE ME, IS IT NECESSARY FCR YOU GUYS TO EXPAND?

CHAIRMAN HEUBERGER: COULD I ASK AT THE VERY 8EGINNING:

I NEED YOUR NAME SO THAT THE COURT REPORTER CAN PUT IT DOWN FOR THE RECORD.

MS. MEORANO: IS IT NECESSARY FOR YOU GUYS TO EXPAND?

CHAIRMAN HEUBERGER: THE QUESTION IS:

"IS IT NECESSARY FOR YOU GUYS TO EXPAND?" MR. SHAW WILL HAVE TO ANSWER.

THE QUESTION FOR THOSE OF YOU, IFYOU COULDN'T HEAR IT, IS:

"IS IT NECESSARY FOR YOU GUYS TO EXPAND?"

AND BY THAT I TAKE IT YOU MEAN THE FACILITY OUT HERE?

MS. MEDRANO: YES.

CHAIRMAN HEUBERGER: MR. SHAW REPRESENTS THE COMPANY. HE WILL ANSWER THAT QUESTION.

MR. SHAW: THERE HAVE BEEN SEVERAL NEW REGULATIONS THAT HAVE COME INTO EFFECT AND WILL BE COMING INTO EFFECT THAT REQUIRE ANY NEW COMPANY THAT GENERATES HAZARDOUS WASTE TO TREAT IT BEFORE IT GOES INTO A LAND FILL, AND ESSENTIALLY WHAT THAT MEANS IS THAT INSTEAD OF JUST PUTTING HAZARDOUS WASTE INTO A LAND FILL, YOU NEED TO STABILIZE IT, SOMETHING AS SIMPLE AS BASIC CONCRETE, AND THEN PUTTING IT-INTO YOUR LAND FILL, AND THAT TYPE OF TREATMENT REQUIRES EXPANSION OF THE EXISTING PERMITS.

THAT IS ESSENTIALLY WHY WE ARE COMING FORWARD.

ADDITIONALLY WE ARE TRYING TO PROVIDE ENVIRONMENTAL MANAGEMENT OF WASTE THAT IN ADDITION TO CUR EXISTING PERMITS, LIKE WE WANT TO BEABLE TO HAVE JUST A DEDICATED GEOTHERMAL LAND FILL THAT ACCEPTS THOSE WASTES, AND WE WANT TO ACCEPT AND SE ABLE TO HANDLE SOME LESS HAZARDOUS WASTES. WE CALL THEM CLASS 2 DESIGNATED WASTE.

THEY AREN'T HAZARDOUS, BUT YOU CAN'T THROW THEM INTO YOUR TRASH CAN_ THEY NEED TO GO SOMEWHERE ELSE. WE WANT TO SE ABLE TO PROVIDE THOSE SERVICES.

CHAIRMAN HEUBERGER: THANK YOU.

JUST A MOMENT, MA'AM.

WHILE I AM THINKING ABOUT IT, THERE IS AN

ATTENDANCE ROSTER GOING AROUND.

I WOULD APPRECIATE IT IF EVERYBODY WOULD SIGN SO THAT WE CAN KEEP TRACK.

MRS. BUTLER: MY NAME IS ERA BELLE BUTLER FROM WESTMORLAND.

ON A SCALE OF ONE TO TEN, WHAT IS THE MOST HAZAROOUS WASTE -- HOW WOULD YOU RATE IT -- THAT COMES DOWN BEFORE IT GOES INTO THE GROUND.

CHAIRMAN HEUBERGER: I'M NOT SURE i CAN GIVE YOU A SCALE. I WILL HAVE KATHERINE TRY TO ANSWER THAT AS OUR CONSULTANT ON THE ENVIRONMENT.

YOU ARE ASKING WHAT IS THE MCST HAZARDOUS WASTE MATERIAL THAT WILL BE COMING DOWN HERE?

MRS. BUTLER: YES.

CHAIRMAN HEUBERGER: KATHERINE OR DANNY ARE THE EXPERTS IN THE WASTES THAT WE ARE GOING TOCONSIDER.

I'M NOT SURE WHICH IS THE MOST HAZARCGUS.

MR. SHAW: THE HAZARDOUS WASTE THAT IS COMING DOWN IS ALL MANAGED IN A WAY THAT NO MATTER WHAT ITS TOXICITY CONCENTRATION LEVEL, IT ISSTILL MANAGED SC THAT IT IS NOT GOING TO AFFECT THE PUBLIC HEALTH OR THE ENVI RONMENT, AND THAT THE WHOLE REASON FOR THE ENVIRONMENTAL IMPACT REPORT AND THE RISK ASSESSMENT WAS DONE WAS TO ASSURE THAT NO MATTER WiiAT CHEMICAL OR WHAT COMPOUND IS ACTUALLY IN THE WASTE, THAT IT IS MANAGED SO THAT IT HAS NO EFFECT ON THE PUBLIC OR THE ENVIRONMENT.

CHAIRMAN HEUBERGER: BEFORE MR. SHAW OR MRS. HON CONTINUES, I WONDER IF I COULD RESPOND ON THAT.

I DON'T THINK SHE GOT QUITE THE ANSWER SHE WAS LOCKING FOR.

YOU'RE LOOKING FOR A TYPICAL WASTE MATERIAL SUCH AS OIL OR SOMETHING LIKE THAT. I CAN'T OFFHAND TELL YOU WHAT THE MOST HAZARDOUS WASTE PRODUCTS IN THIS STATE THAT WE CCULD HANDLE AT THIS TIME.

I WILL TELL YOU ONE THING AS FAR AS OUR PERMIT REQUIREMENT IS CONCERNED AND AS FAR AS HOW WE PROCESS THE APPLICATION, THERE ARE A NUMBER OF WASTES THEY ARE PROHIBITED FROM TAKING.

FOR EXAMPLE, PC8 MATERIALS -- THEY ARE PROHIBITED. THEY ARE PROHIBITED FRCM TAKING RADIOACTIVE MATERIALS, AND WHEN I SAY THEY ARE PROHIBITED, THIS IS ALL AT STAFF LEVEL.

THE BOARD, AGAIN, THE BOARD OF SURERVISORS, AND THE PLANNING COMMISSION CAN SE EVEN MORE RESTRICTIVE THAN STAFF OR LESS RESTRICTIVE.

AT THIS TIME THE EIR, HOWEVER, ENVISIONS THERE WILL BE NO PCS'S, THAT THERE WILL BE NC RADIOACTIVE MATERIALS, AN0 MAYBE KATHERINE CAN GIVE YOU A CCUPLE OF EXAMPLES OF THE TYPE OF MATERIAL THAT YOU ARE LOOKING AT, BECAUSE I THINK YOU ARE LOOKING AT NAMES OF PRODUCTS OF MATERIALS.

MS. HON: IF YOU HAVE A COPY OF THE DRAFT EIR, ON PAGES 2-8 AN0 2-9, WHICH IS 2-2, THERE IS A LIST OF WASTES PERMITTED UNDER AMENDED CONDITIONAL USE PERMIT, WHICH IS THE PERMIT THE FACILITIES ARE OPERATING AT NOW, AND THIS IS A FAIRLY REPRESENTATIVE LIST OF WHAT THEY ARE

ALLOWED TO ACCEPT NOW, AND BECAUSE THEY ARE ALLOWED TO ACCEPT CLASS 1 WASTES NOW, WHICH ARE HAZARDOUS WASTES, THESE WOULD REPRESENT TO THE PUBLIC THE MOST HAZARDOUS TYPES OF MATERIAL THAT THEY WOULD ACCEPT IN THE FUTURE WITH THEIR EXPANSION.

SOME OF THE MATERIALS LISTED HERE ARE "OUTDATED PESTICIDE STOCK, NEUTRALIZE0 AQUEOUS SOLUTIONS OF ACIDIC OR ALKALINE ORIGIN," WHICH ARE CORROSIVE, "WASTE WATER TREATMENT SOL1 OS, " LIKE (RESIN) RESIDENT WASTE AND POLYMERS, SO THIS IS REPRESENTATIVE OF WHAT THEY WOULD BE ACCEPTING.

THE FACILITY DOES HAVE LINERS IN THE LAND FILLS TO KEEP MATERIALS OUT OF THE GROUND WATER.

THAT IS ONE OF THE SAFETY FEATURES THAT THEY DID INCORPORATE INTO THE PROJECT, AN0 THE TREATMENT STABILIZATION OF THE WASTE, VIA THE STABILIZATION THAT MR. SHAW DESCRIBED, ALSO SOLIDIFIES THE MATERIAL SO IT ISN'T A LIQUID THAT GOES INTO THE LAND FILL.

ALSO, IWILL REFER YOU TO APPENDIX E IN THE DRAFT EIR, WHICH LISTS THE WASTES THAT THEY ARE ASKING TO BE ACCEPTED IN THE FUTURE.

CHAIRMAN HEUBERGER: THERE IS A FOLLOW-UP TO THAT.

ANOTHER WASTE THAT THEY ARE CONSIDERING -- RATHER THEY ARE ASKING TO TAKE -- IS ASBESTOS, AND THAT IS NOT LISTED AS HAZARDOUS WASTE IN A CLASS 1 FACILITY. ACTUALLY THAT WOULD BE PART OF THE WASTE THAT THEY WOULD BE ENVISIONING TAKING INTO THEIR CLASS 2 PART OF THE FACILITY,

BUT, AGAIN, IT IS SOMETHING THAT EVERYBODY IS KIND OF FAMILIAR WITH.

MOST PEOPLE HAVE AT LEAST A VAGUE IDEA OF WHAT ASBESTOS IS, AND THAT IS ONE OF THE MATERIALS.

ANOTHER MATERIAL THAT IS SPECIFIED IS CREOSOTE, WHICH COMMONLY TELEPHONE POLES -- THAT THE POWER COMPANIES USE TO TREAT POLES WITH, CREOSOTE MATERIALS.

THEY WOULD BE TAKING THAT, AND AGAIN, I WANT TO STRESS THAT THOSE ARE NOT LISTED AS HAZARDOUS MATERIALS, THOSE TWO PARTICULAR ITEMS. THEY ARE DESIGNATED AS WASTES, CLASS 2 WASTES.

AS KATHERINE POINTS OUT, THERE IS A WHOLE LIST IN THE APPENDIX.

AS I SAID, THESE LISTS ARE AVAILABLE, THE HAZARDOUS MATERIALS, THEY CAN -- OR THEY ARE ASKING TO TAKE -- DOES THAT SOMEONE ANSWER YOUR QUESTION,I HOPE?

MRS. 8UTLER: THAT IS FINE.

CHAIRMAN HEUBERGER: ALL RIGHT. ANY OTHER QUESTIONS?

MR. SEABOLT: WOULD YOU SHARE WITH US THE SAFEGUARDS WE HAVE ON MONITORING THIS.

HOW DO WE KNOW THAT THEY ARE REALLY BRINGING IN WHAT THEY SAY THEY ARE BRINGING IN?

SHARE THAT WITH US.

CHAIRMAN HEUBERGER: DAN?

MR. SHAW: MR. SEABOLT, THE FACILITY -- THE HAZARDOUS WASTE FACILITY PLUS THE CLASS 2 FACILITY IS CURRENT. AT THIS TIME IT IS JUST A CLASS 1 FACILITY

BASICALLY, AND IT IS BEING MONITORED BY A NUMBER OF AGENC I ES AND DEPARTMENTS.

ON THE FEDERAL LEVEL -- OF COURSE, EVERYONE HAS HEARD OF EPA, ENVIRONMENTAL PROTECTION AGENCY. THEY HANDLE THE MONITORING OF IT, AND THEN ON THE STATE LEVEL WE HAVE THE DEPARTMENT OF HEALTH SERVICES, AND THEY HAVE A PERMIT AND MONITORING DEPARTMENT.

WE ALSO HAVE THE REGIONAL WATER QUALITY CONTROL BOARD, WHICH IS ALSO A STATE AGENCY.

THAT PARTICULAR AGENCY HAS PROBABLY ONE OF THE CHIEF MONITORING RESPONSIBILITIES IN TERMS OF MONITORING GROUND WATER AND THE POTENTIAL CONTAMINATIONOF GROUND WATER.

THEN WE HAVE THE LOCAL LEVEL MONITORING SYSTEM, AND THE BOARD OF SUPERVISORS APPROXIMATELY TWO YEARS AGO ESTABLISHED A HIERARCHY OF MONITORING RESPONSIBILITIES, AND PRIMARILY AT THIS TIME MY DEPARTMENT IS RESPONSIBLE FOR COORDINATING THE MONITORING AND MAKING SURE THAT IT GETS DONE, AND THAT IS HANDLED THRCUGH THE PLANNING AND BUILDING DEPARTMENT.

THAT DOES NOT BY ANY STRETCH OF THE IMAGINATION MEAN THAT WE DO ALL THE MONITORING.

WE ARE SIMPLY TRYING TO ASSURE THAT IT IS GETTING DONE, AND TO COORDINATE IT, WE HAVE WITH US THE ENVIRONMENTAL HEALTH DIVISION, WHICH IS A DIVISION OF THE HEALTH DEPARTMENT. THEY HAVE A RESPONSIBILITY IN MONITORING.

AND WE HAVE THE AGRICULTURAL COMMISSIONER'S

OFFICE, WHO HANDLES AIR POLLUTION, AND, AGAIN, THAT DEPARTMENT HAS A RESPONSIBILITY FOR AIR EMISSIONS.

THE PUBLIC WORKS DOES SEISMIC MONITORING.

THEN THE FIRE OFFICE EMERGENCY SERVICES DOES BASICALLY RISK AND EMERGENCY-TYPE MONITORING.

THERE ARE A NUMBER OF TECHNICAL MECHANISMS THAT ARE DONE.

THE SITE HAS NUMEROUS MONITORING WELLS, AND THESE ARE BASICALLY WELLS THAT ARE DRILLED STRICTLY FOR MONITORING PURPOSES.

THERE ARE TWO OR THREE DIFFERENT TYPES, THE PRIMARY ONE BEING A GROUND-WATER SAMPLING TYPE OF WELL THAT IS MONITORED ON A REGULAR BASIS BY A TESTING LABORATORY, THAT REPORTS ARE SENT TO US AND TO THE STATE, AND THEN ARE ANALYZED.

THESE WELLS ARE LOCATED AROUND THE VARIOUS UNITS THAT YOU CAN SEE UP HERE BY THIS FIRST CHART.

RIGHT NOW BASICALLY THE SITE SIMPLY HAS THE GROUND UNITS ON THE UPPER RIGHT PORTION.

THE FAIRLY DARK BLUE AT THE BOTTOM IS THE OLD ORIGINAL LIQUID PONDS THAT HAVE SINCE BEEN CLEANED, REMOVED, AND ARE NO LONGER IN OPERATION OR THERE.

SO AT THE PRESENT TIME BASICALLY JUST THE GROUND OR TANNISH-COLORED UNITS ARE AT THE SITE, AND AS KATHERINE POINTED OUT, I THINK, AT LEAST SHE DID, I WILL REPEAT, THAT THE ORIGINAL CLASS 1 FACILITIES WERE ABLE TO TAKE HOME ALMOST ALL TYPES OF WASTE AND IN A VARIETY OF WAYS. IN OTHER WORDS, THEY COULD ACCEPT LIQUID AND JUST

PGUR IT INTO THE PONDS. THAT HAS SINCE BEEN PROHIBITED BY LAW, AND LIQUID CAN NO LONGER BE PUT INTO GROUND PONDS CR ANY PONDS TREATED, SO THAT HAS HELPED IN TERMS OF PROTECTION, BUT IT ALSO MAKES MONITORING A LITTLE MCRE SIMPLE AND EFFECTIVE.

ANOTHER MONITORING SYSTEM THAT IS BEING IMPLEMENTED AND HAS BEEN IMPLEMENTED IN SOME OF THE L-C UNITS YOU SEE THERE IS THE LINER SYSTEM THAT PROTECTS THE GROUND SURFACE (POUNDS), AND THAT IS A LINER SYSTEM WHERE BASICALLY THERE IS A SERIES OF PLASTIC SHEETS, VERY HEAVY PLASTIC SHEETS, AN0 THOSE OF YOU WHO KNOW WHAT THIS VISKEEN (PHONETIC SPELLING) IS, IT IS SIMILAR TO THAT, EXCEPT IT IS REAL TH ICK, SEPARATED BY A MESH SO THAT ANYTHING THAT LEAKS THROUGH THE FIRST LAYER OF PLASTIC GOES INTO THE SECOND LAYER WHERE THE MESH IS AND GOES DOWN.

EVERYTHING IS SLOPED TO ONE POINT WHERE, AGAIN, TH-ERE IS A MONITORING SAMPLE AND WELL AND ALSO PUMPING WELL WHERE YOU CAN TAKE THE PRODUCT OUT, IF THERE IS.

IN THE OLD DAYS -- AND SUPERVISOR SEABOLT IS VERY FAMILIAR WITH THIS, WE HAD, SOME VERY SERIGUS PRCBLEMS WITH THE FACILITY IN TERMS OF LEAKAGE BECAUS'E THE LIQUIDIN THE GROUND, AN0 AT THAT TIME THE FACILITY JUST SIMPLY RELIED ON COMPACTING CLAY MATERIAL AS THE BASE OF THE POND, AND ALL OF US HAVE A PRETTY GOOD IDEA THAT CLAY, DIRT AND SAND, AND A FEW OTHER THINGS, DO NOT REALLY HOLD WATER THAT PERFECTLY.

THEY RESTRICT IT FLOWING AT A CERTAIN RATE,

8UT THEY DONT' CONTAIN IT, SO NOW THE STATE OF THE ART AT THIS TIME IS -- AND, AGAIN, I AM NOT GOING TO STAND HERE AND TELL YOU IT IS PERFECT AND CAN'T EVER FAIL OR ANYTHING LIKE THAT, BECAUSE AS FAR AS I'M CONCERNED ANYTHING THAT MAN MAKES IS POSSIBLE TO FAILURE, 8UT THE STATE OF THE ART SYSTEM RIGHT NOW IS THE LINED IMPOUNDMENTS WHICH CAN BE MONITORED.

SO 8ASICALLY THERE ARE A NUMBER OF MONITORING AGENCIES, A NUMBER OF MONITORING TECHNIQUES.

AIR POLLUTION TAKES AIR SAMPLES TO MAKE SURE THAT THERE ARE NO AIR EMISSIONS, AND THIS WILL BECOME EVEN MORE CRITICAL IF THE PERMIT IS APPROVED FOR SUCH THINGS AS ASBESTOS, WHICH IS MORE SUSCEPTIBLE TO AIRBORNE DISTRIBUTION. IT IS NOT GOING TO LEACH INTO THE GROUND WATER, FOR EXAMPLE, SO THEY WILL HAVE A MORE ACTIVE ROLE TO PLAY AT THAT TIME TO MAKE SURE THERE ARE NO AIR EMISSIONS.

AT THIS TIME THEY DO TAKE AIR SAMPLINGS AND THEY ARE MONITORING THEM.

ARE THERE ANY OTHER QUESTIONS?

MR. SEABOLT: ABE SEABOLT AGAIN.

WHY CAN'T WE RESTRICT THAT SITE TO JUST OUR LOCAL WASTE?

MR. SHAW: YOU KNOW, ONE PERSON THAT I THINK WE FORGOT TO BRING AND THAT IS OUR LEGAL STAFF.

IN RESPONSE TO MR. SEABOLT'S QUESTION, THE PROPER RESPONSE HERE WOULD BE TO HAVE OUR COUNTY COUNSEL ADDRESS IT, 8ECAUSE IT IS A LEGAL QUESTION.

BASICALLY COUNSEL HAS TOLD US THAT 8ECAUSE OF

CERTAIN LAWS, WE CANNOT RESTRICT THE IMPORTATION OF OUT-OF-COUNTY WASTES, JUST ACROSS THE BORDER, IN OTHER WORDS, WE CAN'T PUT UP A FENCE AT THE COUNTY LINE AND SAY: "DON'T BRING ANYTHING INTO THE COUNTY," AND THAT IS AS SIMPLE AS I CAN PUT IT.

LIKE I SAID, I'M NOT AN ATTORNEY, AND I 'M NOT GOING TO PRACTICE LAW, 8UT 8ASICALLY THE LAWYERS HAVE SAID THAT WE HAVE TO ALLOW A CERTAIN AMOUNT.

WE DCN'T HAVE TO TAKE, YOU KNOW, THE ENTIRE WORLD'S TRASH OR WASTE, 8UT WE CAN'T RESTRICT SOME WASTE FROM 8EING BROUGHT IN.

THE FACILITY, I THINK, WAS ORIGINALLY OESIGNEO TO HANDLE GEOTHERMAL WASTE, SUT THERE IS A LENGTHY PROCESS THAT THE COUNTY WAS INVOLVED WITH THE ORIGINAL CORPORATION, 8EING THE I-T CORPORATION, WHICH INVOLVED LITIGATION, AND THAT WAS SETTLED EVENTUALLY, AND AT THE PRESENT TIME, FOR YOUR INFORMATION, THE CORPORATION, GSX, THE NEW OWNER, IS ONLY ALLOWED'TO IMPORT 87,360 TONS OF MATERIAL, SO WE DO RESTRICT IT TO AN AMOUNT AT THIS TIME.

NOW, I WOULD POINT OUT THAT THE COMPANY -- THE EXPANSION PLANS ARE ASKING FOR THAT CAP TO BE LIFTED SO THEY CAN TAKE IN MORE THAN 87, IF NECESSARY, BUT AT THE PRESENT TIME THE RESTRICTION ON OUTSIDE-COUNTY WASTES IS 87,000 TONS; IN-COUNTY WASTES SUCH AS GEOTHERMAL IS BASICALLY UNLIMITED.

YES, MA'AM?

MRS. 8UTLER: ERA BELLE BUTLER, WESTMORLANO.

ARE YOU ENLARGING OTHER FACILITIES -- IF NOT,

WHY NOT -- SO THAT THEY DON'T HAVE TO BRING THEIR TRASH DOWN TO US?

MR. SHAW: ARE YOU ASKING:

IS THE COMPANY ENLARGING THEIR OTHER FACILITIES, OR IS THE COUNTY IN ITS --

MRS. BUTLER: WELL, I'M ASKING IF -- IF YOU ARE ENLARGING -- SINCE YOU ARE THE ONE- THAT IS COMING DOWN AN0 ENLARGING THIS COMMUNITY SO WE CAN HANDLE THEIR TRASH, WHY DON'T YOU ENLARGE THEIR COMMUNITY SO THEY CAN HANDLE THEIR OWN TRASH?

CHAIRMAN HEUBERGER: OKAY. FIRST OF ALL, I AM WITH THE COUNTY OF IMPERIAL. I AM ON THE STAFFOF THE COUNTY. THE COUNTY IS NOT PROPOSING THIS. WE ARE SIMPLY THE STAFF THAT IS TRYING TO HANDLE THE PERMITS.

WHAT YOU ARE ASKING IS -- WHEN YOU SAY, " YOU, "GSX, "WHY ARE YOU ENLARGING THIS ONE? WHY AREN'T OTHER COUNTIES?"

I CAN CERTAINLY HAVE DANNY ANSWER PART OF THAT.

I WILL POINT OUT -- AND, AGAIN, THERE ARE SOME PEOPLE HERE THAT KNOW WHY REAL EASY. IT IS VERY DIFFICULT, NUMDER ONE, TO SITE ONE OF THESE FACILITIES NOW IN ANY PART, ESPECIALLY IN CALIFORNIA.

THE IDEAL SITUATION, OF COURSE, IS FOR EVERYSOOY TO HANDLE THEIR OWN WASTES. THAT WOULD SE THE IDEAL, THE UTOPIAN APPROACH, AND WE WOULD ALL LIKE TO SEE -- WE WOULD ALL LIKE TO HAVE L.A. HANDLE ITS OWN WASTE AND WE WILL HANDLE OUR OWN WASTE AND SO ON.

UNFORTUNATELY IN THE REAL WORLD IT DOESN'T ALWAYS WORK THAT IDEALLY.

THERE ARE CERTAIN LAWS REGARDING HAZARDOUS WASTE WHICH HAVE BEEN CHANGED HERE RECENTLY BY WHAT IS CALLED THE TANNER LEGISLATION, ABOUT THREE OR FOUR YEARS AGO.

BASICALLY THE TANNER LEGISLATION MAINTAINED THAT EVERY COUNTY HAVE A HAZARDOUS WASTE MANAGEMENT PLAN, AND THAT WE MAKE AN EFFORT TO COOPERATE WITH SISTER COUNTIES TO TRY TO MANAGE WASTES.

THE CONCEPT ORIGINALLY WAS KIND OF THAT WE WOULD TAKE A CERTAIN AMOUNT OF L.A. WASTE BECAUSE IT WOULD BE MORE EFFICIENT, FOR EXAMPLE, TO HANDLE A CERTAIN KIND OF WASTE ALL IN ONE FACILITY JUST BY VOLUME, AND IN RETURN, OF COURSE, WE WOULD BE ABLE TO SEND SOME WASTE -- WE DON'T HAVE ENOUGH VOLUME OF -- TO L.A., AND THEIR FACILITY WOULD TREAT IT BECAUSE, AGAIN, THEY WOULD SPECIALIZE IN THE TREATMENT.

AGAIN, THAT IS THE IDEAL, AND IT DOESN'T SEEM TO BE WORKING REAL WELL BECAUSE NOBODY WANTS A FACILITY CR WANTS THE SITE. THAT WAS THE CONCEPT.

AS FAR AS WHY GSX WANTS TO EXPAND THE FACILITY, I WILL ASK DANNY TO EXPLAIN WHY THEY WANT TO.

I WANT YOU TO UNDERSTAND THAT I AM NOT THE PROPONENT OF THE FACILITY. I AM NOT THE OPPONENT. I AM SIMPLY ONE OF THE MEMBERS OF THE STAFF THAT THE COUNTY HAS THAT HANDLES PERMIT BY LAW.

YOU CAN SAY "YOU" AS FAR AS I 'M CONCERNED.

YOU WCN'T HURT MY FEELINGS. I HAVE TAKEN WORSE BEATINGS THAN THAT, BUT MR. SHAW IS THE MANAGER, AND HE CAN TELL YQU 'WHY THEY WANT TO EXPAND IT, AND HE HAS PROMISED ME THAT HE IS GOING TO KEEP THIS TO TWO LINES BECAUSE I HAVE TO LEAVE FAIRLY EARLY.

MR. SHAW: RIGHT NOW WE HANDLE -- THE PERCEPT OF OUR WASTE THAT COMES FRCM IMPERIAL COUNTY IS ABOUT 30 PERCENT.

WE EXPECT THAT, ACTUALLY DEPENDING ON WHAT THE NAVAL BASE DOES IN THEIR CLEAN UP, THAT THAT SIGNIFICANT WILL INCREASE OVER THE NEXT TEN-YEAR PERIOD, BUT TO BE ECONOMICALLY FEASIBLE AS A CORPORATION, IF WE REALLY -- IF THE WASTE WE RECEIVE JUST FROM THE COUNTY OF IMPERIAL IS NOT ENOUGH TO BE ABLE TO PAY FOR ALL THE ENVIRONMENTAL MONITORING NETWORKS THAT WE HAVE, ALL THE GROUND WATER MONITORING, THE AIR, SO ESSENTIALLY WE CAN CO THAT IF WE TAKE WASTE FROM A REGION, AND THAT REGION IS ESSENTIALLY THE COUNTY OF IMPERIAL, SAN DIEGO, RIVERSIDE, SAN BERNARDINO, AND THE LOWER PART OF LOS ANGELES.

THERE ARE ONLY THREE FACILITIES IN CALIFORNIA -- THAT IS ALL -- TO MANAGE HAZARDOUS WASTE THAT IS PRODUCED, AND WE OWN TWO OF THE FACILITIES. THERE ARE OTHER FACILITIES UP IN THE BAKERSFIELD AREA, CERTAINLYTHEY ARE GOING THROUGH THE SAME EXPANSION IN BAKERSFIELD AREA TO ACCOMMODATE THAT .

THANK YOU.

CHAIRMAN HEUBERGER: YES, SIR?

A VOICE: I THINK DANNY JUST ANSWERED THE

QUESTION I WAS'JUST GOING TO ASK YOU, WHERE THESE FACILITIES WERE, THE PHYSICAL ADDRESS OF THE ONES IN L.A. THAT RECEIVED OUR WASTE, BUT I THINK DANNY JUST ANSWERED IT. THERE ARE ONLY THREE IN THE STATE OF CALIFORNIA.

MR. SHAW: THAT IS CORRECT.

A VOICE: IN FACT, WE CAN'T TAKE OUR STUFF INTO L.A.

CHAIRMAN HEUBERGER: WHEN I SAID L.A., I WAS TALKING GOING THE OTHER DIRECTION.

L.A. -- THE COUNTY OR THE CITY OF L.A. DOESN'T HAVE A CLASS 1 FACILITY.

AS MR. SHAW POINTED OUT THERE ARE BASICALLY THREE FACILITIES IN THE STATE OF CALIFORNIA RIGHT NOW THAT CAN TAKE YOUR CLASS 1 MATERIALS AND WE ARE ONE OF THE THREE, AND I HAVE PERSONALLY GONE TO ALL OF THE SITES INCLUDING THIS ONE.

WE ARE THE MOST RESTRICTED AT THIS TIME, AND I SAY AT THIS TIME.

KETTLEMAN HILLS IN KERN COUNTY -- KINGS COUNTY, RATHER; KETTLEMAN HILLS PROBABLY IS THE LARGEST OPERATOR AT THIS TIME, AND THEN THE OTHER ONE WE HAVE ALL HEARD ABOUT IS CAPAY (C-A-S-M-A-L-I-A), SANTA BARBARA COUNTY, HAS A LOT OF ENVIRONMENTAL PROBLEMS. THEY HAVE A LOT OF OTHER FACILITIES THAT HANDLE CLASS 2 WASTES AND CLASS 3. OF COURSE, ARE YOUR TYPICAL SANITARY LANDFILLS.

A VOICE: I THOUGHT WE WERE CLASS 2. WE ARE NOW CLASS I?

CHAIRMAN HEUBERGER: FOR ALL PRACTICAL

PURPOSES, CLASS 1 FACILITY, YES.

THAT IS NOT WHAT WE ARE DESIGNATED AS BY THE REGIONAL QUALITY CONTROL BOARD. HOWEVER, THE MATERIALS THAT THEY ARE TAKING RIGHT NOW CLASSIFIES THEM AT THE LEVEL OF CLASS 1.

THEY WOULDN'T QUALIFY AS CLASS 2.

A VOICE: I THOUGHT THAT'S WHAT THIS HEARING WAS ALL ABOUT WAS TO GET IT CLASSIFIED AS CLASS 1, NOT CLASS 2.

CHAIRMAN HEUBERGER: NO. THE STATE CLASSIFIES THEM.

WE DON'T HAVE ANYTHING TO DO WITH THAT. THE STATE OF CALIFORNIA REGIONAL QUALITY CONTROL BOARD HAS FIVE YEARS, I BELIEVE, IF I'M NOT MISTAKEN, TO GET THAT DONE.

CHAPTER 15 WAS RECODIFIED.

A VOICE: THIS IS JUST A HEARING THAT TELLS US IT HAS ALREADY BEEN DONE, AND WE ARE GOING TO HAVE TO ACCEPT IT NO MATTER WHAT?

CHAIRMAN HEUBERGER: TO BE HONEST WITH YOU, WHETHER IT IS CALLED CLASS 1 OR 2 AT THIS POINT IS NOT GOING TO MAKE A DIFFERENCE IN THE SENSE OF WHAT THEY CAN TAKE.

OUR LOCAL CONTROL AT THIS TIME, THE CONDITICNAL USE PERMIT, CONTROLS WHAT THEY CAN OR CANNOT TAKE.

THE STATE OF CALIFORNIA CAN CALL IT A CLASS 5 IF THEY WANT TO.

THEY ARE STILL RESTRICTED TO A LAND USE

PERMIT THAT WE HAVE, SO JUST BECAUSE YOU GIVE IT A NAME DOESN'T GIVE THEM AUTHORIZATION TO DO SO.

A VOICE: WE ARE NOT TAKING ANY OTHER ORIGINAL CONDITIONAL USE PERMIT --

CHAIRMAN HEUBERGER: AT THIS POINT IN TIME i HAVE A REPRESENTATIVE HERE FROM THE HEALTH DEPARTMENT WHO HAS 8EEN MONITORING, AT LEAST IN THE PAST -- I'M NOT SURE IF HE STILL IS, BUT AS FAR AS I KNOW, AND I HAVE NOT BEEN INFORMED OTHERWISE, SUT I HAVE BEEN TOLD THEY WERE UP TO CLASS IN ALL RESPECTS. THEY HAVE BEEN TAKING STRICTLY THE WEIGHTS THAT ARE ALLOWED WITHIN THE CGNDITIONAL USE PERMIT. THEY ARE NOT TAKING ANY WASTES THAT ARE PROHIBITED, THEY ARE NOT EXCEEDING THEIR TONNAGE.

THE HEALTH DEPARTMENT IS RIGHT BACK THERE. AM I WRONG?

A VOICE: YOU ARE RIGHT.

CHAIRMAN HEUBERGER: ARE THERE ANY QUESTIONS?

MS. CANNON: I HAVE A QUESTION. JENNIFER CANNGN.

AS THE FACILITY EXPANDS AND THEY INCLUDEMORE TOXIC WASTES AS THOSE TRUCKS TRAVEL COMING FROM L.A., COMING FROM SAN DIEGO, I ASSUME THAT WILL 8E DOWN HIGHWAY 86, AND THEY WILL SE IN THE AREA SUCH AS OUTSIDE INDIO HEADED THIS WAY, AND THEY HAVE A WRECK (INAUDIBLE) -- I AM NOT A -- HELP ME OUT, DANNY -- OR THEY HANDLE THEIR HAZARDOUS WASTE, AND THAT WRECK HAPPENS, WHAT IS THE POTENTIAL OF CAUSING SERIOUS HEALTH PROBLEMS TO ANYBODY THAT IS AROUND AND EXPOSED TO THE WRECK?

CHAIRMAN HEUBERGER: I THINK THAT IS A QUESTION I'M GOING TO HAVE KATHERINE ANSWER MOST OF IT.

BASICALLY THE ONE FACTOR THAT WOULD SE IN QUESTION IS THE TYPE OF MATERIAL THAT THE TRUCK WAS CARRYING AS TO HOW HAZARDOUS --

MS. CANNON: I AM TAKING THE WORST POSSIBLE . SCENARIO.

CHAIRMAN HEUBERGER: THE WORST POSSIBLE MATERIAL THEY CAN, AND YOU ARE SAYING IF WE OR IF THE FACILITY CANNOT RESPOND TO IT?

MS. CANNON: BECAUSE OF THE TIME FRAME, AND UNTIL SOMEONE GETS THERE TO SAY, "OKAY, YOU KNOW, LET'S 00 THIS OR THAT," IF THE PEOPLE STOP TO HELP OUT OR WHATEVER, WHAT ARE THE CHANCES OF BEING EXPOSED TO SOMETHING HAZARDOUS?

CHAIRMAN HEUBERGER: THERE IS ALWAYS -- UNTIL SOMEBODY GETS THERE WHO IS RESPONSIBLE, SUCH AS EMERGENCY SERVICES TEAM OR HEALTH DEPARTMENT, TO KNOW WHAT THEY ARE DOING, OF CGURSE, THERISK TO SOMESODY TO GET INTO THE MATERIAL OR EVEN BE PART OF THE ACCIDENT?

MS. CANNON: RIGHT. THAT IS WHAT WE ARE TALKING ABOUT, BRINGING IN STUFF FROM L.A.

I MEAN, WE ARE BEING EXPOSED TO STUFF THAT MAYBE SHOULD BELONG UP THERE.

CHAIRMAN HEUBERGER: THAT IS TRUE. AGAIN, THE ENVIRONMENTAL CONSULTANT THAT WE HIRED FOR ANALYZING THESE RISK ASSESSMENTS, I WOULD LIKE HER TO SE THE ONE TO GIVE THE ANSWER TO THAT.

MS. HON: THERE ARE A COUPLE OF SECTIONS IN THE EIR THAT WOULD BE USEFUL TO LOOK THROUGH.

ONE IS THE TRAFFIC ANALYSIS, WHICH DOES GO THROUGH AN ANALYSIS OF ACCIDENTS THAT HAVE OCCURRED IN THE PAST ON 86 AND ALSO DISCUSSES THE IMPROVEMENTS THAT WILL SE MADE TO SR-86 TO WIDEN THE ROAD AND MAKE IT MUCH SAFER.

THERE IS A LOT OF REASON TO SE CONCERNED AT THIS TIME BECAUSE 86 HAS A MUCH HIGHER ACCIDENT RATE THAN IT SHOULO.

PART OF THAT IS BECAUSE THAT ROAD CURVES RIGHT WHERE GARVEY ROAD IS, AND WHAT TENDS TO HAPPEN IS THE DRIVERS WILL JUST BE FATIGUED, AND THEY WILL DRIVE OFF.

THE ACCIDENTS THAT HAVE HAPPENED, WHICH HAVE NOT BEEN ASSOCIATED WITH THE LAIDLAW FACILITY, THEY HAVE SEEN OTHER TYPES OF TRUCKS, 8UT SASICALLY THE DRIVERS WHO HAVE GONE OFF THE ROAD OR HAVE BEEN -- ONE WAS A VEHICLE THAT WAS TRYING TO PASS ANOTHER VEHICLE.

CALTRANS IS GOING TO IMPROVE SR-86. THEY MAY GET TWO LANES IN EACH DIRECTION WITH A VERY, VERY WIDE MEDIAN IN Tt-IE MIDDLE, WHICH WILL ALSO ALLOW FOR TRUCKS TO TURN LEFT SAFELY INTO THE FACILITY.

SO THAT IS ONE ASPECT THAT HELPS REDUCE THE CONCERN. THAT IS A CONCERN RIGHT NOW.

THE OTHER SECTION OF THE EIR THAT TALKS ABOUT WHAT YOU ARE CONCERNED WITH IS THE “HEALTH & SAFETY SECTION, 3.9,” AND THAT SECTION WAS BASED ON RISK ASSESSMENT THAT WAS SELECTED BY ANOTHER FIRM, CLEMENT, FOR THE COUNTY, AND THEY LOOKED AT THE PROBABILITIES OF CERTAIN

THINGS HAPPEN ING -- ACCIDENTS AND VARIOUS OTHER TYPES OF CATASTROPHES, AND WITH THAT PROBABILITY ANALYZED WHAT THE RISK IS TO THE COMMUNITY, AND I WOULD LIKE TO HAVE 808 VRANKA TALK ABOUT THAT BRIEFLY.

MR. VRANKA: THAN KS, KATHERINE.

CLEMENT CONDUCTED A RISK ASSESSMENT, AS KATHERINE HAD MENTIONED, LOOKING AT ACCIDENTS THAT COULO HAPPEN, AND IF THE ACCIDENTS HAPPEN, WHAT THE IMPACTS O N THE PUSLIC WOULD BE.

ONE OF THE INCIDENTS THAT WAS LOOKED AT WAS A TRUCK ACCIDENT THAT HYPOTHESIZED THAT THE TRUCK CONTAINED ORGANIC SOLVENTS WHICH COULD VAPORIZE AN0 FORM A CLOUD, AND TO INDICATE WHAT THE SHORT-TERM -- WHAT THE ACUTE EXPOSURE LEVELS WOULD BE FOR SUCH AN ACCIDENT. SIMPLY THAT WOULD NOT RELATE TO A CHRONIC EXPOSURE, CARCINOGEN, MORE OF AN ACUTE EXPOSURE, AND THE LEVELS THAT WERE ESTIMATE3 WERE CONSIOEREO TO 8E -- THE MEASURE THAT IS USED IS SORT 3' A RATIO IN TERMS OF WHAT THE LEVEL IS CCMPAREO TO WHAT IS ACCEPTABLE, WHAT THE AMBIENT LEVELS WOULD BE, AN0 IN THE TABLE THAT WE PUT IN THE EIR ON PAGE 3-209, FOR A TRUCK ACCIDENT THIS RATIO WAS SOMEWHAT LESS THAN ONE WHERE ANYTHING GREATER THAN ONE WOULD 8E A SIGNIFICANT IMP&CT BECAUSE THE LEVELS WOULD 8E EXCEEDING A LEVEL THAT IS CONSIDERED TO BE UNHEALTHY, SO THAT TYPE OF ACCIDENT HAS SEEN LOOKED AT.

THERE ARE SOME ACCIDENTS THAT HAVE BEEN LOOKED AT IN TERMS OF ANY KIND OF POTENTIAL CHRONIC EXPOSURE, THAT IF A TRUCK OVERTURNED AND SPILLED ITS

CONTENTS IN THE CANAL, FOR SOMETHING LIKE THIS IT WOULD SE THE CONTAMINATION OF WATER RATHER THAN THE AIR, AND IN THIS SENSE THE CANAL IS USED FOR IRRIGATION.

THE WAY THAT IT WOULD AFFECT HEALTH FOR PEOPLE WOULD BE, FOR INSTANCE, CONTAMINATXON OF THE ALFALFA FIELDS, WHICH THE BEEF GRAZE ON, AND THEN IT WAS LOOKED AT IN TERMS OF WHAT THE RISK TO THE PUBLIC WOULD BE EATING BEEF THAT MIGHT BE CONTAMINATED WITH THAT, SO THAT WAS LOOKED AT, PLUS CONTAMINATION OF ANY LETTUCE THAT MIGHT BE CONTAMINATED BY THAT, AND WHAT WAS HYPOTHESIZED BASED ON THE DILUTION OF THIS IS THAT THE LEVELS, AGAIN, ON THE TABLE THAT ARE LISTED, WERE CONSIDERED TO BE LESS THAN ONE IN A MILLION, WHICH WOULD MEAN THAT THE IMPACTS WOULD NOT BE CONSIDERED TO BE SIGNIFICANT, BUT THESE KINDS OF SCENARIOS WERE LOOKED AT IN THE EIR AFTER PROBABILITIES WERE DONE ON POTENTIAL ACCIDENTS THAT CAN TAKE PLACE.

MS. CANNON: SO WHAT YOU ARE-SAYING IS THAT IT WOULD NOT BE ANY CHRONIC PROBLEM AT ANY TIME FOR ANY OF THE WASTE THAT WE WOULD BE ACCEPTING AS WE EXPAND.

YES OR NO?

MR. VRANKA: BASED ON THE ANALYSIS, THAT'S WHAT -- AND TYPICALLY IN THE ANALYSIS, CONSERVATIVE ASSUMPTIONS ARE MADE IN TERMS OF HOW MUCH COULD BE SPILLED. LIKE, FOR EXAMPLE, FOR BEEF, YOU WOULD ASSUME THAT SOMEONE IS GOING TO BE EATING BEEF CONSISTENTLY FOR THE -- IN THIS CASE IT IS A 30-YEAR LIFE OF THE PROJECT, SO YOU ARE GOING TO BE EATING THAT BEEF THAT HAS RAISED FROM THAT ALFALFA, THE SAME THING WITH THE LETTUCE, SO THESE THINGS -- BY

USING THESE WORST CASE-OVERLAPPING ASSUMPTIONS, YOU HOPE YOU COVER WHAT MAY BE CONSIDERED THE ABSOLUTE.

MR. MEDEARIS: I AM THE ADJOINING LAND OWNER. I BROUGHT UP SOME QUESTIONS ABOUT ALFALFA AND LETTUCE.

WHAT ARE THE LIMITS OF YOUR INSURANCE NOW? ARE YOU WITH GSX?

MR. VRANKA: I AM A CONSULTANT.

MR. MEDEARIS: YOU ARE A CONSULTANT. I WILL ASK DANNY THAT A LITTLE 81T LATER, IF I COULD.

I WANT TO ADDRESS THE PROBLEM ON THE INSURANCE AND ALSO ON CROSS-FILING -- CORRECT ME IF I AM WRONG, DANNY.

THIS FACILITY OUT HERE IS A SEPARATE HEALTH CORPORATION OWNED BYLAIDLAW?

MR. SHAW: CORRECT. IT IS A CORPORATION. THE PERMITS ARE WITH GSX SERVICES, IMPERIAL VALLEY, WHICH IS A WHOLLY-OWNED SUBSIDIARY OF LAIDLAW ENVIRONMENTAL SERVICES.

MR. MEDEARIS: OKAY. AND ON THE INSURANCE MATTER, HAVE YOU CROSS-FILED -- HAS LAIDLAW CROSS-FILED? IS LAIDLAW THEMSELVES LIABLE? HAVE THEY CROSS-FILEDFOR LIABILITY? HAVE THEY PUT THEIR ENTIRE ASSETS CN THE LINE OR JUST THIS CORPORATION'S?

MR. SHAW: NO. LAIDLAW IS THE RESPONSIBLE PARTY OUT OF CANADA.

IN FACT, THE LETTER OF CREDIT COMES NOW FROM SOUTH CAROLINA 8UT IT COMES FROM THE LAIDLAW CORPORATION, THE LETTER OF CREDIT.

THE AMOUNT OF MONEY THAT WE PAY IN EACH YEAR TO INSURE EXPOSURE, TO INSURE ENVIRONMENTAL IMPAIRMENT LIABILITY, THE AMOUNT OF $10 MILLICN COMES DIRECTLY OUT OF LAIDLAW'S.

MR. MEDEARIS: ALL RIGHT. SO IF WE WENT OVER THE $10 MILLION DEAL, THEN JUST HYPOTHETICALLY IF I SAID $15 MILLION ON ONE, I WOULD BE ABLE TO GO OUT AFTER LAIDLAW FOR THE ADDITIONAL FIVE MILLION?

MR. SHAW: THAT IS RIGHT. LAIDLAW HAS COMMITMENT THROUGHOUT THIS COUNTRY.

WE HAVE A NUMBER OF FACILITIES THROUGHOUT THE NATION TO ASSURE ANY LIABILITY, AND WE DO THAT BECAUSE THERE IS A NUMBER OF LAWS AND REGULATIONS THAT ARE IN THE 800KS -THAT IF WE WENT TO GET A PERMIT ELSEWHERE IN THE COUNTRY FOR ANOTHER FACILITY OR ELSEWHERE IN THIS STATE, WE NEED TO BE IN COMPLETE CCMPLIANCE WITH ALL OF THE RULES AND REGULATIONS RIGHT HERE AT THIS FACILITY.

CHAIRMAN HEUBERGER: MR. SEABOLT:

MR. SEABOLT: ABE SEABOLT AGAIN.

I WCULD LIKE TO HAVE THE PERSON JUST BEFORE YOU, DANNY, FOLLOW UP ON HER QUESTIONS, THE WORST CASE OUT THERE, AND YOU SAID IT COMES UP TO NOW WE ARE WORRYING ABOUT THE LETTUCE, MAYBE THE BEEF, 8UT DO YOU REALIZE THAT IS ALL THESE PEOPLE'S WATER SUPPLY?

THAT IS WHERE THEY GET THEIR DRINKING WATER. THAT IS WHAT THEY BATHE IN.

NOW, HOW DO YOU ISOLATE -- HOW DO YOU FLUSH A CANAL ONCE IT HAPPENS?

THESE ARE THINGS THAT THEY WOULD LIKE TO KNOW BECAUSE IT IS A LITTLE MORE THAN EATING SALAD; IT IS THEIR WATER SUPPLY.

MR. VRANKA: THAT IS NOT -- THAT IS A SECONDARY DRINKING WATER SUPPLY. IS THAT CORRECT? IT IS NOT PRIMARY?

MR. SEABOLT: IT IS PRIMARY.

MR. VRANKA: IT IS PRIMARY?

MR. SEASOLT: PRIMARY.

MR. VRANKA: WE ATTEMPTED TO LOOK AT ANY INGESTION ALSO OF ANY CONTAMINATED WATER THAT MAY SE CONSUMED, AND WE LOOKED AT THE PROBABILITIES OF NOT ONLY BREATHING IN CONTAMINANTS BY INHALATION, BUT WE ALSC LCOKEO AT INGESTION OF CONTAMINATED WATER AND LOOKED AT THE RISKS OF THAT 8ASE0 ON -- WHAT YOU 00 IS LCOK AT THE DILUTION OF THE CONTAMINANTS IN THAT FLOW AND ESTIMATE ON THAT, BASED ON HOW MUCH TYPICALLY A PERSON WCULO DRINK OR CONSUME, WHAT THE RISKS AR'E BASED ON THE EPIDEMIOLOGY, SO SOME INVESTIGATIONS WERE ESTIMATED BASED CN CONSUMING OR INGESTING WATER OR BREATHING IN CONTAMINANTS THAT MIGHT BE RELEASED FROM THE FACILITY.

MR. SEABOLT: I THINK MAYBE WE OUGHT TO HEAR FROM THE HEALTH DEPARTMENT WHAT PROTECTION THOSE PEOPLE HAVE, THAT MAYBE OUR OWN HEALTH DEPARTMENT SHOULD TELL US WHAT PRECAUTIONS ARE TAKEN SO THOSE PEOPLE KNOW THEY ARE PROTECTED, THAT SOMEONE THAT LIVES DOWNSTREAM, THE WHOLE COMMUNITY DOWNSTREAM HAS SEEN TAKEN CARE OF.

THESE ARE THEIR CONCERNS.

CHAIRMAN HEUBERGER: THAT'S A GOOD POINT, MR. SEABOLT.

WOULD SOMEONE FROM THE HEALTH DEPARTMENT PLEASE COME UP AND ATTEMPT TO ANSWER THE QUESTION.

MS. HAMBY: IN THE PAST YEAR WE HAVE HAD OTHER HAZARDOUS MATERIALS THAT ARE CONTAMINANTS, AND WE DO HAVE A SYSTEM THAT WE ALERT ANY WATER USERS USING IT FOR THEIR OWN DOMESTIC PURPOSES. THAT IS, IT IS USUALLY WORD OF MOUTH.

MS. RUTLEX: WHAT ABOUT THE PCOR SOULS WHO DON'T GET IT BY WORD OF MOUTH? THAT IS A BAD WAY TO GET -- I'M SORRY -- ERA BELLE BUTLER -- BECAUSE SOME PEOPLE MIGHT NOT EVER GET THE MESSAGE.

I THINK THERE MUST BE A BETTER WAY THAN BY WORD OF MOUTH.

MS. HAMBY: I'M SORRY. WE DO HAVE A FORM THAT WE CO DELIVER TO EACH RESIDENT.

MS. BUTLER: I'M SAYING, HOW LONG IS IT BEFORE YOU DELIVER THIS FORM? A DAY?

MS. HAMBY: WE DC IT IMMEDIATELY. IF IT IS FEASIBLE, WE CAN CO IT.

MS. BUTLER: I MEAN, I AM TALKING ABOUT A LOT OF PEOPLE, AND I KNOW THAT YOUR HANDS ARE TIED, TCC. IT IS THE TIME THAT IS CONCERNED, BUT I'M JUST SAYING, HOW LONG WOULD IT TAKE TO GET ALL THESE PEOPLE NOTIFIED?

MS. HAMBY: WELL, THERE IS ALSO COMMUNICATION. IF THE EVENT WAS SAD ENOUGH, WE COULD USE TELEVISION OR RADIO.

CHAIRMAN HEUBERGER: YES, MA'AM.

MS. CANNON: JENNIFER CANNON, AND I WAS CONCERNED --

THE REPORTER: A LITTLE LOUDER, PLEASE.

MS. CANNON: YOU SAY THESE CLEANUPS OUT OF THE CANAL, WAS THERE SPOIL? WHAT ABOUT THE AIR? DO THE PEOPLE AROUND HERE 8REATHE -- THE CHILDREN ARE GOING TO BE BREATHING IN THIS AIR WHILE YOU ARE CLEANING IT UP ONTHE GROUND.

WHAT ARE THEY GOING TO DO ABOUT THAT?

HOW 00 THEY CONTROL -- IF THIS SPILL HAPPENS, HOW ARE THEY GOING TO KEEP THIS OUT OF THE AIR?

THE CHILDREN ARE OUTSIDE PLAYING, AND THEY ARE NOT GOING TO BE INSIDE WATCHING THE TV.

THEY SAY WE HAVE HAD THIS TOXIC SPILL.

YOU HAVE GOT A COMMUNITY HERE, AN0 THE AIR GOES FROM HERE TO BRAWLEY, TO IMPERIAL, WHEREVER, AND IT CAN MULTIPLY, AND YOU ARE STILL BREATHING THESE TOXIC FUMES IN, NOT NECESSARILY EATING THEM., BUT YOU ARE 8REATHING THEM, JUST AS BAD.

CHAIRMAN HEUBERGER: YES, MA'AM.

I WILL START OFF -- THE RESPONSIBILITY OF THE AIR MONITORING IS THE AIR POLLUTION CONTROL DISTRICT. I'M NOT SURE I SEE THEM.

I DON'T SEE HIM PRESENT TONIGHT. HOWEVER, AGAIN, OUR CONSULTANT KATHERINE HON. HAS A MONITORING EXPERTISE.

MR. VRANKA: THIS SCENARIO WAS LOOKED AT, AS

I HAD ANSWERED THE QUESTION FOR THE OTHER YOUNG LADY, WHERE WE ASSUMED THAT THE VOLATILES FRCM A TRUCK SPILL, AND YOU HAVE VAPORIZATION, SO THE WORST CASE SCENARIO WAS ASSUMED THAT VAPORIZES OFF AND BLOWS DOWN WIND AND DETERMINED WHAT CONCENTRATIONS WOULD BE IN THAT AREA FROM THIS MATERIAL VAPORIZING OFF.

WE DID LOOK AT THAT. WE DETERMINED AND LOOKED AT THE CONCENTRATION AND'DETERMINED THAT THERE WOULD BE THE LOW LEVELS THAT WOULD BE CONSIDERED UNHEALTHFUL IN THAT SHORT TERM EXPOSURE LEVEL.

KATHERINE PROBABLY WILL NOW -- IN ADDITION TO THIS, THERE ARE SOME MECHANISMS, EMERGENCY RESPONSES, AND COORDINATIONS THAT ARE INCLUDED IN THE EIR, AND I THINK KATHERINE HON CAN TALK TO THOSE.

MS. HON: I WOULD LIKE TO REFER YOU TO PAGE 2-42 AND 2-43 IN THE DRAFT EIR, AND IN THE PROJECT DESCRIPTION, AND THIS IS SUPPLEMENTARY OF THE CONTINGENCY PLAN THAT GSX DEVELOPED, AND THE DUTIES OF THEIR EMERGENCY COORDINATOR, AND THE COORDINATION AND THE ASSISTANCE AGREEMENTS THAT THEY HAVE DEVELOPED WITH OTHER AGENCIES.

FOR EXAMPLE, IN THE EVENT OF AN EMERGENCY, OTHER LOCAL AGENCIES HAVE AGREED TO TAKE THE FOLLOWING ACTIONS.

THE IMPERIAL COUNTY SHERIFF'S DEPARTMENT WOULD SET UP ROAD BLOCKS AND DIRECT TRAFFIC AWAY FRCM THE FACILITY_

THE IMPERIAL COUNTY FIRE DEPARTMENT WOULD BE SUMMONED, WATER SUPPLY FOR FIRE FIGHTING WOULD BE OBTAINED

FROM A TRUCK THAT THE IMPERIAL IRRIGATION DISTRICT HAS.

AND IN ADDITION, GSX, AS PART OF THEIR AGREEMENT, HAS TRAINED PERSONNEL AND EQUIPMENT AVAILABLE TO PROVIDE EMERGENCY RESPONSE TO HAZARDOUS MATERIALS INCIDENTS IN THE COUNTY, AND I DON'T KNOW WHETHER MR. SHAW WANTS TO TALK ABOUT THE TRAINING SESSIONS HE HAS HELD, BUT IT IS OUR UNDERSTANDING FROM THESE MATERIALS MADE AVAILABLE TO US THAT THESE PLANS ARE IN PLACE AND ARE NOT SOMETHING TO HE DEVELOPED. THOSE PLANS ARE IN PLACE NOW IN CASE SOMETHING HAPPENED.

THEY ARE IN PLACE NOW IN CASE OF SOMETHING HAPPENING.

CHAIRMAN HEUBERGER: AS KATHERINE POINTED OUT, WE DO HAVE A NUMBER OF EMERGENCY RESPONSE PLANS THAT HAVE BEEN DEVELOPED, AND THERE WAS AN ANNUAL MEETING IN SAN BERNARDINO THAT WAS HELD AND ALL THE MONITORING AND CONTROLLING AGENCIES THAT WERE CALLED REGULATORS, AT THE SITE FACILITY, TO MAKE SURE THAT THOSE PLANS ARE OPERATIONAL, THAT THEY DO WORK AND TO IRON OUT ANY PROBLEMS THAT WE HAVE HAD IN CASE OF EMERGENCIES.

I 'M NOT SURE YOUR QUESTION ENTIRELY WAS ANSWERED AS FAR AS THE AIR PROBLEM.

MS. CANNON: WE STILL HAVE TO BREATHE WHILE THEY ARE CLEANING IT UP.

THE REPORTER: I CAN'T HEAR YOU VERY WELL. YOU WILL HAVE TO SPEAK A LITTLE LOUDER.

MS. CANNON: I SAID YOU WILL STILL HAVE TO BREATHE WHILE IT IS BEING CLEANED UP. EVERYBODY HAS TO

STAY INSIDE UNTIL THEY GET AN ALL-CLEAR SIGNAL.

IF SOMETHING IS SPILLED, THE WORST SCENARIC, SOMETHING THAT IS EXTREMELY TOXIC THAT WOULD BE HARMFUL TO OUR HEALTH, MAYBE NOT IMMEDIATELY BUT LATER ON DOWN THE ROAD, WHAT IS GOING TO HAPPEN WITH THE AIR THAT WE BREATHE IF THAT TOXIC SPILL IS SAD ENOUGH TO CAUSE LONG-TERM DAMAGE?

CHAIRMAN HEUBERGER: AGAIN, IN PART, I WISH OUR AIR POLLUTION DEPARTMENT CCULD ASSIST US IN EXPLAINING HOW THEY HANDLE IT, BUT, AGAIN, I WILL DEFER TO OUR CONSULTANTS TO ADDRESS THAT BECAUSE THAT IS THEIR EXPERTISE.

I AM ALSO GOING TO HAVE TO APOLOGIZE. I'M SUPPOSED TO BE AT ANOTHER MEETING AT 7:30.

I'M GOING TO HAVE TO TURN THIS OVER TO MY ASSISTANT MR. MORRISON, WHO WILL CONDUCT THE REST OF THE MEETING.

I HAVE TO GET ON MY WAY NOW.

I WOULD ENCOURAGE ALL OF YOU TO DO A COUPLE OF THINGS:

ONE IS TO MAKE SURE YOU'SIGN THE ATTENDANCE ROSTER. YOU WILL THEREFORE GET NOTICE OF THE VARICUS HEARINGS WHERE, AGAIN, YOU WILL HAVE ADDITIONAL OPPORTUNITY TO NOT ONLY VOICE YOUR CONCERNS, YOUR OPINICNS, BUT ALSQ ASK FURTHER QUESTIONS, AND THERE IS A SERIES OF MORE HEARINGS COMING UP, SO IF YOU SIGN THAT ATTENDANCE ROSTER, WE CAN GIVE YOU NOTICE OF THE MEETING AND MAKE SURE YOU GET IT.

THE OTHER THING I WOULD LIKE TO SAY IS THAT IF YOU ARE INTERESTED, THERE IS A LOT OF INFORMATION IN THE EIR THAT PERHAPS WE ARE NOT, YOU KNOW, READING OUT HERE, BUT THAT MIGHT BE OF INTEREST, MIGHT ANSWER SOME OF YOUR QUESTIONS.

AGAIN, YOU ARE MORE THAN WELCCME TO TAKE A COPY OF THE EIR.

WHAT I DO NEED, I NEED YOUR NAME, ADDRESS AND PHONE NUMBER SO THAT WE CAN EITHER GIVE YCU ONE OF THE COPIES THAT WE HAVE OR SEND YOU A COPY IF WE DON'T HAVE ENOUGH.

SO I WOULD ENCOURAGE YOU TO PARTICIPATE FULLY HERE AND ALSO AT LATER MEETINGS.

THIS PROJECT IS NOT SCHEDULED 'TO GO TO ACTUAL DECISION-MAKING PROCESSES UNTIL LATER THIS YEAR.

MOST LIKELY THIS PROJECT WILL NOT GO BEFORE THE PLANNING COMMISSION UNTIL EITHER LATE NOVEMBER OR DECEMBER AND PROBABLY NOT TO THE BOARD OF SUPERVISORS UNTIL AFTER THE FIRST OF THE YEAR ON CUR CURRENT SCHEDULE.

SO IT IS A LONG WAY FROM OVER, AND YOU STILL HAVE A LONG OPPORTUNITY TO COMMENT.

I WOULD ALSO ENCOURAGE YOU TO -- IF YOU THINK OF QUESTIONS AFTER YOU LEAVE HERE, YOU ARE MORE THAN WELCOME TO CALL MY DEPARTMENT, YOU KNOW, AND LEAVE A QUESTION OR TALK TO ME OR MY ASSISTANT, AND WE WILL TRY TO GET BACK TO YOU WITH THE ANSWERS.

WE WILL INCORPORATE ANY QUESTIONS YOU HAVE IN THE EIR AS WELL AS UP UNTIL THE REVIEW PERIOD ENDS, WHICH

IS IN THE EARLY PART OF OCTOBER.

SO, AGAIN, I WOULD VERY STRONGLY URGE YOU TO EITHER CONTACT US AFTER THE MEETING IF, YOU KNOW, YOU THINK OF SOME THINGS YOU DON'T THINK OF TONIGHT, AND ALSO ATTEND THE MEETINGS, THE HEARINGS, THE ACTUAL DECISION-MAKING HEARINGS, LATER ON THIS YEAR, IF YOU HAVE ANY QUESTIONS.

TO FURTHER RESPOND TO THAT QUESTION, I WILL. TURN IT OVER TO MR. MORRISON.

KATHERINE, WHO IS GOING TO TALK ABOUT THE AIR?

MS. HON: 808 VRANKA.

MR. MEDEARIS: MARLIN MEDEARIS. I SEE WE HAVE A COURT REPORTER HERE.

WILL A COPY OF THESE MINUTES BEMADE AVAILABLE IF WE WANT THEM?

CHAIRMAN HEUEERGER: YES. THIS IS ALL PUBLIC. THIS IS GOING INTO THE EIR. AND ANYBODY THAT WANTS A COPY WHO WANTS IT DELIVERED, WE WILL MAKE THEM AVAILABLE.

MR. MEDEARIS: OKAY. THANK YOU.

CHAIRMAN HEUEERGER: THAT IS THE REASON THAT TONIGHT'S MEETING IS BEING DONE THIS WAY, SO THAT EVERYTHING THAT IS SAID, THE COMMENTS, QUESTICNS -- AND THERE ARE SOME QUESTIONS, I'M SURE, THAT WE CAN'T ANSWER OR AREN'T ANSWERING TO YOUR SATISFACTION, BUT I WILL SE HAPPY TO FURTHER EXPLAIN THOSE.

THAT IS WHY THE EIR -- OUR CONSULTANT TO DO THE EIR IS HERE TODAY, TO TRY TO ANSWER THEM ON THE SPOT AS 8EST THEY CAN. BUT SOME OF THE QUESTIONS, LIKE THE LATEST

QUESTION ABOUT HOW THIS AIR PROBLEM GETS MITIGATED OR HOW WE ADDRESS IT, WE MIGHT HAVE TO GIVE YOU A FAIRLY LENGTHY FORMAL RESPONSE IN WRITING IN THE EIR FOR DIRECTION.

SO, AGAIN, I APOLOGIZE FOR HAVING TO LEAVE, 8UT ALL OF MY SCHEOULING PROBLEMS THIS WEEK SEEMS TO BE THIS WAY. THANK YOU.

MR. VRANKA: MAYBE I SHOULD EXPLAIN ALITTLE FURTHER THE SCENARIO I WAS TALKING ABOUT BEFORE, WHICH WE ASSUMED, BASED ON THE TYPES OF CHEMICALS THAT ARE EXPECTED TO BE RECEIVED AT THIS FACILITY.

IT IS ASSUMED THAT THE HYPOTHETICAL TRUCK ACCIDENT OCCURRED IN WHICH YOU HAD THIS SPILLOVER AND YOU HAD THIS VAPOR CLOUD, THIS MATERIAL EVAPORATING OFF, SO WHAT WAS OONE IN THE RISK ASSESSMENT WAS SIMULATED, THIS MATERIAL, BASED ON THE KNOWLEOGE OF THE BEHAVIOR OF THESE CHEMICALS, THE VAPORIZING INTO A CLOUD AND MOVED DOWNWIND, AN0 RESIDENCES AROUND OR IN THE IMMEDIATE VICINITY, CONCENTRATIONS 8ASED ON MODELS WHICH HAVE SOME AIR (POCKETS), AND THEN WHAT WE DO IS WHAT WERE CONSIDERED EXPECTED MODELING TECHNIQUES IN TERMS OF WHAT KIND OF LEVELS THAT SOME PEOPLE WOULD 3E EXPOSED DOWNWIND OF THE CHEMICALS THAT MIGHT BE RECEIVED AT THIS FACILITY, AND WE COMPARED THOSE HIGH ACUTE LEVELS TO WHAT IS ACCEPTABLE ON A SHORT-TERM BASIS -- HALF-HOUR, ONE-HOUR, ONE-OAY EXPOSURE FOR ACUTE, AND DETERMINE0 WHETHER THESE WOULO CAUSE SIGNIFICANT HEALTH IMPACTS IN TERMS OF ANYTHING PERMANENT, AND WHAT WAS DETERMINED, THE RISK ASSESSMENT, THAT NONE OF THE LEVELS, USING THIS WORST CASE SCENARIO APPROACH, WOULD

EXCEED THOSE SORTS OF LEVELS BASED ON THE ORGANICS THAT WOULD BE RECEIVED AT THIS FACILITY.

THE LONG-TERM EXPOSURE, AGAIN, AS I MENTIONED TO YOU IN TERMS OF ANY BUILD-UP OF CARCINOGENS WASLOOKED AT. AND THAT DOSE WAS RECEIVED.

THERE ARE OTHER KEYS YOU LOOK AT TO DETERMINE WHAT THE PROBABILITY OF THIS BECOMING A CARCINOGEN OVER A LONG-TERM, EVEN THOUGH IT IS A ONE-DOSE THING, AND, AGAIN, THE RISKS WERE DETERMINED NOT TO BE SIGNIFICANT FROM SUCH A FACILITY.

BUT IN THE MEANTIME THERE ARE CONTINGENCY PLANS, ACCORDING TO INFORMATION FROM GSX, THAT WOULD BE APPLIED TO MINIMIZE ANY PUBLIC EXPOSURE TO ANY WARNING TO INSURE THAT THAT WOULD NOT BE THE CASE.

DOES THAT ANSWER YOUR QUESTION?

MS. CANNON: SORT OF.

MR. REMINGTON: MICHAEL REMINGTON. I DON'T -- YOU KNOW, I THINK YOU MUST REALIZE THAT 'THERE IS -- IT IS NOT AS SIMPLE AS FAR AS THE TRUCK TRASH. WE ARE TALKING ABOUT, LIKE MR. SEABOLT WAS DISCUSSING, ABOUT WATER SUPPLY.

IF A TRUCK DOES GO INTO A CANAL AND THE TANK IS RUPTURED, IID, ONCE ON-SITE, CAN GO DOWNSTREAM AND NOTIFY ANY CUSTOMERS WHERE CISTERNS ARE 'BEING USED, AND WE CAN -- THE DISTRICT CAN PROBABLY SHUT DCWN THE SYSTEMS IN CLEANING THE CANAL, BUT ONCE YOU HAVE DONE THAT, YOU HAVE QUITE A JOB IN REMEDIATION, QUITE A JO8 IN CLEANING UP, AND I DON'T KNOW IF YOU CAN EVER PLAN EXACTLY HOW YOU ARE GOING TO DO THAT.

MR. SHAW: I USED TO WORK FOR THE COUNTY HEALTH DEPARTMENT PRIOR TO THIS JOS, AND MY ROLE WAS EMERGENCY RESPONSE.

I RAN THE 'IMPERIAL COUNTY HAZARDOUS MATERIALS RESPONSE TEAM, AND WE RAN INTO THE SITUATION QUITE A SIT WHERE WE HAD CHEMICALS SPILL INTO THE CANALS.

NOW, UNDERSTAND THAT GSX-IT LAIDLAW NEVER HAD AN ACCIDENT THAT WENT INTO A CANAL, BUT THE OTHER THINGS WERE OVERSPRAYS FROM PESTICIDES, AND DELIVERY TRUCKS THAT ARE GOING TO YOUR SUPERMARKETS THAT HAVE A WRECK.

THE 81GGEST ONE I WENT TO WAS A JET THAT CRASHED AND SPILLED JET FUEL AGAINST A MOTEL OVER IN HOLTVILLE, AND THAT THERE IS A CONTINGENCY PLAN AND THERE ARE WELL-TRAINED PEOPLE IN THE OFFICE OF EMERGENCY SERVICES AND IN THE HEALTH DEPARTMENT THAT CAN ACTUALLY GO INAND IMPLEMENT A CLEANUP PLAN AND EVACUATICN, IF THAT WAS NECESSARY, AND CORDON OFF THE AREA, GO OUT AND STOP THE CHEMICALS THAT HAVE SEEN IN THE WATER SYSTEM, VACUUM UP THE LIQUID WASTES.

THOSE ARE THE LEVELS, AND, IN FACT, THE COUNTY OF IMPERIAL HAS HAD A NUMBER OF THEM.

I HAVE RUN THAT TEAM. I WAS GETTING CALLED OUT AT LEAST ONCE A WEEK SOMEWHERE IN THE CCUNTY OF IMPERIAL.

SO THERE IS A VETERAN TEAM OF RESPONDERS.

MR. MEDEARIS: (VON) MAY I HAVE A QUESTION?

DANNY, WHO ARE THESE PERSONNEL?

WHERE ARE THEY LOCATED?

WHO ARE THESE PERSONNEL? IS IT FIREFIGHTERS? AND WHERE ARE THESE PEOPLE LOCATED AT?

MR. SHAW: THAT'S A GOOD QUESTION. ONCE A YEAR -- IN FACT, IT IS A CONDITION OF OUR CONDITIONAL USE PERMIT THAT ONCE A YEAR WE, AS COMPANY TRAINED -- EMERGENCY RESPONDERS AROUND IMPERIAL COUNTY, AND THAT INCLUDES EVERY FIRE DEPARTMENT IN THE COUNTY, INCLUDING THE VOLUNTEER FIRE OEPARTMENT, EVERY POLICE AGENCY, THE SHERIFFS, THE CHP, THE PUBLIC WORKS THAT MIGHT HAVE HEAVY EQUIPMENT THAT CAN BE USED -- THEY GO THROUGH AN ANNUAL TRAINING. I-i IS A THREE-DAY TRAINING THAT WE ACTUALLY PUT GN, AND THEY ARE ALL OVER, THROUGHOUT THE COUNTY.

WE ALSO ON SITE -- AND PART OF THAT EMERGENCY TRAINING, WE DO HAVE A VEHICLE ON SITE THAT IS FULLY EQUIPPED WITH ALL THE HAZARDOUS EQUIPMENT NEEDED TO RESPCND TO OTHER HAZARDOUS MATERIALS.

IN FACT, WE USE THAT IN THE COUNTY OF IMPERIAL, AND NOT JUST FOR OUR OWN STUFF, BUT WE JUST HAD A DRUM THAT FELL APART IN HOLTVILLE. IT WAS THE CITY OF HOLTVILLE'S OWN DRUM, AND WE RESPONDED TO THAT AND WERE ABLE TO HELP THEM WITH THEIR PROBLEM.

WE HAD ANOTHER GAS SPILL THAT WASN'T OURS. IT WAS SOMEBODY ELSE'S, AND THEY CALLED US AND WE WERE ASLE TO HELP THEM ON THAT.

OUR EQUIPMENT IS COMPATIBLE WITH Tt-IE COUNTY'S.

WHAT WE TRY TO DO IS COORDINATE ALL THE ACTIVITIES THROUGHOUT THE COORDINATION AGREEMENTS THAT

KATHERINE HAD MENTIONED IN THE EIR, SO WE HAVE COMPATIBLE EQUIPMENT SO THAT IF A FIREMAN WANTS TO JUMP ON THE BACK END OF OUR UNIT AND USE ONE OF OUR SELF-CONTAINED BREATHING APPARATUSES, HE IS FULLY TRAINED ON IT BECAUSE IT IS THE SAME AS HE HAS.

CHAIRMAN MORRISON: YES?

MS. CONTRERAS: WHERE DO THE WASTES CCME FROM? WHY SHOULD IMPERIAL COUNTY TAKE HAZARDOUS WASTES FROM L.A. AND OTHER AREAS?

WHY CAN'T THEY HANDLE THEIR OWN?

MR. SHAW: I ANSWERED THAT SCMEWHAT A LITTLE EARLIER.

ESSENTIALLY WE TAKE WASTES FROM OTHER AREAS AND FROM IMPERIAL COUNTY ALSO.

IN FACT, ABOUT 30 PERCENT OF THE WASTE THAT WE RECEIVE AT OUR FACILITY COMES FRCM THE COUNTY OF IMPERIAL ITSELF, AND IN THE FUTURE WE EXPECT THAT TO INCREASE BECAUSE OF SOME EXISTING JOSS WITHIN THE COUNTY OF IMPERIAL.

IN FACT, THR'OUGH THIS EXPANSION WEAREGOING TO 8E BETTER ABLE TO SERVE AGRICULTURE, AEROSPACE, NEW INDUSTRY THAT WE HAVE DOWN HERE, AUTO SHREDDERS, WASTE THAT WE CAN'T ACCEPT RIGHT NOW IN CUR FACILITY THAT IS GENERATED RIGHT HERE IN THE COUNTY OF IMPERIAL, SO WE CAN EXPECT THAT WE WILL BE ABLE TO TAKE MORE OF IMPERIAL COUNTY'S WASTE THROUGH THIS EXPANSION, BUT BEYOND THAT WE CANNOT BE ECONOMICALLY FEASIBLE AS A CORPORATION JUST TO ACCEPTING THE WASTE FROM IMPERIAL COUNTY AND BE ABLE TO AFFORD ALL OF

THE ENVIRONMENTAL MONITORING DEVICES THAT WE HAVE TO MONITOR THE SOIL, THE AIR, THE GROUND WATER, AND THAT IS -- AND TO BE ABLE TO AFFORD THAT, WE NEED TO BE ABLE TO TAKE WASTE FROM A REGION, AND THAT REGION IS PRETTY MUCH THE SOUTHERN REGION OF SAN DIEGO, LOWER PART OF LOS ANGELES, SAN BERNARDINO, RIVERSIDE, AND THE COUNTY OF IMPERIAL_

CHAIRMAN MORRISON: YES.

MR. SOTO: HOW OFTEN DO YOU GUYS CHECK THE GROUND WATER?

CHAIRMAN MORRISON : COULD YOU IDENTIFY YOURSELF?

MR. SOTO: DANNY SOTO.

CHAIRMAN MORRISON: WHO WOULD LIKE TO HANDLE THE GROUND WATER?

MR. SHAW: I THINK THERE MAY BE SOME CONFUSION HERE.

THE CONSULTANTS THAT ARE ON THIS SIDE OF THE TABLE ARE ACTUALLY CONSULTANTS THAT ARE HIRED BY THE COUNTY OF IMPERIAL AND THAT WERE HIRED TO LOOK AT OUR PROJECT AND DO THE ENVIRONMENTAL IMPACT REPORT AND REPORT TO THE COUNTY OF IMPERIAL.

WE CERTAINLY PAY THE BILL, AND THEY REPORT, AND IT IS THE COUNTY OF IMPERIAL'S DOCUMENT, THAT ENVIRONMENTAL IMPACT REPORT.

THE PEOPLE ON THE OTHER SIDE OF THE LINE ARE MY PEOPLE, AND THEY WORK FOR ME.

THE GROUND WATER MONITORING NETWORK IS MONITORED QUARTERLY, EVERY THREE MONTHS.

AND WE TEST IN THAT GROUND WATER ANALYSIS, WE TEST FOR THE CONSTITUENTS THAT ARE ACTUALLY IN THE WASTE.

MR. MEDEARIS: (VON) I HAVE A QUESTICN. 'VCN MEDEARIS, AGAIN.

AS ADJACENT LAND OWNERS TO YOU, WE HAVE ALFALFA AND ALL KINDS OF GOOD CROPS.

WHAT I WOULD LIKE TO KNCW IS -- I.DON'TTHINK THREE MONTHS IS SUFFICIENT ENOUGH. I THINK YOU SHOULD SE MONITORING IT WEEKLY AT A MINIMUM, BECAUSE, LIKE I SAID, THERE ARE TOMATOES IN THAT AREA, ALSO, AND I THINK THAT AREA SHOULD BE MONITORED MORE THAN JUST THREE MONTHS.

MR. MEDEARIS: (MARLIN) THE MONITORS ARE ON SITE. YOU DO HAVE THEM GUT. WE WOULD LIKE TO HAVE MONITORS ON OUR PLACE.

MR. SHAW: WE ACTUALLY HAVE QUITE AN EXTENSIVE NETWORK. IN FACT WE HAVE A GEOLOGIST HERE,DOUG, THAT DOES THE GROUND WATER MONITORING, EXTENSIVE MONITORING, AND HE CAN DESCRIBE TO YOU WHY THE SCS REQUIRES US TO MONITOR EVERY THREE MONTHS, AND ALSQ HE CAN DESCRISE TO YOU THE 8ACKGRGUND MONITORING WELLS THAT WE HAVE NOT CNLY ON OUR FACILITY WHERE THE LOCATICNS ARE, BUT ACTUALLY OFF SITES, DOWN GRADIENT OF OURFACILITY AND UP GRADIENT.

MR. MEDEARIS: (MARLIN) HOW FAR DCWN SOUTH?

MR. SHAW: I HAVE THE EXPERT IN THE FIELD RIGHT HERE.

I WANT TO HAVE HIM GIVE A DESCRIPTION OF IT.

THERE ARE SOME QUESTIONS. I WANT TO MAKE SURE HE KNOWS ALL THAT.

MR. REABER: THE MCNITORING NETWORK THAT WE HAVE SET UP AROUND THE ( ) SIDE OF THE PLACE IS A PRETTY EXPENSIVE (EXTENSIVE) NETWORK.

WE MONITOR GROUND WATER BEFORE IT REACHES THE LAND FILLS AND IMMEDIATELY AFTER WATER, AS IT PASSES THE ( ) TO THE DOWN GRADIENT SIDE.

GROUND WATER WILL MOVE FROM THE -- FRCM THE SECOND DIAGRAM -- IT MOVES FROM THE LOWER LEFT-HAND CORNER UP TOWARDS THE UPPER RIGHT-HAND CORNER GENERALLY.

MR. MEDEARIS: (MARLIN) THAT TAKES CARE OF 640 ACRES?

MR. REABER: THAT IS RIGHT.

MR. MEDEARIS: (MARLIN) BUT NOT OFF SITE'?

MR. REABER: LET ME CONTINUE. THE GROUND WATER STUDIES HAVE SHCWN -- HAVE GIVEN US RATES BELOW THE GROUND WATER OUT THERE, AND IT IS VERY SLOW. IN A GIVEN YEAR IT WILL MOVE -- WE FIGURED OUT THE GROUND WATER MOVES, YOU KNOW, ON A MAXIMUM OF SEVERAL FEET IN THE COURSE OF A YEAR, SO WE ARE MONITORING THE GROUND WATER ON A VERY GOOD BASIS. WE DON'T HAVE WATER -- EXCUSE ME. I AM A BIT NERVOUS.

WE DON'T HAVE GROUND WATER MOVING REALLY QUICKLY. WE DON'T HAVE RIVERS OF WATER UNDERNEATH THE SITE.

THE MATERIALS ARE VARIED AND IMPERMEABLE. IT IS MOVING VERY SLOWLY, SO BY MONITORING CN A QUARTERLY BASIS, WE ARE GETTING VERY REPRESENTATIVE WATER.

THERE IS NOT A CHANCE, GIVEN THE GROUND WATER

VELOCITY, FOR GROUND WATER TO GET PAST US BETWEEN SAMPLING PERIODS.

MR. MEDEARIS: (MARLIN) WHAT ABOUT AIR?

MR. REASER: LET ME JUST FINISH THIS.

SO WHAT WE HAVE -- EVERY MONITORING UNIT THAT WE HAVE HERE, WE MONITOR BOTH UP GRADIENT, SO THAT IS THE WATER BEFORE IT GETS -- BEFORE IT REACHES OUR SITE, AND DOWN GRADIENT: THOSE ARE OUR -- SO THE DOWN GRADIENT, THE FAR END OF OUR LAND FILLS, SO WE HAVE WELLS BETWEEN THE LAST LAND FILL AND THE EDGE OF THE PROPERTY, SO WE HAVE TAKEN SAMPLINGS OF THE GROUND WATER BEFORE IT LEAVES THE PROPERTY SO WE KNOW WHAT GROUND WATER IS LIKE AS IT CROSSES THE SITE.

MS. HON: I WANTED TO REFER YOU TO A COUPLE OF SECTIONS IN THE DRAFT EIR, IN THE PROJECT DESCRIPTION, STARING ON PAGE 2-63. IT DISCUSSES THE MONITORING, THE GROUND WATER MONITORING SYSTEM THAT THE GSX FACILITY HAS, AND THAT GOES ON FOR SEVERAL PAGES AND PRESENTS THE GROUND WATER PARAMETERS THAT THEY TEST FOR, AND VARIOUS OTHER INFORMATION ALSO TALKS ABOUT THE DATA MONITORING, WHICH IS A LAYER SORT OF ABOVE WHERE YOU WOULD EXPECT TO PULL WATER FROM IN A WELL.

YOU TYPICALLY WOULDN'T HIT GROUND WATER FROM IT, BUT THEY ALSO SAMPLE THAT, SO I ALSO WANTED TO REFER YOU TO THE GROUND WATER HYDROLOGY AND WATER QUALITY SECTION ON PAGE 3-57 IN THE EIR.

THAT SECTION CONTAINS SEVERAL FIGURES THAT SHOW THE LOCATIONS OF THE VARIOUS MONITORING WELLS ON THE

FACILITY, AND I WOULD LIKE FOR JOHN HERWIG, WHO DID THE ANALYSIS FOR THE EIR FOR THE GROUND WATER AND THE HYDROLOGY, TO DISCUSS THIS QUESTION A LITTLE BIT FURTHER.

MR. HERWIG: AS PART OF THE EIR PROCESS, WE DID EVALUATE A BIT -- WE DID EVALUATE THE EXISTING MONITORING SYSTEMS, THE GROUND WATER MONITORING SYSTEMS AT THE GSX FACILITY, AND WE EVALUATED THE GRADIENTS INTO THERE, AND OUR CONCLUSION WAS THAT IN GENERAL THE MONITORING THERE IS ADEQUATE. THEY HAVE ESTABLISHED A BACKGROUND WATER QUALITY DATA TO AN ADEQUATE EXTENT, AND THE DISTRIBUTION OF WELLS ALLOWS THEM TO BE ABLE TO DETECT ANY LEAKAGE THAT MAY COME OUT OF THE LAND FILL.

IN RESPONSE TO YOUR QUESTION ABOUT WHETHER THREE MONTHS WAS OFTEN ENOUGH TO SAMPLE THE WELLS, I CAN REITERATE WHAT DOUG SAID IS THAT OUR CALCULATIGN IS THAT GROUND WATER IS MOVING VERY, VERY SLOWLY THROUGH Tt-IE FORMATION THAT ( ) IN LINE WITH THE FACILITY, AND WE FEEL THAT DUE TO THAT VERY SLOW MOVING OF GROUND WATER, WHICH IS VERY TYPICAL OF GROUND WATER MOVEMENT, THAT THE THREE MONTHS IS CERTAINLY ADEQUATE FOR THAT.

CHAIRMAN MORRISON: ARE THERE ANY FURTHER QUESTIONS?

MR. MEDEARIS: (MARLIN) HE DIDN'T ADDRESS THE MOVEMENT OF AIR.

I WOULD LIKE AGAIN TO ASK YOU ABOUT MONITORING, THAT IT SE DONE ON SITE.

HAVE YOU DONE ANYTHING OFF SITE FOUR MILES AWAY, THREE MILES AWAY, TWO MILES AWAY?

MR. VRANKA: ARE YOU TALKING ABOUT AIR AT THE PRESENT TIME?

MR. MEDEARIS: (MARLIN) YES.

MR. VRANKA: IN THE PRESENT SITUATION MOST OF THE MONITORING IS DONE IN COORDINATION WITH THE IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT.

· MR. MEOEARIS: (MARLIN) WHAT IS THE ANSWER, YES OR NO? I DON'T MEAN TO BE BRISK WITH YOU, RUT DID YOU OR DID YOU NOT MONITOR OFF SITE?

MS. HON: I THINK YOU NEED TO UNDERSTAND THAT WE HAVE CONSULTANTS FOR THE COUNTY, SO WHEN YOU SAY, "DO WE MONITOR," NO, WE 00 NOT.

WE 010 THE ANALYSIS BASED ON MONITORING RESULTS THAT WE 03TAINED FROM THE COUNTY A..FROM THE FACILITY. OKAY, SO BOB VRANKA FROM ERC 010 THE ANALYSIS, THE RISK ASSESSMENT, AND ALSO WAS INVOLVED IN THE AIR QUALITY SECTION OF EIR.

MR. MEDEARIS: (MARLIN) WHAT IS THAT PERSON'S NAME?

MS. HON: WHO?

MR. MEDEARIS: (MARLIN) THE PERSON YOU ARE TALKING ABOUT NOW THAT GAVE THAT INFORMATION, THAT PERSON?

MS. HON: THAT PERSON WHO PROVIDED THE AIR MONITORING?

MR. MEOEARIS: (MARLIN) IS THAT PERSON PRESENT?

MS. HON: OKAY. I THINK THERE ARE PROBABLY TWO KINDS OF PEOPLE WHO 00 MONITORING.

THERE WOULD BE PEOPLE ASSOCIATED WITH THE AIR POLLUTION CONTROL DISTRICT, AN0 THERE WOULD BE THAT STAFF, AND THEN -- DANNY, OOES YOUR STAFF ALSO 00 --

MR. SHAW: YES.

MS. HON: -- THERE IS STAFF AT GSX WHO CO MONITORING.

SO IF YOU HAVE A QUESTION ABOUT WHAT ARE THE RESULTS OF OUR ANALYSIS --

MR. MEOEARIS: (MARLIN) NO --

MS. HON: -- NOBODY CAN ANSWER THAT.

IF YOU HAVE A QUESTION ABOUT WHAT THEY 00 ON THE SITE, THEN MR. SHAW COULD ANSWER THAT.

MR. MEOEARIS: (MARLIN) LET ME REPHRASE MY QUESTION.

DOES ANY OF THE AIR AROUND THE FACILITY GET OFF THE SITE?

MR. VRANKA: WELL, I GUESS, YES, I CAN SAY YES.

MR. MEOEARIS: (MARLIN) WHO MONITORS IT?

MR. VRANKA: BUT LET ME FINISH IN TERMS OF THE AIR MONITORING, BECAUSE THERE IS SOME MONITORING GOING ON NOW, BUT THAT IS FOR BASE LINE CONDITIONS, AS PART OF THE CONDITIONS IN THIS EXPANSION, IN THE EIR, WHAT IS REQUIRED, ON PAGE 2-71 OF THE EIR, IT SPELLS OUT AN AIR MONITORING PROGRAM THAT WOULD BE REQUIRED FOR THIS EXPANSION, AN0 BASICALLY AN AIR MONITORING PROGRAM IS GOING TQ BE DEVELOPED IN COORDINATION WITH IMPERIAL VALLEY APCD THAT IS IN MEETING WITH THE EPA HAZARDOUS WASTE FACILITY

PERMIT, AND THERE ARE CERTAIN GUIDELINES, SO PROTOCOL IS REING DEVELOPED SO THAT A NETWORK IS GOING TO BE SET UP IN ORDER TO DETERMINE THE MONITORING OF THE WINDS, WHICH WAY THE WINDS GO, AND ALSO TO MONITOR POLLUTANTS THAT COULD BE RELEASED DOWNWIND.

THE IMPORTANT PART IS YOU WANT TO SET THE MONITORS WHERE THE DOWNWIND LOCATIONS ARE SO IT IS IMPORTANT TO NOT ONLY MONITOR; IT IS IMPORTANT ALSO TO MONITOR THE WIND DIRECTION SO THAT YOU KNCW THAT YOUWILL BE GETTING DOWNWIND DIRECTIONS, SO THIS PROGRAM IS BEING DEVELOPED, AND THE PROGRAM DEFINES THE LOCATIONS OF THE SAMPLING AND THE METEOROLOGICAL STATIONS.

THE SAMPLING METHODS, WHICH MEANS IT IDENTIFIES THE TYPES OF POLLUTANTS THAT WILL BEMONITORED FOR THE (ANALYTICAL) METHODS AND DETECTICNS LIMITS THAT WOULD BE REQUIRED.

THESE WOULD ALL BE SPELLED OUT AS PART OF THE. CONDITION FOR THE EXPANSION REQUIRED, IN THE EIR.

IT IS MENTIONED IN THE EIR.

THERE WOULD BE QUALITY ASSURANCE, QUALITY CONTROL PROGRAM, TO MAKE SURE THAT IT MEETS THE EPA GUIDELINES, THE DATA THAT WOULD BE MEASURED, AND IS BELIEVABLE.

MR. MEDEARIS: (VON) IS THE GENERAL PUBLIC GOING TO BE ALLOWED TO READ THROUGH THIS TO GET THEIR OPINION ON ALL THIS STUFF?

MR. VRANKA: THIS IS A PUBLIC DOCUMENT, I SUPPOSE. THERE IS A COMMENT PERIOD.

MS. HON: LET ME DESCRIBE 'THE PROCESS AGAIN JUST A LITTLE BIT.

THIS DOCUMENT IS OUT FOR PUBLIC REVIEW.

WE ENCOURAGE YOU ALL TO SUBMIT COMMENTSIN WRITING. IF YOU WILL SEND THOSE COMMENTS TO US, ALL THOSE COMMENTS WILL BE PUT INTO ANOTHER DOCUMENT WHICH IS CALLED THE FINAL EIR, AND THAT PRESENTS THE TRANSCRIPTS FROM THIS MEETING AND OUR RESPONSES TO THOSE COMMENTS HERE, ALSO ALL OF THE LETTERS THAT THEY RECEIVE AND OUR RESPONSES TO ALL THOSE COMMENTS, SO THIS WHOLE SEQA PROCESS IS BUILT AROUND ENCOURAGING THE PUBLIC TO COME AND COMMENT ON THE PROJECT, COMMENT ON THE DOCUMENT, TO MAKE YOUR OPINION NOW,AND THAT IS WHAT THIS IS ALL ABOUT.

WE WILL RESPOND TO ALL OF THOSE, AND THAT FINAL EIR WILL ALSO 8E AVAILABLE FOR PUBLIC DISTRIBUTION.

MR. VRANKA: AS A CLARIFICATION, WAS YOUR QUESTION MORE IN THE SENSE OF, WOULD THE PUBLIC GET A CHANCE TO REVIEW THE AIR QUALITY MONITORING PLAN ASIT IS DEVELOPED?

MR. MEDEARIS: (VQN) AND COMMENT, ALSO.

I DON'T SEE HOW MONITORING CAN BE JUST WITHIN THIS FACILITY.

I SEE IT BEING OUTSIDE THE FACILITY IN THIS TOWN OR ARCUND THE ADJACENT AREAS, BECAUSE WE ARE -- WEST WINDS ARE PREDOMINANT.

MR. MEDEARIS: (MARLIN) ALSO SOUTHWEST.

MR. MEDEARIS: (VON) WE HAVE CROPS IN THAT DIRECTION.

CHAIRMAN MORRISON: WELL, I'M SURE IT IS PROBABLY GOING TO BE DONE IN A PUBLIC FORUM. IT IS DONE WITH THE COUNTY APCD, AND I CAN'T COMMENT ON HOW PUBLIC IT IS, BUT SINCE I WON'T BE SPECIFICALLY INVOLVED IN IT, AND THE EIR JUST SPELLED OUT THAT THE PROTOCOL HAD TO BE MET, SO MAYBE YOU COULD COMMENT IN TERMS OF THE PUBLIC'S PARTICIPATION IN THAT, MR. SHAW.

MR. SHAW: WE DO MONITORING AT THE FACILITY FOR THE EXISTING OPERATIONS, AND CERTAINLY, AS BOB HAD DESCRIBED, WE WILL HAVE AN ADDITIONAL PLAN FOR THE NEW PROCESS, BUT JUST -- WE ARE NOT MONITORING OURSELVES. THE AIR POLLUTION CONTROL DISTRICT COMES OUT AT LEAST WEEKLY AND COMES ONTO OUR FACILITY TO CHECK NOT ONLY CUR OAT.4 THAT WE PRODUCE, BUT TO GO OUT AND DO THEIR OWN DATA COLLECTION, BUT BESIDES THAT, THE AIR POLLUTION CONTROL DISTRICT DOESN'T ALWAYS COME ON MY FACILITY TO MONITOR MY FACILITY. THEY 00 IT FROM OFF SITE, AN0 I KNOW THEY DO IT FROM THE WEST SIDE MAIN, OR THEY DO IT FROM LEMON GROVE, AND I'M SURE THEY WILL CONTINUE DOING THAT WEEKLY.

MR. MEDEARIS: (MARLIN) IN THE WEST SIDE MAIN, ON THE LEMON GROVE, AN0 ALL THAT, WHAT, THEY COME OUT AND BRING SOMETHING IN THE BACK OF THE PICKUP AND GATHER A LITTLE AIR AND BOTTLE IT, ISOLATE IT, TAKE IT, OR WHAT?

MR. SHAW: THEY CERTAINLY HAVE THE CAPABILITY, BUT THEY ARE USING SPECIAL HAND-HELD TCOLS AT THIS POINT TO BEABLE TO MONITOR THAT, AND I KNOW THAT STEVE BIRDSALL HAS ALREADY TOLD ME THROUGH THE MONITORING OF MY FACILITY THAT I-WILL BE PURCHASING SOME ADDITIONAL

EQUIPMENT FOR HIM SO HE CAN ACTUALLY MONITOR IT A LITTLE MORE CLOSELY.

THE COUNTY HAS Tt-IE ABILITY TO CHARGE US FOR ANY MONITORING THAT WE DO. IT (WON'T) CCST THE TAXPAYERS. THEY CHARGE US SACK FOR THIS, WHICH INCLUDES THIS MONITORING EQUIPMENT.

(RECESS.)

CHAIRMAN MORRISON: IF WE COULD, WE WOULD LIKE TO GET STARTED AGAIN.

OUR REPORTER IS READY. OKAY. 00 WE HAVE ANY FURTHER QUESTIONS?

MR. MEDEARIS: (MARLIN) YES, I DO.

YOU SAY YOU ARE IN THE PROCESS OF DEVELOPING AN AIR MONITORING PROGRAM.

WHEN WILL THAT BE COMPLETED?

CHAIRMAN MORRISON: I BELIEVE THAT IS A QUESTION THAT COULD ONLY BE ANSWERED 8Y THE AIR POLLUTION CONTROL DISTRICT.

IT IS THEIR MONITORING PROGRAM, AND WE DON'T HAVE A REPRESENTATIVE HERE TONIGHT.

I ASSURE YOU THAT THEY WILL GET BACK IN TOUCH WITH YOU.

ARE THERE ANY OTHER QUESTIONS?

YES.

MS. ADA: ADA. IF YOU DON'T EXPAND, WILL YOU STILL 8E TAKING CARE OF THE WASTE THAT YOU ALREADY -- THAT YOU HAVE THERE, OR WILL YOU JUST LEAVE IT ALONE?

CHAIRMAN MORRISON: OKAY. MR. SHAW, WOULD

YOU LIKE TO ANSWER THE YOUNG LADY'S QUESTION?

DID YOU HEAR IT?

MR. SHAW: SURE. THE WASTE THAT WE ALREADY HAVE, THE WASTES ARE IN THIS LANDFILL HERE AND THIS LANDFILL HERE, AND ONCE WE ARE FINISHED WITH THE WASTES AND FILLED UP THIS LANDFILL, WE WILL ONLY TAKE CERTAIN AMOUNTS IN EACH LANDFILL, AND WE ACTUALLY COVER IT WITH SYNTHETIC LINERS, JUST LIKE WE HAVE ON THE BOTTOM. WE HAVE DOUBLE LAYERS OF SYNTHETICS, AND WE CAP IT AND WELD THOSE TOGETHER, AND WE MONITOR THESE ON INTO THE FUTURE AS PART OF OUR PERMIT CONDITION, AND WE MONITOR THE GROUND WATER AND THE AIR, AND SO FORTH.

MR. SEABOLT: DANNY -- ABE SEABOLT -- AS A FIELD TRIP, CAN THE STUDENTS GO VISIT YOUR SITE?

MR. SHAW: IN FACT I ENCOURAGE THAT.

OVER THE LAST TWO YEARS I PROBABLY HAVE HAD AT LEAST ONE SCHOOL A MONTH COME OUT TO MY FACILITY, AND I USUALLY BUY THEM LUNCH. THAT IS IMPORTANT BECAUSE I NEVER MISS MEALS..

AND WE TAKE THEM ALL THROUGH THE FACILITY AND SHOW THEM THE LANDFILLS. WE SHOW THEM THE MONITORING, THE WATER MONITORING SYSTEMS, THE LABORATORY. AND A LOT OF THE REASONS I DO IT IS NOT FOR ACCEPTANCE, TO TELL YOU THE TRUTH, WHETHER THEY LIKE THE FACILITY OR DON'T. IT IS ACTUALLY FOR MORE CAREER DEVELOPMENTS.

I TRIED TO GET A CHEMIST IN A YEAR AGO,- AND THAT IS AN ADDITIONAL CHEMIST, AND I ADVERTISED LOCALLY FOR SIX MONTHS.

I WAS BOUND AND DETERMINED THAT I WAS GOING TO FIND A CHEMIST HERE IN IMPERIAL COUNTY, THAT I WASN'T GOING TO ADVERTISE OUTSIDE OF THIS AREA.

AFTER SIX MONTHS I CERTAINLY STILL HAD THE NEED FOR AN ADDITIONAL CHEMIST, BUT I COULDN'T FIND ONE LOCALLY.

I WOULD LIKE TO, THROUGH CAREER DEVELOPMENTS IN THE SCHOOLS.

I WANT SOME CHEMISTS AND I WANT SOME GEOLOGISTS AND I WANT SOME TECHNICAL PEOPLE.

I NEED MORE HEAVY EQUIPMENT OPERATORS.

I DO GO TO THE SIZZLER A LOT.

MS. HON: I WANT TO REFER YOU TO PAGE (3-8?) IN THE DRAFT EIR, WHICH DISCUSSES A CLOSURE PLAN FOR THE FACILITIES, AND IT TALKES ABOUT THE PLAN FOR THE DIFFERENT ASPECTS OF THE FACILITY -- CLASS 1 LANDFILLS, THE CLASS 2 LANDFILLS, AND VARIOUS TREATMENT FACILITIES ON THE SITE.

CHAIRMAN MORRISON: YES.

MR. REMINGTON: MICHAEL REMINGTON. I HAVEN'T READ THIS DOCUMENT YET SUT I SAW IT THIS AFTERNOON.

BUT, IS THERE AN ESTIMATED TIME ON HOW LONG YOU EXPECT THAT YOU WILL ACTUALLY FILL UP THE EXPANDED AREA, THE NEW EXPANDED AREA, AND IS THERE PLANS TO EXPAND INTO 300-SOME ACRES'?

MR. SHAW: NO. THE PLAN IS A 20-YEAR PLAN AS IT SAYS IN THE EIR.

BECAUSE WITH THE AMOUNT OF TECHNOLOGY THAT WE HAVE, IT IS HARD TO SAY WHAT IS GOING TO HAPPEN AFTER TEN

TO TWENTY YEARS, IN TECHNOLOGY, IN A NEW WAY TO PROCESS WASTE.

8UT ONE OF THE THINGS REALISTICALLY IS IT'S A LOT LONGER THAN A 20-YEAR CAPACITY, THAT LANDFILL.

AS A COMPANY WE RECOGNIZE IT'S A LOT OF TECHNOLOGY TO MINIMIZE THE AMOUNT OF WASTE THAT WASTE GENERATORS PRODUCE, AND WITH THE REDUCTION AMOUNT OF WASTE THERE WILL 8E FEWER AMOUNTS OF RESIDUAL WASTE THAT NEED TO BE PROCESSED IN THE LANDFILLS AND TREATED.

YOU CAN EXPECT THIS FACILITY TO GO ON 30 TO 50 YEARS.

IT IS JUST HARD TO SAY AFTER THAT, SO IT HAS A TREMENDOUS CAPACITY AND PROBABLY REALISTICALLY OUTSIDE MY CAREER.

CHAIRMAN MORRISON: ARE THERE ANY QUESTIONS OVER HERE?

YOU WILL HAVE TO COME TO THE MICROPHONE, PLEASE.

MS. MEDRANO: FELICIA MEDRANO. HOW LONG DO THESE SYNTHETIC LINERS LAST?

MR. SHAW: I'M NOT SURE I CAN ANSWER THAT, SUT IT HAS TO PASS AT LEAST 100-YEAR TEST IN THE LABORATORY.

IT IS A COMBINATION OF SYNTHETICS AND NATURAL CLAY.

NATURAL CLAYS HAVE BEEN HERE THOUSANDS OF YEARS, HUNDREDS OF THOUSANDS OF YEARS, AND THE SYNTHETIC HAS TO PASS AT LEAST A IOO-YEAR TEST, AND IT HAS TO GO

THROUGH ADOITIONAL TESTING, SUBSTANTIALLY MORE THAN THAT.

MS. MEORANO: THANK YOU.

MR. THANK YOU.

MR. REMINGTON: MICHAEL REMINGTON. IN THE DOCUMENT THE PART I LOOKED AT, THE AREA WHERE YGU ARE GOING TO EXPAND, YOU DID A SURVEY FOR THE FLAT-TAILED HORNED LIZARD, AN0 YOUR DETERMINATION BY THE NUMBER OF SCATS FOUNO AND THE POPULATION WASN'T SUFFICIENT TO PROOUCE ANY TYPE CF MITIGATION.

HAVE YOU TALKED WITH FISH & GAME AT ALL OR GOT ANY RESPONSE FROM THEM AS TO -- HAVE THEY DETERMINE0 THAT THAT IS ALSO CORRECT, THAT THEY HAVE FOUND TO BE THE NUMBER WHERE MITIGATION WOULD NOT SE NEEDED?

MS. HON: WELL, I BROUGHT ALL MY EXPERTS HERE EXCEPT FOR THE BIOLOGIST.

THERE WERE SO LITTLE FOUND ON THE SITE THAT WE DIDN'T THINK THERE WOULD SE ANY QUESTIONS ABCUT THAT.

WHAT WE WOULD LIKE TO 00 TO MAKE SURE THAT WE GIVE YOU THE CORRECT ANSWER IS TO ANSWER THAT QUESTICN IN THE FINAL EIR AND ANSWER IT IN WRITING FROM THE QUALIFIED 810LOGIST THAT 010 GO OUT ON THE SITE.

CHAIRMAN MORRISON: OKAY. ARE THERE ANY FURTHER QUESTIONS?

A VOICE: (YOUNG LADY) THE SYNTHETIC LINERS, ARE THEY PREPARED FOR EARTHQUAKE OR SECURE FROM EARTHQUAKES?

WHAT LEVEL WILL THEY BRING?

CHAIRMAN MORRISON: ARE YOU TALKING ABOUT

JUST THE SYNTHETIC LINER ITSELF?

A VOICE: YES, EVERYTHING.

CHAIRMAN MORRISCN: MR. SHAW, WOULD YGU LIKE TO HAVE ONE OF YOUR ENGINEERS RESPOND TO THAT?

MR. SHAW: THIS IS VINCE SURYASAS MITA.

I PRACTICED IT A LONG TIME 8EFORE I COULD SAY THAT IN PUBLIC.

HE IS THE PROJECTS ENGINEER AND ACTUALLY DID THE INSTALLATIONS OF ALL THE LINERS.

HE DOES THE TESTING IN THE LAO ON THE LINERS, WRITES THE AS-BUILT REPORTS ONCE WE HAVE CONSTRUCTED THE LINER SYSTEM.

MR. SURYASAS MITA: TO ANSWER THE QUESTION. "ARE THE LINERS SAFE AGAINST A POSSIBLE EARTHQUAKE?" YES.

AND THE MAGNITUDE THEY USE IS HIGHER THAN 7, SO IT IS A HIGH EARTHQUAKE. IT IS HIGHER THAN 7, MAGNIFIED HIGHER THAN 7.

MS. CANNON: I THINK A MAGNITUOE OF 7 IS A FEASIBLE IDEA. I MEAN I DON'T THINK THAT IS AS 8IG OF AN EARTHQUAKE PERSONALLY. I MEAN I THINK IT IS A RIG EARTHQUAKE. I'M JUST SAYING IT IS POSSIBLE DCWN HERE.

MR. SHAW: THEY HAVE ACTUALLY DESIGNED WHAT THEY CALL A MAXIMUM CREDIBLE EARTHQUAKE.

WHY DON'T I HAVE BILL ROSS, WHO IS AN ENGINEER -- HE IS OUR REGIONAL COMPLIANCE MANAGER -- TO ANSWER IT.

TECHNICALLY HE HAS A LOT OF EXPERTISE IN JUST THAT KIND OF AN ISSUE.

MR. ROSS: THE LINERS THAT ARE CONSTRUCTED ARE OBVIOUSLY A SYSTEM BUILT WITH A BUILT-IN DUPLICATION.

IT IS NOT JUST ONE LINER SYSTEM; IT IS A SERIES OF CLAY AND SYNTHETIC, AND ACTUALLY THE SYSTEM IS FAIRLY AN ELASTIC SYSTEM WHEN YOU THINK ABOUT EARTHQUAKE MOTION.

IF YOU LOOK AT, LET'S SAY, A CONCRETE STRUCTURE LIKE A BUILDING, LIKE THIS BUILDING,WHEN THIS BUILDING GOES THROUGH A MOTION THAT IS GENERATED THROUGH AN EARTHQUAKE, WHAT WILL HAPPEN IS, YOU CAN HAVE DAMAGE INDUCED BECAUSE IT HAS GOT -- IT IS A VERY PLASTIC STRUCTURE IN THAT IT DOESN'T WANT TO GIVE WITH AN EARTHQUAKE MOTION, SO IT IS KIND OF LIKE THE DIFFERENCE BETWEEN A GLASS PLATE AND A PLASTIC PLATE.

IF YOU PUSHED ON A PLASTIC SHEET, IT WILL 8END AND DEFORM, AND IF YOU PUSHED ON GLASS, IF YOU PUSHED HARD ENOUGH ON IT, IT SHATTERS.

THE MATERIALS THAT ARE USED IN LANDFILL CONSTRUCTION ARE VERY PLIABLE, ELASTIC IN NATURE.

IN FACT, YOU CAN SEE THAT ON THIS LINE OF CROSS-SECTION HERE THAT IS RIGHT BY THE LADY WITH THE GLASSES. THE REPORT, IF YOU LOOK AT THE MATERIALS USED THERE, YOU CAN SEE THEY ARE VERY PLIABLE PLASTIC, ESPECIALLY THE SYNTHETIC MEMBRANES.

IN FACT, THERE ARE (ENGINEERING) PROPERTIES IN THIS MATERIAL WHICH ARE CALLED TENSILE STRENGTH, WHICH IS HOW STRONG THE MATERIAL IS UNTIL IT ACTUALLY BREAKS.

THEN THERE IS THE ELASTICITY OF THE MATERIAL,-

WHICH IS, "HOW MUCH CAN YOU STRETCH IT BEFORE IT ACTUALLY BREAKS?"

SO ONE IS A STRENGTH CHARACTERISTIC:

"HOW HARD IS IT BEFORE IT BREAKS?"

THE OTHER IS:

"HOW MUCH DOES IT ACTUALLY STRETCH?"

YOU CAN THINK ABOUT LIKE A RUBBERBAND.

A RUBBERBAND ISN'T VERY STRCNG, A RUBBERBAND AROUND A NEWSPAPER. YOU CAN PULL IT, AND IT DOESN 'T TAKE .A WHOLE LOT ACTUALLY TO BREAK IT, BUT IT STRETCHES QUITE A BIT BEFORE I T BREAKS.

AND THERE ARE OTHER MATERIALS THAT ARE VERY STRONG, LIKE STEEL. THEY DON'T STRETCH HARDLY AT ALL, 8UT THEY ARE VERY STRONG.

THIS MATERIAL ACTUALLY INCORPORATES MOST OF THOSE PROPERTIES. IT IS VERY STRONG AND IT IS VERY ELASTIC, AND ALSO THE CLAYS ARE VERY ELASTIC, SO EVEN IN AN EARTHQUAKE MOTION, A LANDFILL STRUCTURE CAN WITHSTAND A VERY LARGE MAGNITUDE OF EARTHQUAKE WITHOUT HAVING ANY DAMAGE.

IN FACT, THAT WAS PROVED DURING AN EARTHQUAKE THAT HAPPENED AT THE FACILITY IN 1987. THAT WAS .A 6.4 -- 6.2 AND 6.4.

THE COUNTY HIRED A SEISMOLOGIST OR ENGINEER WITH SEISMIC SACKGROUND TO COME OUT AND REVIEW THE STRUCTURES THAT WITHSTOOD THIS EARTHQUAKE AT THE FACILITY.

THERE WAS NO DAMAGE OR GROUND RUPTURE OR ANYTHING ASSOCIATED WITH THAT EARTHQUAKE AND DAMAGE TO THE

UNIT.

AND WHEN YOU DO A DESIGN OF 'THIS UNIT, THE ENGINEER SITS DOWN AND DOES ALL THE CHANGES AND ALL THE MATH TO SEE IF IT WILL WITHSTAND THE SEISMIC FORCE, WILLDO CERTAIN STASILITY ANALYSES TO MAKE SURE THAT THEIR UNIT WILL NOT BE DAMAGED OR THAT YOU WILL HAVE WASTE TO FALL OUT OF THE UNIT OR SOME OTHER TYPE OF DAMAGE THAT CAN HAPPEN.

ONE OF THE THINGS THAT IS BUILT INTO THE ANALYSIS IS THE DIFFERENT LEVELS OF EARTHQUAKES THAT POSSIBLY COULD HAPPEN, AND ALSO PART OF THAT ANALYSIS IS USING WHAT IS CALLED A FACTOR OF SAFETY.

AND SO YOU NEVER WANT TO DESIGN A STRUCTURE THAT WILL JUST WITHSTAND A CERTAIN FORCE, BECAUSE THERE ARE ALWAYS SOME UNKNOWNS, SO YOU ALWAYS INCORPORATE INTO THAT CONSERVATIVE ESTIMATES ALL THE WAY ALONG, KIND OF LIKETHE RISK ASSESSMENT THAT WAS DISCUSSED EARLIER.

YOU CON'T JUST THINK ABOUT AN AVERAGE TRUCKLOAD THAT COULD SPILL AND GOINTO THE CANAL'OR JUST FALL ONTO THE ROAD. YOU THINK ABOUT THE WORST CASE, THE WORST TOXIC STUFF THE FACILITY COULD ACCEPT GOING INTO THE -- YOU KNOW, GOING INTO THE DRAINAGE CANAL AND POSSIBLY BEING DRUNK THROUGH THE WHOLE PERIOD THAT THAT MATERIAL WAS SPILLED.

THEN YOU GO TO THE POTENTIAL HEALTH EFFECTS THAT COULD RESULT IN THAT, BECAUSE THEN WHEN YOU GET 'THE RESULTS BACK THAT SAY THAT THAT IS REALLY NOT GOING TO BE A PROBLEM, THEN YOU ARE COMFORTABLE WITH ALL THE THINGS THAT COULD HAPPEN UNDER THAT WORST-CASE SCENARIO.

THAT'S IMPORTANT AS A WORST-CASE SCENARIO. JUST LIKE THE SEISMIC DESIGN HERE. YOU LOOK AT THE WORST POSSIBLE EARTHQUAKE HERE, AND THEN JUST TO BE SURE, YGU THROW IN WHAT IS CALLED A FACTOR OF SAFETY, AND YOU SAY:

"WELL, LET'S ASSUME IT IS TWICE AS 8AD AS THAT, " SO THE ENGINEERS TYPICALLY DO THAT BECAUSE THERE ARE SOME UNKNOWNS WITH SEISMIC ACTIVITY, AND THESE MATERIALS CAN ACTUALLY WITHSTAND A LOT MORE THAN THEY ARE ACTUALLY DESIGNED FOR.

SO I'M NOT SURE IF I ANSWERED ALL OF YOUR QUESTION ON HOW THESE MATERIALS ARE DESIGNED AND WHETHER THEY 8REAK AND SO FORTH, BUT, IN FACT, IT WOULD BE VERY DIFFICULT TO DAMAGE THE SYNTHETIC MATERIALS IN THE EVENT OF ANY EARTHQUAKE, PROBABLY A MAGNITUDE OF 12, IF YOU REALLY WANTED TO LOOK AT IT.

THE SYNTHETICS WITH THE TYPE OF ELASTICITY THEY POSSESS, IT IS VERY DIFFICULT TO ACTUALLY DAMAGE THEM.

CHAIRMAN MORRISON: ARE THERE ANY FURTHER QUESTIONS?

MR. MEDEARIS: (VON) EARLIER IT WAS STATED THAT IN THE DEVELOPMENT OF THIS SYNTHETIC LINING THERE WAS 100 YEARS IN Tt-IE TESTING.

WHERE DO WE JUSTIFY THIS? THERE'S NOBODY IN THE ROOM THAT HAS SEEN AROUND 100 YEARS AGO.

I WOULD LIKE TO UNDERSTAND WHERE THIS IS BROUGHT IN, 100 YEARS OF TESTING.

CHAIRMAN MORRISON: I BELIEVE THOSE ARE ACCELERATED TESTS.

MR. MEOEARIS: HOW 00 YOU ACCELERATE 100 YEARS? I'M KIND OF PUZZLED ON THAT.

MR. SHAW: BILL ROSS IS AN ENVIRONMENTAL ENGINEER. HE HAS DONE A LOT OF STRUCTURAL WORK AND SO FORTH. THAT IS A PERFECT QUESTION FOR HIM.

MR. ROSS: THE WAY THEY ARE TESTING SYNTHETIC LINER MATERIALS, THESE ARE FAIRLY NEW MATERIALS AND OBVIOUSLY NEVER WERE AROUND 100 YEARS AGO. WHAT THEY DC IS WHAT IS CALLED AN ACCELERATED TEST IN THE LASORATORY.

THEY PUT THIS MATERIAL INTO A SOILING VATOF THE WORST CHEMICALS THAT THIS LANDFILL COULD EVER SE EXPOSED TO, AND ACTUALLY THE ACTUAL METHOOS (A PERSON COUGHING) EPA TEST, AND THEY PUT THE WORST POSSISLE MATERIALS INTO THE DIFFERENT CHAMBERS THAT ARE HEATED UP AND USED TO MOOEL THE ACCELERATED AGING OF THE MATERIAL, SC OBVIOUSLY YOU CAN'T TEST FOR 100 YEARS AND THEN SAYITIS READY, SO YOU 00 THIS ACCELERATED TYPE TESTING.

IT IS THE SAME TYPE OF THING THAT GOES ON IN STEEL WHEN YOU 00 CORROSION STUDIES.

YOU CAN'T JUST WAIT TO SEE IF A STRUCTURE IS GOING TO CORRODE OVER THE NEXT 20 YEARS OF OPERATION LIKE A 8RIOGE STRUCTURE, SO YOU DO AN ACCELERATED CORROSION TESTING IN THELABORATORY.

MR. MEDEARIS: (VON) SO THIS IS BASICALLY LIKE A HYPOTHESIS. IT IS AN EDUCATED GUESS?

MR. ROSS: NO. IT IS ACTUALLY -- IT ACTUALLY IS A SCIENTIFIC APPROACH WHERE IT IS GIVEN UNDER A VERY INTENSE ENVIRONMENT THAT MATERIAL HAS NEVER ACTUALLY BEEN

EXPOSE0 TO, SAY, AT LEAST 100 YEARS.

IN FACT, THEY ARE FINDING NOW THAT -- THIS IS THE ACD MATERIAL THAT IS OPPOSED TO THE PREVIOUS MATERIALS THAT WE WERE USING IN THE INSTRUMENT IS 8ECAUSE THE MATERIAL IS SO UNREACTIVE TO ORGANIC CHEMICALS, INORGANIC CHEMICALS, SUNLIGHT, YOU NAME IT, BUT THE MATERIALS ACTUALLY ARE HARD TO WORK WITH IN THE FIELD, 8ECAUSE ABOUT THE ONLY THING YOU CAN 00 IS MELT IT UNDER HIGH TEMPERATURES TO BEABLE TO SEAM IT TOGETHER. WHEN YCU ARE AKING SEAMS, YOU CAN'T USE CHEMICALS TO 80N0 IT OR TO ETCH IT IN ANY WAY LIKE YOU COULD WITH THE PREVIOUS LINER IN THE PAST, AN0 THE APC TODAY IS EXPECTED TO LAST OVER 100 YEARS, WELL OVER 100 YEARS, INTO THE LONG TERM, 8UT THERE ARE OBVIOUSLY STILL CONSIDERATIONS WITH SYNTHETICS ALONE.

THAT IS WHY SYNTHETICS AREN'T THE ONLY COMPONENTS IN LANDFILLS, AND THE REASON YCU HAVE WHAT IS CALLED THE COMPOSITE LINER, IF- WE LCOK AT THIS CROSS-SECTION RIGHT HERE, ACTUALLY THIS CROSS-SECTION IS WHAT IS CALLED A CLASS 1 LANDFILL LINER CROSS-SECTION, WHICH DOWN AT THE BOTTOM HAS THREE FEET OF IMPERMEABLE CLAY.

NOW, YOU MEASURE THE PROPERTY OF THIS BYTHE PERMEABILITY OF THE CLAY IS REALLY THE ABILITY FOR LIQUIDS TO BEABLE TO MOVE THROUGH IT, AND WHEN IT IS VERY IMPERMEABLE, IT MEANS THAT THE MATERIALS CAN'T MOVE THRGUGH IT HARDLY AT ALL.

NOW, THIS MATERIAL HERE IS EQUIVALENT TO -- I DON'T KNOW HOW MANY HUNDREDS OF FEET OF CONCRETE -- BUT

THIS CLAY IS ACTUALLY VERY MUCH MORE IMPERMEABLE THAN EVEN CONCRETE CEMENT, BUT ALONE WE HAVE SEEN THAT PROBLEMS IN THE PAST HAVE HAPPENED BECAUSE OF POTENTIAL PROBLEMS WITH CLAY LINERS, SO WITH SYNTHETICS, EVEN THOUGH THEY ARE ONLY ABOUT THAT THICK, THEY PROVIDE A VERY HIGH LEVEL OF CONTAINMENT, BUT THEY ARE ONLY ABOUT THAT THICK, SO THE ENGINEERING SOLUTION TO THAT IS TO PUT CLAYS AND SYNTHETICS TOGETHER IN A STAGE SYSTEM SO THAT YOU DON'T JUST HAVE CLAY OR SYNTHETIC.

IN FACT YOU HAVE CLAY AND THEN SYNTHETIC AND THEN A DRAINAGE SYSTEM AND THEN MORE SYNTHETICS, THEN ANOTHER DRAINAGE SYSTEM AND THEN MORE DIRT AS A PROTECTION FOR THE OTHER SYNTHETIC 8EFORE YOU PUT ANY WASTE IN THERE AT ALL.

SO IT IS A SYSTEM THAT INCORPORATES ITS OWN BACKUP, AND THE GEOSYNTHETICS ARE ONLY CNE PART OF THE OVERALL SYSTEM.

SD THE ANSWER, IN SHORT, S THAT THE WAY THIS MATERIAL EVOLVED FOR 100 YEARS IS BASED ON LABORATORY TESTING UNDER HIGH TEMPERATURES AND VERY AGGRESSIVE CHEMICAL REAGENTS.

CHAIRMAN MORRISON YOU HAD A QUESTION, TRINA?

MRS. HAMBY: BILL, YOU MENTIONED THAT . DRAINAGE.

COULD YOU EXPLAIN WHAT THAT DRAINAGE WOULD BE COMPOSED OF?

MR. ROSS: THE DRAINAGE IN THE LANDFILL?

MS. HAMBY: YES, FROM THE LANDFILL.

MR. ROSS: IF WE LOOK AT THIS CROSS-SECTION RIGHT HERE, ACTUALLY BECAUSE ONE PIECE IS MISSING -- MAYBE NOT.

IN FACT, WHY DON'T I GO OVER THIS ONE RIGHT HERE REAL QUICK.

I WILL KEEP THIS SHORT.

RIGHT BETWEEN THIS MEMBRANE AND THIS MEMBRANE -- THIS IS IMPERMEADLE, SO YOU HAVE GOT TWO, WHAT WE CALL A LEACHATE SYSTEM.

NOW, A LEACHATE IS ANY LIQUIDS THAT ARE GENERATED FROM THE LANDFILL.

NOW, ON TOP OF THAT YOU ALSO HAVE ADRAINAGE SYSTEM, THIS SYTEM RIGHT HERE.

IF WE WERE TO LOOK AT A PROFILE OF THE LANDFILL, YOU HAVE THIS COMING UP HERE, THIS WASTEMATERIAL UP HERE, AND OBVIOUSLY IT GENERATES LIQUID. WE HAD THAT IN THE RECENT STORM, AND IT GOES DOWN AT THIS COLLECTION AREA, AND THIS COLLECTION DRAINAGE MATERIAL GOES INTO A SUMP, AND' THAT SUMP DOUBLE-PUMPS AND PUMPS THAT MATERIALS CUT, AND IT IS TREATED AS HAZARDOUS WASTE, AND IT HAS ITS OWN SPECIAL APC CODE, IT HAS VERY SPECIFIC STANDARDS ASSOCIATED WITH IT.

AND YOU TREAT THAT AS HAZARDOUS BECAUSE IT IS IN YOUR UNIT.

NOW, THE REASON YOU WANT TO REMOVE THE LIQUIDS FROM THE LANDFILL IS IF YOU DON'T HAVE LIQUIDS, YOU DON'T HAVE AN ABILITY FOR WASTE TO ESCAPE CONTAINMENT

BECAUSE SOLIDS DON'T MOVE THROUGH OUT SOLIDS, THAT IS, THIS BOOK ON THIS TABLE IS NOT GOING TO MOVE THROUGH THE TABLE, 8UT IF YOU WERE TO, OVER THE LONG TERM, PUT SOME KIND OF LIQUID ON THAT TABLE OR, SAY, A SPONGE, LET'S SAY A SPONGE -- IF YOU WERE TO PUT SOME SOLID OBJECT ON TOP OF THAT QUARTER, IT IS NOT GOING TO MOVE THE SPONGE, 8UT IF YOU PUT LIQUID ON TOP OF THAT, IT WILL GO THROUGH THE SPONGE.

IT IS LIKE SALT. IF WE HAVE A SPONGE ANDWE PUT MORE SALT ON TOP OF THAT SPONGE, WE CAN LOOK AT THE LITTLE PILE OF WHITE SALT, AND IT IS NOT GOING TO MOVE ANYWHERE.

NOW LET'S POUR WATER ON THAT, AND IT DISSOLVES THE SALT, AND WE MOVE IT RIGHT THROUGH THE SPONGE, 8UT THE SALT CAN'T MOVE WITHOUT THE WATER, AND THE WATER IS .A TRANSPORT MECHANISM, AND THAT IS THE SAME THING HERE IN THE LANDFILL DESIGN. WHEN YOU REMOVE THE WATER, YOU REMOVE THE ABILITY FOR THE LEACHATE TO ESCAPE CONTAINMENT, SO YOU DON'T JUST DO THAT. YOU DON'T REMOVE THE LIQUID RIGHT HERE, AND WHAT IS CALLED THE PRIMARY LEACHATE SYSTEM, BUT YOU ALSO MOVE IT IN CASE Ii GOES BEYOND THE FIRST LINE, WHICH IS A PRIMARY LINER, AND IT GOES BEYOND THE PRIMARY LINER, AND YGU'VE GOT ANOTHER COLLECTION, AND YOU REMOVE THAT. IN FACT, THE PERMIT AND THE CONDITIONAL USE PERMIT, THE APC PERMITS, THE REGIONAL PERMITS, ALWAYS SPECIFY THAT THAT MAXIMUM LEVEL OF LIQUIDS THAT YOU HAVE IN THE SUMP OF THIS SECOND-MOST COLLECTION AREA IS ONE FOOT. YOU ONLY HAVE ONE FOOT OF LIQUID.

IF YOU DON'T HAVE LIQUID IN HERE, THEN YOU

CAN'T GO TO THE LANDFILL, SO THAT IS WHY, THE WHOLE REASON, THERE IS A REDUNDANCY IN THIS DESIGN, TO PROVIDE A SYSTEM WHERE YOU CAN REMOVE THE LIQUIDS AND, THEREFORE, PROVIDE AN ABILITY FOR THE SUMP TO TRANSPORT OUT.

CHAIRMAN MORRISON: THANKS, BILL, FOR KEEPING IT SHORT.

MRS. HON: NOT TO MAKE THIS ANY LONGER, BUT I DID WANT TO REFER YOU TO A SECTION IN THE EIR THAT DESCRIBES WHAT BILL JUST DESCRIBED, AND THAT IS ON PAGE 2-44, AND IN THE PROJECT DESCRIPTION WE DESCRIBE THE LANDFILL LINERS FOR A CLASS 1 LANDFILL AND THE CLASS 2 LANDFILLS, AND THERE IS A DIAGRAM, WHICH IS SIMILAR TO THE ONE ON THE BOARD THAT BILL WAS POINTING TO, BUT THERE IS ALSO DISCUSSION ON PAGE 2-49 OF THE LEACHATE AND REMOVAL SYSTEM THAT BILL DESCRIBED.

CHAIRMAN MORRISON: OKAY. ARE THERE ANY FURTHER QUESTIONS?

DOES ANYONE HAVE ANYTHING ELSE THAT THEY WISH TO ASK?

OKAY. WE WILL CLOSE THE MEETING.

WE THANK YGU VERY MUCH FOR YOUR ATTENTION AND ATTENDANCE, AND THIS WILL GO INTO THE RECORD, AND YOUR COMMENTS WILL BE ANSWERED.

THANK YOU VERY MUCH.

(WHEREUPON PROCEEDINGS CONCLUDED.)

* * * * *

REPORTER'S CERTIFICATE

STATE OF CALIFORNIA)
) ss.
COUNTY OF IMPERIAL)

I, RON FLETCHER, A CERT I FI ED SHORTHAND REPORTER, DO HERESY CERTIFY:

THAT ON SEPTEMBER 12, 1990, IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, I TOOK IN SHORTHAND A TRUE AND CORRECT REPORT OF THE PROCEEDING3 HAD TN THE AFOREMENTIONED CAUSE; AND THAT THE FOREGOING IS A TRUE AND ACCURATE TRANSCRIPTION OF MY SHORTHAND NOTES, TAKEN AS AFORESAID; AND IS THE WHOLE THEREOF.

DATED: EL CENTRO, CALI FORN IA, ____________________, 1990.

____
RON FLETCHER CSR

RF/par

Response to comment from Mr. Remington, page 58, lines 4-13

ERCE has had general discussion with California Department of Fish and Game regarding the status and management strategy for the flat-tailed homed lizard. However, there have not been any specific discussions regarding the GSX site. Fish and Game has had the opportunity to review the Draft EIR, which was circulated through the State Clearinghouse; no comments have been received.

SECTION 4
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APPENDIX A

LETTER FROM SHARI. LIBICKI, PROJECT ENGINEER AT ENVIRON, TO GASPAR TORRES, IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT

ENVIRON

October 8, 1990

Mr. Gaspar Torres
Imperial County Air Pollution Control District
150 S. Ninth Street
El Centro, CA 92243

Dear Gaspar:

I have reviewed the letter from James Boyd, Executive Officer of the California Air Resources Board, to Richard Cabaniila regarding the Draft Environmental Impact Report (DEIR) for the expansion of the Imperial Valley Facility. Although the letter is intended to address CEQA concerns, many of the comments are focused on the ATC application and the draft risk assessment. The concerns raised in the letter are discussed here in the order that they appear. The location of the quotes. and quotes from the letter appear in boldface. The response to each concern raised appears below the quoted concern.

Page 2; first paragraph

The DEIR relied on the modeling results from the proposed ATC **and** findings of the risk assessment to describe expected project air quality impacts.

> In fact, the Draft Risk Assessment that is incorporated in the DEIR by reference did not rely solely on the dispersion or emission information presented in the ATC. This is clearly stated throughout Chapter 4 of the Draft Risk Assessment.

Page 2; paragraph 3

Best available control technology **(BACT)** measures may not have been **fully** explored for the mitigation of **NOx,** HC and **PM10** emissions.

> BACT was applied to the emissions estimates from the facility.

ENVIRON . Counsel in Health and Environmental Science Corporation
Marketplace Tower. 5820 Shellmound Street, Suite 700 Emeryville CA 94608 (415)655-7400 FAX (415)655-9517

Page 2; **paragraph** 3

Although a risk assessment analysis was prepared, the analysis itself was not incorporated in the **DEIR for public review.**

The risk assessment was incorporated by reference.

Enclosure; Point 1. Air Quality Standards

The mitigation measures proposed in the DEIR on pages ES-8,9 and 10 and on page 3-151, note that appropriate sources capable of providing emissions reductions and/or offsets should be investigated. In addition, GSX is committed to investigating the availability and feasibility of NO_x controls for major onsite heavy equipment. The possibility of securing PM_{10} offsets is clearly contemplated on page ES-10 of the DEIR.

Enclosure; Point 2. Air Quality Monitoring

The Hazardous Waste Facility Permit that **GSX** is seeking from the California Department of Health Services and the United States Environmental Protection Agency typically require that the monitoring plan be developed in phases. The first phase is designed to characterize the meteorological conditions at the Facility that affect the transport of hazardous constituents and identify the hazardous constituents being emitted into the air from the Facility. During the second phase, the monitoring of selected identified chemicals takes place. The phased approach used will ensure that all chemicals of concern that may be emitted from the operating Facility are monitored. This final program can then confirm that offsite health risks are not significant. The specifics of the phased approach are typically detailed in the Facility's Hazardous Waste Facility Permit. The air monitoring plan that results from this process is subject to DHS, EPA, and (through the DHS) ARB review.

The meteorological information required for the design of the second phase of the monitoring plan must be gathered for at least one year[1], so that appropriate modeling can be performed. The collection of this meteorological data began in March, 1990.

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[1] USEPA. Guidelines on Air Quality Models (Revised) 1986. p. 9-12.

Enclosure; Point 3. **Onsite Laboratory**

The description of the onsite laboratory can easily be included in the final EIR.

Enclosure; **Point** 4. **Waste Stream Characterization**

The 1985 UCD database was chosen after a considered search that included California government agencies, the EPA, and literature available through computerized search systems, including the ENVIROLINE database. Individuals contacted regarding available data include Dan Garcia of the Office of Hazardous Waste at the DHS, Gail McNiel at the DHS, Jim Behrmann at CARB, and Bob Frank at the State Board of Equalization.

I discussed the 1989 DHS database with Dan Garcia on October 27, 1989, and at that time, he said information for inclusion in the 1989 biennial generators report was being gathered. He stated that they were currently attempting to do a mass balance on the 1987 data, and that he would look at the waste profiles for each facility. He also stated that the information from the 1987 biennial generator's report was unavailable until sometime in 1990. Gail McDonald gave me a list on the information available from the DHS at that time in either digital or hard copy format. Those databases were compiled from manifest information, and did not contain sufficient chemical composition information for use in a processing model.

I also discussed available information with Bob Frank, of the office of the State Board of Equalization. On October 23, 1989, he stated that, as they set and collect taxes from hazardous waste generators, they have a more complete set of data than does the DHS, but they neither have chemical breakdown of the information, nor do they have information on waste generated at Federal facilities.

Thus, none of the databases available at the time that the ATC was written (October, 1989) was as complete as the 1985 database that was used. In addition, to containing chemical specific material-balanced information on the hazardous waste streams, the UCD database contains quality-controlled information and was published by an independent unbiased researcher.

Enclosure; **Point** 5. Waste Stream **Characterization**

The "unknown" portion of the waste was not omitted from the emission rate calculations. Because no information was available for that portion of the waste, it was assumed that the average makeup of that unknown portion was identical to the average makeup of the known portion of the wastes. Therefore, this approach does exactly what is suggested in the letter, in that "statistics derived from a. known portion of the waste" were used to "estimate an associated unknown portion."

Enclosure; **Point** 6. **Suppressant Foam Efficiency**

The vapor-suppressant foam proposed for use at the Imperial Valley Facility **(3M FX-9162** foam with FX-9161 stabilizer) has been demonstrated to reduce hydrocarbon emissions by 99 percent, relative to uncontrolled emissions, when applied at an expansion ratio of 6-to-8:1 on a flat surface in a desert climate (Twentynine Palms, California)[2]. This level of control was maintained at the longest period tested (seven days). Although the demonstrated level of control is somewhat lower for sloped surfaces, the surface area of the edges of a lift of waste is a small fraction of the total area of exposed waste.

Recent studies of stabilized foam control efficiency for remedial excavation activities have been completed at the McColl waste site. The results of these studies are as yet unavailable. The McColl study, however, tested foam efficiency under conditions quite unlike those under which foam will be used at the Imperial Valley Facility. Differences between the McColl studies and the intended use of foam at the Imperial Valley Facility include:

- Much of the waste at the McColl site has extremely low pH. If such waste were disposed of at the Imperial Valley Facility, it would be stabilized, resulting in near-neutral pH.

- Much of the waste at the McColl site has free organic liquids that periodically seep or ooze out of the surface. No wastes disposed of in the landfills at the Imperial Valley Facility may have free liquids. Such wastes, if received at the Imperial Valley Facility, will be stabilized, chemically and physically binding such liquids.

- The McColl study evaluated the effectiveness of foam in reducing emissions during excavation. The excavation was carried out inside a temporary enclosure. Due to potentially high concentrations of toxic gases inside, all personnel were working in high-level protective -gear, including supplied-air respirators and full Tyvek suits. In such conditions, it was

[2] 3M Foam Evaluation for Vapor Mitigation at 29 Palms. California - Technical Memorandum. Radian Corporation. June, 1987. p. 3.

undoubtedly difficult to apply foam as effectively as could be done in an open area such as the landfills at the Imperial Valley Facility.

- The surface of an excavated area is rarely level as excavation is proceeding. In contrast, the surface of waste in the landfills at the Imperial Valley Facility is groomed and compacted to achieve a smooth, level surface. For this reason, the uniformity of depth and continuity of the foam can reasonably be expected to be much greater at the Imperial Valley Facility than at the McColl site during the excavation studies.

Based on the similarities and differences of the two studies to the climate and intended conditions of use of stabilized foam at the Imperial Valley Facility, it is reasonable to conclude that the control efficiency measured in the Twentynine Palms study much more accurately represents the efficiency of foam in its intended use at the Facility than those in the McColl study.

In addition to the control of organic vapors from the Class I and II landfills by the use of stabilized foam, these emissions will be further controlled to an unknown degree due to the stabilization of the waste. The stabilization process produces solid chunks of waste similar to concrete. The degree to which stabilization will further reduce emissions has not been studied, to our knowledge. However, it will add to the control of organic vapor emissions provided by the stabilized foam.

Enclosure; Point 7. Emissions of Adsorbed Organics

The carbon used in the system would not be regenerated on site, but would either be taken offsite for regeneration, or disposed in the landfill. Carbon regeneration facilities are designed to efficiently remove and dispose of the adsorbed material according to RCRA requirements. Neither method would add to the overall emissions from the facility. The alternative technology section of the EIR does address alternative technologies, such as thermal oxidation.

Enclosure; Point 8. Current Facility Emissions

The Draft EIR notes that the emissions (volatile organic compounds and particulate matter) from the current Class I landfill would be no greater than that estimated for the Class I landfill in the Master Plan. There is a table that summarizes the risk in the Draft Risk Assessment for the Class I landfill, on page 6-10. This page notes that the risks would be far less than the de minimis level of 10^{-6}.

Enclosure; Point 9. Compounds of Concern

The risk assessment considers the tetrachloroethylene, 1,4-dioxane, arsenic and beryllium and nickel as chemicals of concern for catastrophic release only, from the proposed facility. There are clearly differences between chemicals that are of concern due to catastrophic releases, and those released during routine operations. The chemical selection for routine operations was justified in Chapter 4 of the Draft Risk Assessment, and does not include those chemicals listed above.

Enclosure; Point 10. Multipathway Risk Assessment

Due to the conservative assumptions used to estimate air concentrations and health risks in this assessment, the estimates of inhalation risks are health-conservative. In addition, the estimated health risks to nearby residents from inhalation, a primary pathway of exposure, are not significant for all exposure scenarios. Based on past experience with similar risk assessments, the contribution to the overall risk from secondary pathways such as soil ingestion and dermal absorption will be considerably smaller than the risk from direct inhalation due to the small contribution to soil concentration from the settling dust. Therefore, little error would be expected in the total risk due to the exclusion of these pathways from the current assessment.

Enclosure; Point 11. CAPCOA Cancer Potencies

The current health risk assessment has used cancer slope factors (CSFs) derived by the EPA[3] in estimating cancer risks to nearby residents. Alternative CSFs have been derived by the DHS/ARB[4] for benzene, cadmium, and chromium VI. Use of the DHS/ARB CSFs in this current assessment would increase the estimated benzene inhalation risks by a factor of 6, the estimated cadmium inhalation risks by a factor of 7, and the estimated chromium VI inhalation risks by a factor of 12.

This change in the CSF would effect the estimation of cancer risks due to inhalation under two of the "Master Plan" facility exposure scenarios. Under the first scenario, the inhalation of dusts and vapors from the Class I landfill, the

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[3] U.S. Environmental Protection Agency (USEPA). 1990. Integrated Risk Information System (IRIS). Environmental Criteria and Assessment Office, Cincinnati, OH.

[4] California Air Pollution Control Officers Association (CAPCOA). 1987. Toxic Air Pollutant Source Assessment Manual. Volume A. October 1.

estimated inhalation cancer risks for residents at the lemon grove would increase from 3 x 10^{-7} to 1 x 10^{-6} while the estimated inhalation cancer risk for residents of Westmorland would increase from 3 x 10^{-8} to 1 x 10^{-7}. A change in the CSF under the second scenario, inhalation of chemicals from the Hazardous Waste Treatment Area, would increase the estimated inhalation cancer risk for residents at the lemon grove from 1 x 10^{-6} to 2 x 10^{-6} and increase the estimated inhalation cancer risks for residents of Westmorland from 1 x 10^{-7} to 3 x 10^{-7}. Because of the conservative nature of exposure assessments and CSFs, even the revised risks are not significant.

In addition, the CAPCOA Manual' lists both cadmium and chromium VI as carcinogenic by the oral route. This, however, is in contrast to current EPA reports[6] which cite inadequate evidence for carcinogenicity of these compounds by the oral route. Both the EPA Region IX[7] and the DHS[8] state "Chromium VI is carcinogenic by inhalation, not by other routes". In addition, the DHS guidelines for Proposition 65 lists both cadmium and chromium VI as chemicals which present no significant risk of cancer by the route of ingestion[9]. Thus, calculating ingestion cancer risks for these metals would be inconsistent with risk assessment guidance and practices from EPA and DHS.

Use of the DHS/ARB oral CSF instead of the EPA CSF for benzene would increase the estimated ground water ingestion risks from benzene by a factor of 6. However, this would have no effect on the total risk under the two groundwater scenarios, ingestion of groundwater contaminated from landfill leachate and ingestion of groundwater contaminated from a failure at the Hazardous Treatment Area, due to the small contribution from benzene to the overall risk.

'California Air Pollution Control Officers Association (CAPCOA). 1987. Toxic Air Pollutant Source Assessment Manual. Volume 1. October 1.

[6]U.S. Environmental Protection Agency (USEPA). 1989. Health Effects Assessment Summary Tables. OERR 9200.6-303-(89-4). October.

'U.S. Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund Human Health Risk Assessment. U.S. EPA Region IX Recommendations (Interim Final). December 15.

[8]California Department of Health Services (CDHS). 1990. Technical Standard for Documentation and Format of a Multimedia Baseline Risk Assessment for Hazardous Waste Sites and Permitted Facilities. Toxic Substances Control Program. March.

[9]California Health and Welfare Agency (CHWA). 1988. Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 6.5). California Code of Regulations, Title 22, Division 2, Section 12000 et seq.

I hope that this information is of use to you. Please let me know if I can be of further assistance.

Sincerely,

Shari Libicki
Sr. Associate Engineer

cc: Mr. Danny Shaw, GSX
Mr. Jurg Heuberger, Imperial County Planning Department
MS. Katherine Hon, ERCE

APPENDIX B

WASTE ANALYSIS PLAN
SECTION 3.3 OF GSX RCRA PART B
PERMIT APPLICATION

3.3 WASTE ANALYSIS PLAN

This Waste Analysis Plan has been developed for the expansion of the Imperial Valley facility, located in Imperial County, California. The plan has been prepared in accordance with Federal regulations set forth in 40 CFR 264.13(a),, (b), and (c) and State regulations presented in 22 CCR 67102. The plan is a part of the RCRA Part B permit application. A copy of the approved plan and any approved revisions will be kept on file at the facility and will be available for inspection.

This plan documents the analyses required to safely treat, store, or dispose of the wastes accepted at the facility. The plan describes the methodology and frequency for sampling and analyzing predisposal samples and incoming loads of waste, treatment verification, and the associated quality control/quality assurance procedures.

The term "EPA hazardous waste" refers herein to a waste considered hazardous by both the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services (DHS). A "California hazardous waste" is a waste designated as hazardous by DHS, but not by EPA. A "California nonhazardous waste" is a waste considered nonhazardous by both EPA and DHS.

All wastes received by the Imperial Valley facility will be analyzed according to the procedures described in this plan to ensure compliance with all applicable permits and regulations.

3.3.1 Identification of Wastes

Wastes that are EPA hazardous, California hazardous, or California nonhazardous may be accepted for management at the Imperial Valley facility. Wastes that are acceptable for storage, treatment, or disposal are also limited by the EPA permit, the DHS permit, the Imperial County Conditional Use Permit (CUP) or subsequent conditional use permits, and the Waste Discharge Requirements issued to the facility by the Regional Water Quality Control Board (RWQCB), Region

VII.

3.3.1.1 List of Accentable Wastes

GSX will continue receiving those wastes that have historically been accepted at Imperial Valley facility and to receive additional types of wastes for treatment and disposal. The historically acceptable waste streams for WMU LC-1 and their respective EPA and California waste codes are presented in Appendix C-5.

The facility may accept the following wastes for treatment and disposal within the limits of existing and future conditions:

* EPA hazardous wastes listed in 40 CFR 261
* California hazardous waste as defined in 22 CCR 66693
* Extremely hazardous waste as defined in 22 CCR 66060 and 66720
* Special waste as defined in'22 CCR 66195 and 66740
* Ignitable and reactive wastes as defined in 22 CCR 66702 and 66705
* Nonhazardous wastes
* Designated wastes as defined in 23 CCR 2522.

In addition, the facility may accept the following specific hazardous wastes to the extent allowed by variances, treatment standards, and other criteria:

* Restricted wastes listed in 22 CCR 66900
* Wastes with heating values of more than 3,000 Btu/lb
* Waste with volatile organic compounds at concentrations greater than 1 percent as defined in California Health and Safety Code, Section 25155.5.

Item IV of the Part A application (Section 2.0) lists the wastes that may be accepted for disposal, treatment; or storage if their waste characteristics do not preclude acceptance. The landfills will also receive waste materials resulting from the closure of existing onsite waste management units and the residuals of onsite treatment processes.

3.3.1.2 List of Unacceptable Wastes

Waste acceptance is limited by restrictions in the Waste Discharge

Requirements issued by the RWQCB, the CUP issued by Imperial County, and permits issued by EPA and DHS. In addition, the Imperial Valley facility will not receive the following categories of wastes:

* Radioactive wastes
* PCB wastes $\geq$ 50 ppm
* Class A Explosives
* Putrescible wastes
* Etiological wastes
* Compressed gas wastes.

3.3.2 Hazardous Waste Management Unit Process Acceptance Limits

Acceptance limits have been established for each proposed hazardous waste management unit (WMU) to control performance characteristics of the units, to prevent uncontrolled reactions, and to comply with regulatory restrictions. These limits provide the criteria and logic for selection of waste analysis and sampling protocol parameters. The limits should not be considered absolute or unchangeable; they may be revised as a result of new waste streams, market conditions, bench-scale treatability testing, and/or new regulations. Continued acceptability and compatibility of wastes will be evaluated whenever the acceptance limits are revised.

3.3.2.1 Hazardous Waste Stabilization Unit (HWSU)

Only waste receipts amenable to stabilization and/or treatment will be processed in the HWSU. Waste acceptability is dependent on waste composition, concentrations, compatibility and on the results of the bench-scale treatability test. Waste acceptability will be determined only after the results of the treatability test are known. The bench-scale treatability test is described in Section 3.3.3.5. Ignitable wastes will only be placed in tanks constructed of steel and equipped with explosion-proof pumps and motors until the waste is treated such that it is rendered nonignitable. Wastes with high concentrations of soluble salts, sodium salts, or sulfates will be limited because these constituents may retard curing times.

Incompatible wastes will be stored and processed separately. Storage bins or tanks that previously held an incompatible waste will be cleaned prior to placement of other wastes for storage or treatment.

3.3.2.2 Liquids Receiving and Evaporation Tanks

Process acceptance limits for the liquids receiving and evaporation tanks are the same as for the HWSU (Section 3.3.2.1). The air stripping process is designed to treat waste streams containing up to lo-percent organic compounds. The organic compound removal efficiency is not a constant: rather, it is dependent on waste stream composition, volatility, and stripping characteristics such as the Henry's law distribution coefficient between the vapor and liquid phase. The organic compound removal efficiency will be determined by removal efficiency graphs. The final concentration in the treated waste (effluent) must meet applicable land disposal restrictions and air permit limitations if evaporation is to follow treatment.

The liquid treatment process for waste neutralization is capable of treating waste streams with a pH >1.

3.3.2.3 Liquids Bulking Area

Acceptance limits for the liquids bulking area are the same as those described below for the drum storage area (Section 3.3.2.4).

3.3.2.4 Drum Storase Area (DSA)

The acceptability of waste at the DSA is dependent on the immediately available storage capacity and the ability to separate incompatible wastes. The DSA is designed to accept waste streams that are ignitable, corrosive, toxic, reactive, and acutely hazardous. The drums supplied by generators will be evaluated for structural integrity and compatibility with stored wastes. Drummed waste will be placed in a storage area of the DSA based on waste characteristics and compatibility. The concrete slab of the DSA will be graded to provide independently drained areas for the segregation of incompatible wastes. Incompatible wastes will be stored separately and may also be segregated by means of a berm, dike, sloping floor, or other physical means.

3.3.2.5 Small-Uuantity Generator (SQG) Container and Laboratory Pack Building

Acceptance limits for the SQG container and laboratory pack building (SQG & LPB) are the same as for the DSA (Section 3.3.2.4).

3.3.2.6 Landfills

Only wastes that contain no free liquids and that are not restricted from land disposal by 40 CFR 268 or 22 CCR 66900 will be accepted in these WMUs. Intact drums or tanks will not'be placed in the landfills and large, solid, sharp objects will not be placed within 3 feet (vertically) of the uppermost synthetic liner.

3.3.2.7 Area 30 Tank Farm

The liquids to be stored in the Area 30 Tank Farm will be on-site generated' liquids such as monitoring well purge water, landfill leachate, and equipment wash water.

3.3.3 Predisposal Evaluation

The predisposal evaluation (PDE) process is used to prescreen waste prior to its acceptance at the facility, as illustrated in Figure 3.3-l. To initiate the PDE process, the waste generator must submit a representative sample of the waste; accompanied by the following forms:

* Waste Predisposal Evaluation (PDE) form (Exhibit 3.3-l)
* Restricted Waste Notification and Certification (RWNC) form (Exhibit 3.3-2)
* Chain-of-Custody Record (Exhibit 3.3-3).

The PDE form supplies initial information about volume and waste characteristics, handling procedures, generator identification, and shipping information. The RWNC form is used by the generator to certify whether the waste is subject to the land disposal restrictions specified in 40 CFR 268.

Certification that a waste is either exempt or does not require further treatment prior to land disposal will reduce the need for facility personnel to test all wastes for the complete list of restricted parameters. The Chain-"of-Custody Record provides documentation to the laboratory that the generator collected a representative sample and gives information on the sampling method, labeling, and transportation. All three forms must be completed and signed by the generator, or authorized designee, and must be accompanied by a representative sample of the waste stream.

3.3.3.1 Testing Program and Assignment of Laboratory Identification Number

Samples 'will be collected by the waste generator, or designee, based on approved sampling protocols such as those outlined in EPA SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986b). The methods and equipment used to sample waste materials will vary with the form and consistency of the waste. Asbestos-contaminated solid waste will not be sampled. Information on the origin and characteristics of the waste will determine the treatment/disposal methods.

The sampling method chosen must be capable of obtaining a representative sample. A representative sample is defined in 22 CCR 66178 as "a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole." Samples of various waste materials should be collected using protocols listed in Table 3.3-2 in order to obtain a representative sample. One function of the PDE and the Chain-of-Custody forms is to document that the sample taken for analysis is a representative sample. The generator, or authorized designee, must sample waste by approved methods and certify that the sample is representative of the waste as it will arrive at the disposal facility.

Samples must be placed in proper containers for the intended analysis or they may be returned to the generator. Containers must be compatible with the hazardous waste samples and must not distort, rupture, or leak as a result of chemical reactions with waste sample constituents. Thus, the generator must know the properties and composition of the waste. Containers must also have adequate wall thickness to withstand handling during sample collection and transport to the laboratory.

Before a sample is accepted for analysis, the responsible laboratory chemist, or appropriated designee, will check the following:

* Examine all sample containers for damage and remove damaged sample containers from the sampling program. The generator may be contacted to submit another sample if the container is damaged.

* Check that the sample container is labeled properly. The label should contain the generator's name, date of sample collection, date of sample receipt, and sample number.

* Check that each sample is accompanied by a Chain-of-Custody form and corresponding PDE and RWNC forms. For samples that are to be cornposited, one PDE form, one RWNC form, and one Chain-of-Custody form per sampling set will be sufficient.

If a sample is deemed acceptable, a laboratory sample ID number will be assigned to it. The sample and one copy each of the PDE, RWNC, and Chain-of-Custody forms will be forwarded to the Laboratory Supervisor, or authorized designee who will then assign analytical tasks to be performed.

3.3.3.2 <u>Sample Tracking and Storase</u>

The Laboratory Supervisor or authorized designee is responsible for receiving, storing, and tracking all PDE samples throughout the analytical process. After the analytical program is defined, samples will be stored and tracked as follows:

* The appropriate preservation/storage methods will be determined based on the following considerations:

  - Specific constituents of known interest

  - Physical state of the sample (e.g., liquid, sludge, or solid)

- Preservation/storage methods

- The length of time between receipt of the sample and subsequent analysis (analysis will be performed as soon as possible after receipt).

* Samples will be tracked through the laboratory using the laboratory sample identification number. Sample splits, labeled with the laboratory sample identification number and date, will be given to the appropriate laboratory sections. A master list will be maintained of the samples, the dates the samples are sent to the different laboratory sections, and the dates that analytical results are expected back. The Laboratory Supervisor or authorized designee will maintain communication with laboratory section leaders in order to locate and/or obtain laboratory results.

3.3.3.3 <u>Parameter Selection and Rationale</u>

The objective of predisposal testing of wastes is twofold: (1) to generate data so that site management can determine whether the waste is acceptable for receipt, and (2) to provide the information necessary for safe, efficient, and effective treatment and disposal of the waste and the proposed method of handling (i.e., treatment, bulking, storage, stabilization, or landfilling).

Data on waste composition and previous waste analysis results are usually available from the generator. All required analytical data may be supplied by the generator. Table 3.3-3 lists the minimum tests for predisposal analysis that will be done for those samples analyzed by the facility, along with the test methods and the rationale for parameter selection. Additional parameters may be selected for analysis, as listed in Table 3.3-4. The decision to perform additional analyses will be based on the physical and chemical characteristics of the waste sample submitted for evaluation, the information provided by the generator on the origin and composition of the waste, and the proposed method of handling (i.e., treatment, bulking, storage, stabilization, or landfilling).

Results of the predisposal analyses will be documented on a form similar to the Predisposal Analytical (PDA) report (Exhibit 3.3-4). The PDA report will be dated and signed by the analysts and reviewed by the Laboratory Supervisor or authorized designee. Quality control data directly applicable to analytical results will be reviewed and approved in accordance with the Laboratory Quality Assurance Program.

Based on the analytical results, additional information may be requested from the generator or from the Laboratory Supervisor. At a minimum, the PDE form, PDA report, and any related forms or information will be incorporated into the facility records management system and will be used as the basis for acceptance or rejection of the waste being considered.

3.3.3.4 Acceptance/Rejection of Waste

The logic path shown in Figure 3.3-l will be followed to evaluate the acceptability of each waste type. This decision will be based upon predisposal data from the generator and from site analyses as follows:

* Waste Description (Item C, PDE and PDA)
  The waste description will be compared with the waste types accepted (Section 3.3.1.1) and not accepted (Section 3.3.1.2) for treatment, storage, or disposal at the facility. If a waste type that is not acceptable at the site appears in Item C, the waste will be rejected.

* Shipping Information (Waste Classification) (Item D, PDE)
  If the waste is described as a restricted waste under Federal or State regulations, the generator or owner/operator of a treatment facility must complete an RWNC form (Exhibit 3.3-2). This form provides generator information required under 40 CFR 268.7(a) and treatment facility information required under 40 CFR 268.7(b). The generator is responsible for determining whether a waste is restricted from land disposal under Federal or State regulations, whether the waste requires treatment to meet applicable standards and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d), and whether the waste qualifies for a nationwide variance, exemption by petition, or a case-by-case extension. Any treatment facility submitting restricted wastes that have been treated to comply with the performance levels specified in 40 CFR 268 Subpart D and all applicable prohibitions set forth

in 40 CFR 268.32 or RCRA Section 3004(d) or State regulations without dilution of the prohibited waste must also submit certifications that the treatment standards have been met. Waste analysis data and treatment standards from the generator and treatment facility will be attached to this form as required by the regulations. The treatment will comply with all State and Federal land disposal restrictions. If the PDE information indicates that the waste is restricted under 40 CFR 268, a completed RWNC must accompany the predisposal sample and each shipment of restricted waste or the waste will be rejected. If the PDE or PDA indicates that the waste is subject to land disposal restriction, but the RWNC form contains a certification that the waste is exempt under 40 CFR 268.5, 40 CFR 268.6, or nation-wide variance, or if the waste does not exceed the treatment standards listed in 40 CFR 268 Subpart D or all applicable prohibitions set forth in 40 CFR 269.32 or RCRA Section 3004(d), the waste stream will be accepted with no further treatment performed and without post-treatment verification analysis. If the chemical composition, as determined during the predisposalevaluation, exceeds the **direct** land disposal concentrations in the CUP or land disposal criteria, bench-scale treatability testing will be performed or the waste will be rejected. As State and Federal land disposal restrictions are developed or revised, they Will be incorporated into the PDE process.

* Generator Characteristics/Composition Certification (Item F, PDE)
  The waste generator or an authorized representative must provide information on waste characteristics and components. This information will be compared with the waste types accepted into the various waste management units. Based on the information provided, further analysis may be required.

* Physical State (Item H, PDE)
  The physical state of the material will be described as a liquid, solid, semisolid (sludge), or wind dispersible, all of which are acceptable at the facility.

* pH (Item I, PDE)
  Liquid waste materials with a pH of 2 or less or a pH greater than 12.5 will require additional waste verification analysis and/or special handling. The waste will be subject to bench-scale treatability testing.

* Flashpoint (Item L, PDE)
  A closed-cup flashpoint less than 140°F (60°C) will indicate that the waste material is ignitable and will warrant additional waste verification analysis and/or special handling. The waste will be subject to bench-scale treatability testing.

* Metals (Item M, PDE and PDA)
  The material will be evaluated against metals restricted pursuant to 22 CCR 66900 to determine treatment requirements. Any waste so restricted will be subject to the bench-scale treatability testing.

* Chemical Composition (Item N, PDE and PDA)
  The range of constituents in the chemical composition of a waste will be used to evaluate whether treatment/stabilization bench-scale testing is required, as described in Section 3.3.3.5.

* Source of Information (Item P, PDE)
  The waste generator will indicate the source(s) of information used to complete the PDE.

Waste incompatibilities will be evaluated by the responsible chemist, or designee, using the Test for Compatibility for Treatment/Disposal (Exhibit 3.3-5). The general outline for performing the waste incompatibility evaluation is as follows:

1. Identify the specific chemicals or classes of chemicals in the wastes.

2. Evaluate the compatibility of the identified components of the waste being disposed with the components existing in selected waste management units.

3. Determine whether an incompatibility problem exists with the wastes in question.

4. Accept or refuse the waste.

A decision will be made to accept or reject the waste stream once the responsible chemist or designee has reviewed and evaluated the PDE and PDA, any other pertinent information submitted by the generator (such as Material Safety Data Sheets), and the results of bench-scale treatability tests (if performed). If the waste stream is deemed acceptable, a facility waste acceptance identification number will be assigned to the waste stream and the following documents will be prepared:

* **Treatment/Disposal** Location Form **(TDLF).** A **sample TDLF** is provided in Exhibit 3.3-6. This form is an internal document that summarizes known information, waste sampling/handling procedures, and treatability requirements for the waste stream. The forms are maintained at the facility. The **TDLFs** are filed in the truck receiving/sampling area by waste identification number.

* Generator Notification Letter. This letter informs the generator that the waste is acceptable at the facility and that the facility has all of the permits to handle the waste properly and it lists the waste identification number to be used in the manifest with each waste shipment. The letter also informs the generator that the waste will require recharacterization if any significant changes occur in the waste stream.

3.3.3.5 Bench-Scale Treatability Testing

The analytical data on the PDE form provided by the generator and the PDA report provided by the laboratory will be compared with the list of acceptable chemical constituents or characteristics and any land disposal restrictions. If chemical constituents or waste characteristics exceed these limits, the waste will be treated to meet the limits prior to land disposal. Bench-scale treatability testing will be performed on the waste to determine the required treatment based upon the contaminant to be treated and the desired degree of treatment. Bench-scale treatability tests may include **pH** adjustment, addition of treatment or stabilizing chemicals, blending for chemical reaction, curing, or other appropriate procedures and processes. The bench-scale unit duplicates the process that will occur in the treatment unit. A sample of the treated waste will then be analyzed to determine whether chemical constituents or characteristics of concern can be treated to meet the limits established in the permits and 40 CFR 268. If treatment achieves these limits, the waste will be accepted from the generator. The results of this testing will be recorded on the Bench-Scale Treatability (BST) form. An example BST form is provided in Exhibit 3.3-7. This form will contain information on the results of the bench-scale treatability tests and will describe the treatment required. The form will be attached to the Treatment/Disposal Location Form (TDLF) to be used for waste verification testing.

Bench-scale treatability testing. for the air stripping unit will consist of using a removal efficiency graph to determine the final waste component concentration. If the final component concentration does not meet land disposal restriction treatment standards or permit requirements, the effluent concentrations will be reevaluated using the removal efficiency graph and a second treatment removal efficiency will be determined. This process will be repeated until treatment standards and/or permit requirements are met. The results of the graphical comparison will be recorded on the BST form.

Candidate waste streams will be evaluated for compatibility with the treatment unit construction materials and with other waste streams being treated at the same time. If a waste stream is not compatible with the unit construction materials, it will not be accepted for treatment.

If two or more waste streams are to be treated in the same unit at the same time, pilot testing for incompatibility will be conducted by mixing small quantities of the wastes together. Indicators of potential incompatibility are as follows:

* Release of heat
* Evolution of gases
* A change in the physical state of the wastes.

If pilot testing shows that the wastes are incompatible, they will not be mixed. The treatment residues and wastes will be removed from the unit, and the unit will be cleaned prior to beginning treatment of the new waste stream.

The treatability test will determine the appropriate volume and rate of treatment chemical addition for the specific waste stream. If, for example, the waste to be treated is acidic, the volume of alkaline material necessary to neutralize the waste will be determined by adding the alkaline material to a sample of the waste until the waste is neutralized. If precipitation of selected heavy metals is also desired, the pH will be adjusted to precipitate the metals of concern. To determine the appropriate pH for_ treating a particular waste, separate containers (beakers) of waste will be neutralized to several different pH values, the waste will be allowed to settle, and the supernatant will be analyzed for the metal(s) of interest. Based upon this analysis, the final pH of the waste necessary to meet treatment objectives will be determined.

During the treatability studies, the treatment chemicals, process rates, retention times, compatibility, etc., will be determined for the proposed treatment process(es). By varying the rate at which the treatment chemicals are added to the waste, temperature effects and gas/vapor formation rates can be observed and flowrates determined so that these conditions can be controlled during full-scale treatment. The evolution of gases, vapor, or mists will be identified during the treatability analysis. Vapor phase emissions will be characterized, and further treatment studies will be carried out if necessary to reduce or eliminate such formation by varying chemical addition rates or the physical equipment used. If vapor control is required, emission controls will be identified and tested during treatability testing to determine their efficiency.

3.3.3.6 Annual Update of Predisposal Analysis

The predisposal analysis will be repeated at least annually to ensure that the chemical and physical characteristics accurately represent the waste and that the treatment methods originally prescribed are still appropriate. The following factors may result in more frequent reevaluation of the waste type:

* Notification from the generator of a change in the process of generation

* Discovery of a significant waste type manifest discrepancy, as defined under 22 CCR 67162

* Discrepancies between incoming load verification analyses (Section 3.3.4) and the PDE information.

The facility records management system will provide lists of predisposal analysis expiration dates by generator and/or waste identification numbers so that samples can be collected for reanalysis. The generator can also notify the facility that an updated sample should be taken for recharacterization analysis as a result of a significant change in the waste or the waste-generating process. If the annual recharacterization data reflect a significant change, the logic path for rejecting or accepting the waste will be reevaluated. Bench-scale treatability testing may also be performed. The generator will be notified that the waste has been recharacterized and is acceptable or unacceptable. The notification will list the updated facility waste identification number, which will be amended to reflect the latest recharacterization, if applicable.

3.3.4 Verification Analysis of Incoming Waste Loads

The goal of the waste verification analysis (WVA), or fingerprint analysis, is to verify that the waste delivered to the facility by the waste transporter has the same salient characteristics as the PDE sample certified by the generator and analyzed by the laboratory. The logic path of the waste verification process is illustrated in Figure 3.3-2. At a minimum, the fingerprint analysis will consist of the parameters listed in Table 3.3-3 and where applicable, Table 3.3-4. Waste received into the DSA and the SQG & LPB areas will be identified through the PDE process and any additional information provided by the generator. Upon receipt, the container labels on all containers will be visually inspected to confirm that waste identified by the container label matches that specified on the approved PDE.

For a single waste stream shipped in multiple containers or drums, a minimum of 10% of the total number of drums in the shipment will be sampled in order to verify that material delivered to the facility has the same characteristics as that identified in the PDE process. Fractions of drums will be rounded to the next whole number of drums.

For wastes contained in multiple drums with a count of less than ten, a minimum of one drum will be sampled.

Lab-packs are shipped in many different categories and will be handled using the following quality control procedures.

GSX personnel are trained to recognize and evaluate those wastes which may be subject to land disposal or other restrictions. Therefore, for those lab packs which GSX processes for shipment, one lab pack per shipment will be evaluated when it arrives at the facility. Lab pack shipments which are processed by others outside the GSX organization (outside generators) will be evaluated at the same frequency as other drummed waste. If the drum(s) used for testing is found to be off ‘specification the entire shipment will be evaluated against the approved.PDE.

Pre-acceptance procedures for lab packs require that packing lists for containers be reviewed by laboratory personnel prior to shipment. This will allow GSX personnel to screen each lab pack container for unacceptable material that is not ammeanable to treatment, storage, disposal, or repackaging for off-site shipment by GSX to another permitted facility that can accept the wastes in question. Those items determined to be unacceptable must be removed by the generator prior to shipment to GSX.

3.3.4.1 Review of Manifests and Waste Identification Numbers

Before a load of hazardous waste will be accepted for treatment, storage, or disposal at the Imperial Valley facility, the waste type **must** first be accepted through the PDE process and must be correctly identified by an internally assigned facility waste ID number. Once the generator has been notified that the waste is acceptable, the waste loads will be accepted at the facility.

The waste transporter will arrive at the security gate and be logged in. The driver will then proceed to the truck/sample receiving area and present the manifest and associated forms to the responsible chemist or designee.

GSX will inspect the manifest for completeness and will verify that the EPA and California hazardous waste numbers are consistent with the information on the Treatment/Disposal Location form (TDLF).

If the facility waste ID number is not on the manifest or if a significant discrepancy is discovered, the generator will be notified. If the discrepancy is resolved, it will be noted on the manifest and the waste verification analysis will proceed. If the discrepancy cannot be resolved, it will be noted in Section 19 of the California Uniform Hazardous Waste Manifest. A letter describing unresolved discrepancies and reconciliation efforts will be submitted to the DHS within 15 days after rejection of the waste, in accordance with 22 CCR 67162(b).

The waste load will be weighed on the facility truck scales, or on alternate scales if necessary, and compared with the manifested volume/weight. If the values are within 10 percent, then no significant discrepancy will be deemed to exist. Differences exceeding 10 percent by weight, or 10 percent by volume for liquids only, will be considered significant. Discrepancies in count (e.g., number of drums in a shipment) will be identified by visual methods. Any variation in the manifested number of containers (drums) will constitute a significant discrepancy. If significant discrepancies occur, the manifest discrepancy procedure outlined in Exhibit 3.3-8 will be followed. Drummed hazardous waste should be marked and labeled in accordance with 40 CFR, 49 CFR, and 22 CCR prior to transportation to the Imperial Valley facility by the generator or his authorized Contractor.

If an EPA waste code restricted from land disposal is specified in Section I of the manifest, the manifest must be accompanied by a Restricted Waste Notification and Certification (RWNC) form.' 'If this form does not accompany the manifest or is not properly completed by the generator or owner/operator of a treatment facility, the generator will be notified. The waste verification analysis will not proceed until the referenced forms are properly executed and submitted.

After the responsible truck receiving personnel have reviewed the manifest for completeness, the waste sample will be tested in accordance with the TDLF. Table 3.3-3 indicates minimal waste verification parameters to be tested, and Table 3.3-5 lists additional waste verification testing that may be done. A representative sample will be collected for fingerprint analyses. Results of waste analyses performed for waste verification will be recorded on the TDLF (Exhibit 3.3-6), as described below:

* Treatment/Disposal Location Form (TDLF) This form is an internal document that summarizes known information, waste sampling/handling procedures, and treatability requirements for the waste stream. The forms will be maintained at the facility and will be filed in the truck receiving/sampling area by waste identification number. The TDLF will provide the following information to the waste receiving/verification operator:

  - Waste ID number
  - Generator name
  - Waste name and type
  - Appropriate protective clothing necessary for handling-the waste
  - Necessary waste verification tests and expected results
  - Treatability requirements
  - Unloading requirements.

3.3.4.2 Sampling Methods and Frequency of Sampling

A representative sample will be collected from each incoming waste load, except for asbestos and large volumes of the same waste from one source (e.g., contaminated soil from a major remedial action site). In such a case, all loads will be visually inspected and at least 20 percent of the loads will be randomly selected, sampled, and analyzed, according to the criteria described in Section 3.3.4.3. Asbestos loads will be visually inspected only.

Samples will be collected by facility personnel at the truck/sample receiving area. Sampling procedures will be in accordance with approved sampling protocols such as those specified by EPA SW-846 and (EPA, 1986b) by the American Society for Testing Materials (ASTM) standards. The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Sample protocols are listed in Table 3.3-2.

Vacuum trailers will be routinely sampled through one of the top ports. For very small volumes, the sample may be taken from a valve. A manifested vacuum trailer acid load with a suspected pH of less than 3 may be initially sampled through the valve to protect the sampler and the operator from exposure to potentially hazardous fumes. After a safety analysis is conducted to ensure that no potential hazard exists, a representative sample will be obtained through the top port.

Closed-bed trucks will be sampled through the trailer access ports. A shallow vertical core sample will be collected from each of two ports and then combined. Open-bed truck loads will be sampled by taking a random grab sample using the appropriate devices identified in Table 3.3-2. Drums will be sampled through bungs and/or other sampling ports.

3.3.4.3 Parameter Selection and Rationale

The rationale for selecting waste verification parameters for the representative sample from each incoming waste load will be based on the information provided during the predisposal evaluation, the waste verification analysis, and the bench-scale treatability test results. This information is summarized on the TDLF and the BST form. The waste verification analysis will be used to screen incoming waste loads for the salient parameters listed on the TDLF. At a minimum, screening parameters will consist of those listed in Table 3.3-3. The responsible chemist or designee may determine additional parameters are necessary for waste verification. In all cases, the waste verification parameters and expected results will be listed on the TDLF. The allowable ranges for the waste verification parameters will be determined by a qualified chemist, based on the predisposal analysis (PDA), information submitted by the generator, and historical data on the waste stream and/or similar waste streams. The allowable ranges for waste verification parameters will generally be unique for each individual waste stream, and a complete waste verification analysis will be performed on most incoming waste loads. For frequent shipments of the same waste received from one source for which a history of previous waste verification analytical results indicates consistent agreement with the TDLF, a complete waste verification analysis will be performed on at least 20 percent of the loads.

3.3.4.4 <u>Acceptance/Rejection Of Incoming Waste Loads</u>

The objective of the waste verification analysis, or fingerprint analysis, is to (1) verify that the characteristics of the incoming waste correspond with the characteristics of the predisposal sample and the manifest, (2) provide information to document that treatment is not required or that the treatment process defined in the bench-scale treatability test should be adequate to treat the waste to meet the parameters listed in the permits and land disposal restrictions, and (3) provide information for any additional bench-scale treatability testing needed to define chemical addition rates for treating specific batch loads.

Data from the waste verification analyses will be compared with the TDLF. If all salient. chemical parameters are within the range listed on the TDLF for the waste being tested, the load will be accepted for subsequent treatment and/or disposal at the facility.

Waste loads may be rejected or may be subjected to further analysis if any of the following is true:

* The waste type is identified as unacceptable, as defined in Section 3.3.1.2

* Chemical composition identified by the waste verification analysis exceeds the maximum concentration range listed on the TDLF' and, in the professional opinion of the responsible chemist or qualified designee, represents a significant discrepancy that

could **affect the** proper treatment and disposal of waste

* Chemical composition identified by the waste verification analysis exceeds the direct land disposal concentration **limits** for **constituents** or **characteristics** listed in the permits or land disposal restrictions.

* Chemical composition identified by the waste verification analysis and confirmed by bench-scale treatability test indicates that the treatment procedures defined in the predisposal evaluation bench-scale testing would not be **sufficient to meet the** limits for constituents or characteristics listed in the permits and land disposal restrictions.

When the permit or land disposal restriction limits are exceeded, as determined by the waste verification analysis, and are not previously identified by the TDLF, a bench-scale treatability test will be performed. If the material can be successfully treated, the load will be accepted. If it cannot, the load will be rejected.

Loads requiring treatment/stabilization will be treated either individually or in batches. Wastes will be managed such that only compatible wastes and those wastes requiring comparable levels of treatment will be processed together. The compatibility of combined waste loads will be verified through the fingerprint analysis. The responsible chemist or qualified designee will determine the treatment required (e.g., pH adjustment, amount of chemical additives needed for adequate stabilization/treatment) and will record the manifest number of all incoming loads to be treated. If necessary, the responsible chemist may direct that a bench-scale treatability test be performed on waste loads to be combined for stabilization/treatment. The responsible chemist will determine the proper treatment required to meet the allowable limits for parameters listed in the permits and land disposal restrictions.

3.3.5 Treatment Verification Analysis

Following the treatment/stabilization of incoming waste, a treatment verification analysis (TVA) will be conducted to demonstrate that the treated material meets all permit or land disposal restriction limits for parameters of concern identified by the predisposal analysis. The logic path for treatment verification is shown in Figure 3.3-2. Shipments of restricted waste will be scheduled for stabilization/treatment to minimize processing of restricted and unrestricted wastes together. Segregation of wastes will also be used to minimize treatment verification requirements.

3.3.5.1 Sampling Methods for Hazardous Waste Stabilization Unit

Treatment in the pug mill of the hazardous waste stabilization unit (HWSU) will produce well mixed and homogeneous waste, which will facilitate the collection of representative samples. Therefore, random grab samples will be taken as the material is discharged from the pug mill into the HWSU holding area. The samples will be collected using a clean metal trowel or shovel and will be placed in containers that are appropriate for the type of analyses to be run. Each sample container will be labeled with a sample number, batch treatment identification number, date, time, and sampler's name.

3.3.5.2 Parameter Selection and Rationale for Hazardous Waste Stabilization Unit

The treatment verification analysis (TVA) will be performed as follows:

* If the waste verification analysis indicates that the untreated waste meets permit and land disposal restriction criteria but fails the paint filter liquids test (EPA Method 9095), the waste will be treated and reanalyzed using the paint filter test to verify that no free liquids are present.

* If the waste verification analysis or data from the generator indicate that the untreated waste requires treatment under the land disposal restrictions of 40 CFR 268, 22 CCR 66900, or any permit, a California Waste Extraction Test (WET), the toxicity characteristics leaching procedure (TCLP), or an acceptable alternative method will be used to evaluate the results with regard to the restrictions. All wastes that have treatment standards specified in 40 CFR.268 and are accepted at the facility for treatment will be analyzed in accordance with the TCLP to verify compliance with the land disposal restrictions.

* If untreated waste is cyanide or sulfide reactive, a sample of the treated waste will be collected and subjected to analysis for cyanide or sulfide reactivity.

* If incoming waste is ignitable, a sample of the treated waste will be collected and subjected to the paint filter test to demonstrate that the waste contains no posttreatment liquids. A flashpoint analysis will be performed if deemed necessary by the Laboratory Supervisor or authorized designee.

The waste material will be placed in a permitted WMU only after the TVA confirms that the treatment performance standards have been met. The responsible chemist, or appropriate designee, will prepare a TDLF (Exhibit 3.3-6) for the treated load and will add the TDLF attachment for landfill disposal, specifying disposal location and wind dispersal controls, if any. The responsible chemist, or appropriate designee, will include with the TLDF the appropriate RWNC required by 40 CFR 268 (see Exhibit 3.3-2). The RWNC will be maintained as part of the operating record for both the treatment units and landfills.

If the TVA indicates that the performance standards have not been met, additional stabilization/treatment will be required and the retreated waste will be subject to a second TVA. If the second TVA again indicates that the performance standards have not been met, the material may undergo additional treatment. If continued reprocessing is not feasible, the waste will be manifested and shipped off site by the generator for alternate treatment in accordance with all applicable regulations.

3.3.5.3 <u>Sampling Methods for Liuuids Receiving and Evaporation Tanks</u>

Random grab samples will be taken as the material is stored in the evaporation tanks. The samples will be collected using a clean coliwasa, tubing, or weighted bottle and will be placed in containers that are appropriate for the type of analyses to be run. Each sample container will be labeled with the sample number, batch treatment number, date, time, and sampler's name.

3.3.5.4 Parameter Selection and Rationale for Liuuids Receiving and Evaporation Tanks

The **treatment verification** analysis (TVA) will be performed as follows:

* If the waste verification analysis or data from the generator indicate that the untreated waste requires treatment **under the** land disposal restrictions of 40 CFR 268, 22 CCR 66900, or any permit, a California Waste Extraction Test (WET), the toxicity characteristics leaching procedure (TCLP), or an acceptable alternative method will be used to evaluate the results with regard to the restrictions. All wastes that have treatment standards specified in 40 CFR 268 and are accepted at the facility for treatment will be analyzed in accordance with the TCLP to verify compliance with the land disposal restrictions.

* If untreated waste is characteristic for corrosivity, the **pH** of the treated liquid will be measured. A final **pH** range of 6.0 to 9.0 is considered adequate for treatment.

* If untreated waste contains solvents not otherwise regulated by the land disposal restrictions, the effluent wastewater will be analyzed for the solvents previously present. The effluentwastewater composition will be compared to restrictions imposed by permit conditions prior to discharge for evaporation.

The waste material will be placed in an evaporation tank only after the TVA confirms that the treatment standards have been met. If the TVA indicates that the performance standards have not been met, additional treatment will be required and the retreated waste will be subject to a second TVA. If the second TVA again indicates that the performance standards have not been met, the material may undergo additional treatment. If continued reprocessing is not feasible, the waste will be manifested and shipped off site by the generator (See Figure 3.3-l) for alternate treatment in accordance with all applicable regulations.

3.3.6 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures will be used for both sampling and analytical techniques. Sampling procedures are discussed in Sections 3.3.3.1 and 3.3.4.2; the test methods for parameters are included in Tables 3.3-3, 3.3-4, and 3.3-5.

Representative waste samples will be obtained using methods and equipment appropriate to the physical and chemical properties of the waste. The selection and use of sampling equipment will be done only by qualified personnel. Except for large shipments of homogeneous wastes from a single source, every waste load will be sampled.

Sampling equipment and containers will be constructed of materials compatible with the wastes. Care will be taken during sampling to prevent contamination of the samples. All sample containers for incoming waste will be labeled with the laboratory sample identification number and date. Sample containers for waste verification analysis will be labeled with the waste identification number **or batch treatment** identification number (as appropriate), date, time, and sampler's name. Completed PDE, RWNC, and Chain-of-Custody forms will accompany the predisposal sample to the laboratory, where a responsible chemist or qualified designee will determine the analytical plan. Analyses will generally be performed within 21 days for predisposal analyses and immediately for waste verification analyses.

Records and results of the predisposal waste analyses will be maintained for each waste type by an assigned lab waste identification number. The analyses will be cross-referenced in the data management system by generator name. Records and results of the waste verification analyses will be recorded on the TDLF (Exhibit 3.3-6) and filed with each manifest in chronological order.

The Quality Assurance Manual, which is available on site for inspection, provides information and procedures for the following:

* Calibration
* Calibration procedures
* Preventative maintenance
* Analytical procedures
* Data verification
* Records management
* Quality assurance/quality control audits
* Quality control samples
* Sample receipt.

The facility laboratory follows standard laboratory practices, including analysis of quality control samples, data verification, nonconformance and corrective action, preventive maintenance, record-keeping practices, and general laboratory protocols. These practices are outlined in detail in the Quality Assurance Manual.

All records of calibration will be maintained on the following forms, as prescribed by the Quality Assurance Manual:

* ICP Data Sheet (Exhibit 3.3-9)
* GC Data Sheet (Exhibit 3.3-10)
* pH Calibration Log (Exhibit 3.3-11).

3.3.7 Records Manaaement System

A written operating record will be maintained at the facility at least until closure, as required by 22 CCR 67163. Site records pertaining to the analysis and placement of waste at the facility will be managed by the Laboratory Supervisor or authorized designee and integrated into the records management system. The operating record will include the following:

* A description and the quantity of each hazardous waste received and. the method(s) (by handling code[s], as specified in 40 CFR 264, Appendix I) and date(s) of waste treatment, storage, and disposal will be recorded on the TDLF.

* A description and the quantity of each hazardous waste landfilled under an extension to the effective date or a petition for exemption from any land disposal restriction and the associated notices provided by the generator.

* The location of each treated batch placed in the landfill will be recorded on the TDLF (Exhibit 3.3-6). The location and quantity of each hazardous waste in the landfillwillbe cross-referenced to specific manifests.

* Any notices required under the land disposal restrictions, including notices required of a treatment facility when wastes are treated on site.

* Records and results of waste analyses performed for the PDE will be maintained for each waste type by waste identification number. The analytical results will be cross-referenced by generator name using the data

management system. Records and results of waste analysis performed for the WVA and TVA will be recorded on the TDLF and filed with each manifest, in chronological order.

* All records applicable to the facility laboratory will be maintained in accordance with the Quality Assurance Manual.

* The RWNC form for the RCRA land disposal restrictions will be maintained and attached to the PDE and filed by generator name and waste identification number.

* A copy of any manifest discrepancy letter describing the discrepancy and attempts to reconcile it, with a copy of the manifest or shipping paper(s) at issue, filed with the DHS within 15 days of rejecting the waste per 22 CCR 67162(b), will be placed in the records management system in accordance with the procedures described in Exhibit 3.3-8.

* Summary reports and details of all incidents that require implementation of the Contingency Plan.

* Notices to generators informing them of' waste acceptability.

All records required by law, regulation, or the final facility permit conditions will be furnished upon request and made available at all reasonable times for inspection by the EPA, DHS, RWQCB, State Water Resources Control Board (SWRCB), and the Imperial County Planning Department, Health Department, or Air Pollution Control Officer.

3.3.8 Waste Analvsis Plan Update

The Waste Analysis Plan will be reviewed on an annual basis and revised as necessary to reflect changes in waste acceptance criteria, pre-treatment criteria, land disposal restrictions, WMUs and ancillary equipment at the facility, and/or available analytical techniques, methods, or instruments. Revised copies of the Waste Analysis Plan will be forwarded to the aforementioned agencies for review and approval.

TABLE 3.3-l

HAZARDOUS WASTES AMENABLE TO TREATMENT TECHNOLOGIES OR MANAGEMENT UNITS AT THE IMPERIAL VALLEY FACILITY
(Sheet 1 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
D001	Characteristic of Ignitability	Ignitable	T,D,L
D002	Characteristic of Corrosivity	Corrosive	T,D,L,1
D003	Characteristic of Reactivity	Reactive	D,L
D004	Characteristic of EP Toxicity - Arsenic	Toxic	S,1,D,L,T
D005	Characteristic of EP Toxicity - Barium	Toxic	S,1,D,L,T
D006	Characteristic of EP Toxicity - Cadmium	Toxic	S,1,D,L,T
D007	Characteristic of EP Toxicity - Chromium	Toxic	S,1,D,L,T
D008	Characteristic of EP Toxicity - Lead	Toxic	S,1,D,L,T
D009	Characteristic of EP Toxicity - Mercury	Toxic	S,1,D,L,T
D010	Characteristic of EP Toxicity - Selenium	Toxic	S,1,D,L,T
D011	Characteristic of EP Toxicity - Silver	Toxic	S,1,D,L,T
D012	Characteristic of EP toxicity - Endrin	Toxic	1,D,L
D013	Characteristic of EP toxicity - Lindane	Toxic	1,D,L
D014	Characteristic of EP toxicity - Methoxychlor	Toxic	1,D,L
D015	Characteristic of EP toxicity - Toxaphene	Toxic	1,D,L
D016	Characteristic of EP toxicity - 2,4-D	Toxic	1,D,L
D017	Characteristic of EP toxicity - 2,4,5-TP	Toxic	1,D,L

[a] For explanation of these symbols, see the legend at the end of the table..

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of 10 percent or. more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	Toxic	M,D,L,Q,S,1
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, l,l,l-tric-hloroethane, chlorobenzene, 1,1,2-trichloro- 1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	Toxic	M,D,L,Q,S,1

[a] For explanation of these symbols, see the legend at the end of the table.

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EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethylbenzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent nonhalogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvent, and a total of 10 · percent or more (by volume) of one or more of those solvents listed in F001, F002, F004,. and F005; and still bottoms from the 'recovery of these spent solvents and spent solvent mixtures.	Toxic	M,D,L,Q,S,1
F004	The following spent nonhalogenated solvents: cresols and,cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvent mixtures.	Toxic	M,D,L,Q,S,1
F005	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disul-fide, isobutanol, pyridine, benzene, 2-eth oxyethanol, 2-nitropropane; all spent solvent mixtures/blends containing, before use, a	Ignitable Toxic	M,D,L,Q,S,1

(a) For explanation of these symbols, see the legend at the end of the table.

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
	total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.		
F006	Wastewater treatment sludges from electroplating.	Toxic	S,1
F007	Spent cyanide plating baths from electroplating operations.	Reactive Toxic	1,Q
F008	Plating bath sludges from the bottom of plating baths where cyanides are used in the process.	Reactive Toxic	1,Q
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Reactive Toxic	1,Q
F010[c]	Quenching bath residues from oil baths from metal heat-treating operations where cyanides are used in the process.	Reactive Toxics	1
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat-treating operations.	Reactive Toxic	1,Q
F012	Quenching wastewater treatment sludges from metal heat-treating operations where cyanides are used in the process.	Toxic	1,Q,S

[a] For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 5 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
F019	Wastewater treatment sludges from chemical conversion coating of aluminum.	Toxic	S,1
F020	Wastes from the production or manufacturing use of tri- or tetrachlorophenol or of intermediates used to produce their pesticide derivatives.	Acute Hazardous	S,1
F021	Wastes from the production or manufacturing use of pentachlorophenol or of intermediates used to produce its derivatives.	Acute Hazardous	S,1
F022	Wastes from the manufacturing use of tetra-, penta-, or hexachlorobenzenes under alkaline conditions	Acute Hazardous	S,1
F023	Wastes from the production of materials on equipment previously used for the production or manufacturing use of tri- and tetra-chlorophenols. .	Acute Hazardous	S,1
F024[b]	Wastes from the production of chlorinated aliphatic hydrocarbons.	Toxic	S,1
F026	Wastes from the production of materials on equipment previously used for the manufacturing use of tetra-, penta- or hexachloro-benzene under alkaline conditions.	Acute Hazardous	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 6 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT[a] UNIT
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols.	Acute Hazardous	S,1
F028	Residues resulting from incineration/thermal treatment of soil contaminated with EPA hazardous waste F020, F021, F022, F023, F026, and F027.	Acute Hazardous	S,1
K001[b]	Bottom sediment sludge from the treatment of wastewaters from wood preserving process that use creosote and/or pentachlorophenol.	Toxic	S,1
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Toxic	S,1
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Toxic	S,1
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Toxic	S,1
K005	Wastewater treatment sludge from the production of chrome green pigments.	Toxic	S,1
K006	Wastewater treatment sludge from the production of chrome oxide green pigments.	Toxic	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
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EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[(a)]
K007	Wastewater treatment sludge from the production of iron blue pigments.	Toxic	S,1
K008	Oven residue from the production of chrome oxide green pigments.	Toxic	Q,D,S
K009[(c)]	Distillation bottoms from the production of acetaldehyde from ethylene.	Toxic	S,1
K010[(c)]	Distillation side cuts from the production of acetaldehyde from ethylene.	Toxic	S,1
K011[(c)]	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Reactive Toxic	S,1
K013[(c)]	Bottom stream from the acetonitrile column in the production of acrylonitrile.	Reactive Toxic	S,1
K014[(c)]	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Toxic	S,1
K015[(d)]	Still bottoms from the distillation of benzyl chloride.	Toxic	Q,D
K016[(b)]	Heavy ends on distillation residues from the production of carbon tetrachloride.	Toxic	S,1
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	Toxic	M,S,1

(a) **For explanation of these symbols, see the legend** at the end of the table.

TABLE 3.3-1
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EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT[a] UNIT
K018[b]	Heavy ends from the fractionation column in ethyl chloride production.	Toxic	S,1
K019[b]	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	Toxic	S,1
K020[b]	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	Toxic	S,1,M
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Toxic	S,1
K022[b]	Distillation bottom tars from the production of phenol/acetone from cumene.	Toxic	S,1,M
K023[b]	Distillation light ends from the production of phthalic anhydride from naphthalene.	Toxic	S,1
K024[b]	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Toxic	S,1
K093[b]	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Toxic	S,1
K094[b]	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Toxic	S,1
K026	Stripping still tails from the production of methy ethyl pyridines.	Toxic	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

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EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
K027[c]	Centrifuge and distillation residues from toluene diisocyanate production.	Reactive Toxic	S,1
K028[b]	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	Toxic	M,S,1
K029[c]	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Toxic	M,S,1
K095[c]	Distillation bottoms from the production of 1,1,1-trichloroethane.	Toxic	M
K096[c]	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	Toxic	M
K030[b]	Column bottoms of heavy ends from the combined production of trichloroethylene and perchloroethylene.	Toxic	S,1
K083	Distillation bottoms from aniline production.	Toxic	S,1
K103	Process residues from aniline extraction from the production of aniline.	Toxic	M,S,1
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	Toxic	M,S,1
K085	Distillation or fractionation column bottoms from the production Of chlorobenzenes.	Toxic	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
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EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARD(PROPER'
K105	Separated aqueous stream from the reactor product washing step in the production in chlorobenzenes.	Toxic
Klll	Product washwaters from the production of dinitrotoluene via nitration of toluene.	Corros: Toxic
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	Toxic
K113(c)	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Toxic
K114(c)	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Toxic
K115(c)	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene:	Toxic
K116(c)	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	Toxic

(a) For explanation of these symbols, see the legend at the end of the ta

TABLE 3.3-l
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EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Toxic	M
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Toxic	S,1
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Toxic	M
K071	Brine purification muds from the mercury cell process in chlorine production where separately prepurified'brine is not used.	Toxic	S,1
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Toxic	S,1
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.	Toxic	S,1
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Toxic	S,1
K032	Wastewater treatment sludge from the production of chlordane.	Toxic	S,1

[a] For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 12 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Toxic	S,1
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Toxic	S,1
K097	Vacuum stripper discharge from the chlorination in the production of chlordane.	Toxic	M
K035	Wastewater treatment sludges generated in the production of creosote.	Toxic	S,1
K036(d)	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Toxic	S,1
K037(b)	Wastewater treatment sludge from the production of disulfoton.	Toxic	S,1
K038(c)	Wastewater from the washing and stripping of phorate production.	Toxic	S,1
K039(c)	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	Toxic	S,1
K040(c)	Wastewater treatment sludge from the production of phorate.	Toxic	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 13 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
K041	Wastewater treatment sludge from the production of toxaphene.	Toxic	S,1
K098	Untreated process wastewater from the production of toxaphene.	Toxic	S,1
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	Toxic	M
K043[b]	2,6-Dichlorophenol waste from the production of 2,4-D.	Toxic	S,1
K123	Process wastewater from the production of ethylenebisdithiocarbamic acid and its salt.	Toxic	S,1
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	Toxic Corrosive	T,S,1
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	Toxic	S,1
K048[b]	Dissolved air flotation (DAF) float from the petroleum refining industry.	Toxic	S,1
K049[b]	Slop oil emulsion solids from the petroleum refining industry.	Toxic	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 14 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT UNIT[a]
K050[b]	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Toxic	S,1
K051[b]	API separator sludge from the petroleum refining industry.	Toxic	S,1
K052[b]	Tank bottoms (leaded) from the petroleum refining industry.	Toxic	S,1
K061	Emission control dust/sludge from the primary production of steel in elecltric furnaces.	Toxic	S,1
K062	Spent pickle liquor generated by steel finishing operations of facilities in the iron and steel industry (SIC Codes 331 and 332).	Corrosive Toxic	T,S,1
K069	Emission control dust/sludge from secondary lead smelting.	Toxic	S,1
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Toxic	S,1
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Toxic	S,1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 15 of 22)

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT[(a)] UNIT
K101[(b)] (low As)	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Toxic	S,1
K102[(b)] (low As)	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. .	Toxic	S,1
K086[(c)]	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	Toxic	T,S,1
K060	Ammonia still lime sludge from coking operations.	Toxic	S
K087[(b)]	Decanter tank far sludge from coking operations.	Toxic	S,1
K045	Spent carbon from the treatment of wastewater containing explosives	Reactive	T,M,S,1
P	Discarded commercial chemical products, off-specification species, container residues, and spill residues as listed in 40 CFR Part 261.33(e).	Acute Hazard, may also be toxic or reactive	T,S,1,L,D,Q

(a). For explanation of these symbols, see the legend at the end of the table.

EPA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	HAZARDOUS PROPERTIES	TREATMENT[a] UNIT
U	Discarded commercial chemical products, off-specification commercial chemical products, or manufacturing chemical intermediates as listed in 40 CFR Part 261.33(f).	Toxic, may also be ignitable, corrosive, and reactive	T,S,1,L,D,Q

Other generic industry wastes to be treated but not categorized by waste number'include:

* Acid solutions/sludges from etching of steel, titanium, aluminum, etc.
* Alkaline solutions/sludges from etching of aluminum.
* Rinse water from acid or alkaline etching of metals.
* Spent acid solutions from electronic components processing.

(a) For explanation of these symhpls, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 17 of 22)

CALIFORNIA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	PROPERTI
711	Liquids with cyanides $\geq$1,000 mg/P	Reactive Toxic
721	Liquids with arsenic $\geq$500 mg/P	Toxic
722	Liquids with cadmium $\geq$100 mg/P	Toxic
723	Liquids with chromium (VI) $\geq$500 mg/P	Toxic
724	Liquids with lead $\geq$500 mg/P	Toxic
725	Liquids with mercury $\geq$20 mg/P	Toxic
726	Liquids with nickel $\geq$134 mg/P	Toxic
727	Liquids with selenium $\geq$100 mg/P	Toxic
728	Liquids with thallium $\geq$130 mg/P	Toxic
741	Liquids with halogenated organic compounds $\geq$1,000 mg/kg	Toxic
751	Sludges with halogenated organic compounds ~1,000 mg/kg	Toxic
791	Liquids with pH $\leq$2	Corrosi\
792	Liquids with pH $\leq$2 with metals	Toxic

(a) **For explanation of these symbols, see the legend at the end of the tabl**

TABLE 3.3-l
(Sheet 18 of 22)

CALIFORNIA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	PROPERTIES	TREATMENT[(a)] UNIT
121	Alkaline solution (pH >12.5) with metals and their solid residues	Corrosive Toxic	T,S,L,D,Q,1
122	Alkaline solutions without metals and their solid residues	Corrosive	T,L,D,Q,1
123	Unspecified alkaline solution and their solid residues	Corrosive	T,L,D,Q,1
131	Aqueous solution (2<pH<12.5) containing reactive anions (azide, bromate,chlorate, cyanide, fluoride, hypochlorite, nitrite, perchlorate, and sulfide anions)	Reactive Toxic	L,D,Q
132	Aqueous solution with metals (see 111) and their solid residues	Toxic	T,S,L,D,Q,1
133	Aqueous solution with total organic residues 10% or more and their solid residues	Toxic	T,L,D,Q,1
134	Aqueous solution with total organic residues less than 10% and their solid residues	Toxic	T,L,D,Q,1
135	Unspecified aqueous solution	Toxic	T,S,L,D,Q,1
135	Solid residue of unspecified aqueous solution	Toxic	1

(a) For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-l
(Sheet 19 of 22)

CALIFORNIA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	PROPERTIES	TREATMENT UNIT[a]
141	Off-specification, aged, or surplus inorganics	Toxic Corrosive	T,S,L,D,Q
171	Metal sludge	Toxic	S,1
181	Other inorganic solid waste	Toxic	S,1
211	Halogenated solvents	Toxic,	D,L,Q,M
212	Oxygenated solvents	Toxic	D,L,Q,M
213	Hydrocarbon solvents	Toxic	D,L,Q,M
214	Unspecified solvents	Toxic	D,L,Q,M
222	Oil/Water separation sludge	Toxic	S,1
223	Unspecified oil-containing waste	Toxic	S,1,T
231	Pesticide rinse water or solid residues	Toxic	S,1
232	Pesticides and other wastes associated with pesticide production	Toxic	S,1,D
241	Tank bottom waste	Toxic	S,1
251	Still bottoms with halogenated organics	Toxic	S,1
252	Other still bottom waste	Toxic	S,1

[a] For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-1
(Sheet 20 of 22)

CALIFORNIA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	PROPERTIES	TREATMENT UNIT[a]
272	Polymeric resin waste and other polymeric materials		S,1
291	Latex waste	Toxic	S,1,L,D
541	Photochemicals/photo processing waste	Toxic	T,S,1,L,D
'3 11	Pharmaceutical waste	Toxic	L,D,T,S,1
322	Biological waste other than sewage sludge	Toxic	1
341	Organic liquids (nonsolvents) with hologens	Toxic	L,D,Q
343	Unspecified organic liquid mixture	Toxic	T,S,L,D,Q,1
351	Organic solids with halogens	Toxic	S,1
352	Other organic solids	Toxic	S,1
411	Alum and gypsum sludge	Corrosive Toxic	S,T,1
421	Lime sludge	Corrosive Toxic	S,T,1
431	Phosphate sludge	Toxic	S,T,1

[a] For explanation of these symbols, see the legend at the end of the table.

TABLE 3.3-1
(Sheet 21 of 22)

CALIFORNIA HAZARDOUS WASTE CODE	HAZARDOUS WASTE	PROPERTIES	TREATMENT UNIT[(a)]
441	Sulfur sludge	Toxic	S,T,1
451	Degreasing sludge	Toxic	S,1
471	Paper sludge/pulp	Toxic	S,1
491	Unspecified sludge waste	Toxic	S,1
511/512/ 513	Contaminated empty containers	___	1,S
521	Residue from geothermal drilling muds		1
611	Contaminated soil from site cleanups		S,1
	Shredded lab packs/drums		S,1
	Biological/municipal incinerator ash		S,1
	Treated wood	Toxic	S,1
751	Solids or sludges with halogenated organic compounds $\geq$1,000 mg/kg	Toxic	S,Q,M

(a) For explanation of these symbols, see the legend at the end of the table.

(a) Legend for Treatment Technologies or Management Units to be used at the Imperial Valley facility:

TREATMENT TECHNOLOGY OR
MANAGEMENT UNIT

1 = Class I Landfill
D = Drum Storage
L = Laboratory Pack and Small-Quantity Generator
S = Stabilization Unit
T = Treatment Unit
M = Stripping
Q = Liquid Bulking

(b) As part of the land disposal restrictions, incineration has been identified or proposed as Best Demonstrated Available Technology (BDAT) for these wastewaters and nonwastewaters. Therefore, the Imperial Valley facility would only receive the resultant treatment residue or residuals from other acceptable treatment technologies. Specific "P" and "U" waste codes in this category include P071, U028, U069, U088, U102, U107 and U109.

(c) As part of the land disposal restrictions, incineration has been identified or proposed as' BDAT for these nonwastewaters. Therefore, the Imperial Valley facility would only receive the resultant treatment residue or residuals from other acceptable treatment technologies. Specific "P" and "U" waste codes in this category include P039, P040, P041, P043, P044, P062; P071, P085, P089, P094, P097, P109, P111, U058, U087, U221, U223 and U235.

(d) As part of the land disposal restrictions, incineration has been identified or proposed as BDAT for these wastewaters. Therefore, the Imperial Valley Facility would only receive the resultant treatment residue or residuals from other acceptable treatment technologies.

TABLE 3.3-2

METHODS AND EQUIPMENT USED TO COLLECT
REPRESENTATIVE SAMPLES OF WASTE
IMPERIAL VALLEY FACILITY

WASTE MATERIAL	METHOD[(a)]	EQUIPMENT
Containerized liquids	EPA SW-846	Coliwasa, tubing, weighted bottle
Extremely viscous liquid	EPA SW-846	Tubing or trier
Crushed or powdered material	EPA SW-846	Tubing, trier, scoop, or shovel
Soil or rock-like material	EPA SW-846	Tubing, trier, auger, scoop, or shovel
Soil-like material	EPA SW-846	Tubing, trier, auger, scoop, or shovel
Fly ash-like material	EPA SW-846	Tubing, trier, auger, scoop, shovel

(a) Sampling will be performed in compliance with the noted method, or approved equivalent.

EPA - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA SW-846, Third Edition, 1986b.

TABLE 3.3-3

PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO ALL PREDISPOSAL WASTE SAMPLES AND
WASTE VERIFICATION SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 1 of 2)

PARAMETER	METHOD(")(b)	DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Spot Test for Cyanides	See Exhibit 3.3-22	10 ppm	NA	Determine presence or absence of total material. Waste characterization.
pH	EPA 9040	NA	±0.5%	Identify corrosive waste., Waste characterization. Determine if pH adjustment is necessary.
Physical Description	NA	NA	NA	Determine the general physical characteristics, such as physical state, color, odor, number of phases, and visible free liquids. Used to compare initial waste sample with subsequent incoming loads.
Specific Gravity	ASTM D 1429	NA	NA	Waste characterization. For liquids only.
Sulfide Screen	See Exhibit 3.3-13	10 ppm	NA	Determine presence or absence of potentially reacive material. Waste characterization.
Excess Oxidant	Spot Test (Ex. 3.3-14) or Titration (Ex. 3.3-15)	pos/neg 10 ppm	NA --	Determine presence of oxidants that cannot be treated or landfilled.
Hydrocarbon Vapor Pressure	See Exhibit 3.3-16	25 ppm	--	Semi-quantitative measure volatile organic compounds and determine ignitability of waste.
Paint Filter Test	EPA 9095	pass/fail	NA	Ascertain if a waste contains free liquids.

TABLE 3.3-3

PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO ALL PREDISPOSAL WASTE SAMPLES AND
WASTE VERIFICATION SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 2 of 2)

PARAMETER	METHOD[(a)(b)]	DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Phenol Spot Test	See Exhibit 3.3-17	0.1 ppm	NA	Determine presence of phenolic compounds.

(a) Test method references are as follows:
SM - Standard Methods for the Examination of Water and Wastewater, 16 Edition, 1985.
EPA - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA SW-846, Third Edition, 1986b.
ASTM - Annual Book of ASTM Standards.

(b) Analysis will be performed using the noted method or an approved equivalent.

NA - Not available or not'applicable.

TABLE 3.3-4
ADDITIONAL PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED PREDISPOSAL WASTE SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 1 of 4)

PARAMETER	METHOD(=)	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Acidity	SM 402	NA	NA	Waste characterization. Identify potentially corrosive material.
Alkalinity	SM 403	NA	NA	Waste characterization. Identify potentially corrosive material.
Ammonia	SM 417	25 ppm	±20%	Waste characterization.
Carbamates	EPA 632	1-50 ppm	NA	Waste characterization for wastes containing pesticide and/or herbicide.
Centrifugation of Waste	See Exhibit 3.3-18	NA	NA	Determine phase distribution of waste (% oil, % solids, % water)
Chlorinated Herbicides (Phenoxy, Phenolics)	EPA 615/ 8150	1-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.
Chromium (VI)	EPA 7195 or 7196	5 ppm	±10%	Determination of metal species. Restricted metal per 22 CCR 66900. Waste characterization.
Compatibility Reactivity	IT Method 8503 (Exhibit 3.3-5)	NA	NA	Determine compatibility and reactivity before storage and treatment.
Cyanide, Reactive	EPA 7.3.3.2	10 ppm	±15%	Determine potential reactivity with acidic materials. Waste characterization.
Total Cyanide	SM 412	10 ppm	±10%	Waste characterization.
Land disposal restricted waste with set treatment standard	TCLP Appendix I 40 CFR 268	NA	NA	Land disposal restriction.

TABLE 3.3-4
ADDITIONAL PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED PREDISPOSAL WASTE SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 2 of 4)

PARAMETER	METHOD[a]	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Free Liquids	EPA 9095	NA	NA	Identification of free liquids per land disposal restrictions. Compliance with RCRA. Determination of waste handling.
GC Scan: Halogenated Volatile Organics	EPA 601/ 8010	25 mg/kg	±15%	For wastes containing an organic layer, identification of CA restricted and Federal land disposal restricted waste. Waste characterization may affect treatment process.
Heating Values	ASTM D 240	NA	NA	Waste characterization.
Flashpoint	EPA 1010	NA	±2°F	Check for ignitability to determine safe handling of material.
Total Petroleum Hydrocarbons	EPA 418.1	50 ppm	±10%	Indication of the extent of petroleum contamination and the expected hydrocarbon vapor pressure of the waste stream for the waste verification procedures. Waste characterization.
Total Organic Lead	See Exhibit 3.3-19	5 ppm	±20%	Determination of waste discharge requirement restriction.

TABLE 3.3-4
ADDITIONAL PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED PREDISPOSAL WASTE SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 3 of 4)

PARAMETER	METHOD[a]	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Total Metals:				
Arsenic[b]	EPA 7060 or 7061	IO ppm	±20%	Waste characterization.
Barium[b]	EPA 7080	25 ppm	±20%	Waste characterization.
Beryllium[b]	EPA 7090	2.0 ppm	±20%	Waste characterization.
Cadmium[b]	EPA 7130	2.5 ppm	±20%	Waste characterization.
Chromium[b]	EPA 7190	IO ppm	±20%	Waste characterization.
Cobalt[b]	EPA 7210	5 ppm	±20%	Waste characterization.
Lead[b]	EPA 7420	IO ppm	±20%	Waste characterization.
Mercury	EPA 7470 or 7471	0.2 ppm	±20%	Waste characterization.
Nickel[b]	EPA 7520	IO ppm	±20%	Waste characterization.
Selenium[b]	EPA 7740 or 7741	5.0 ppm	±20%	Waste characterization.
Thallium[b]	EPA 7840	10 ppm	±20%	Waste characterization.
Vanadium[b]	EPA 7910	25 ppm	±20%	Waste characterization.
Zinc[b]	EPA 7950.	5 ppm	±20%	Waste characterization.
Nonhalogenated Organics	EPA 601/8015	1 mg/kg	±20%	Waste characterization.
Normality	See Exhibit 3.3-20	NA	NA	Determine ionic strength of corrosive waste.
Organo-Chlorines	EPA 608/8080	1-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.
Organo-Phosphates	EPA 614/8140	l-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.
Halogenated Organics Spot Test	See Exhibit 3.3-21	pos/neg	NA	Waste characterization.

TABLE 3.3-4
ADDITIONAL PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED PREDISPOSAL WASTE SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 4 of 4)

PARAMETER	METHOD[a]	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Excess Oxidant	SM 412	NA	NA	Identification of possible hazard with incompatible material during waste storage and treatment.
PCB	EPA 601/ 8080	1 mg/kg	±20%	Waste characterization.
Solids on Neutraliza- tion	SM 213E	NA	NA	Screen for metals.
Solvent Distillation	ASTM D 86	NA	NA	For waste material containing an oil layer, distillation will fractionate the oil layer for solvent identification. Waste characterization. May affect treatment process.
Sulfide, Reactive	EPA 7.3.3.3	10 ppm	±15%	Determine if reactive with acidic material. May affect treatment process. Waste characterization.
Total Sulfide	SM 427	10 ppm	±10%	Waste characterization.
Triazines	EPA 619/8190	l-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.

(a) Test method references are as follows:
SM - *Standard Methods for the Examination of Water and Wastewater*, 16th Edition, 1985.
EPA - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA SW-846, Third Edition, 1986b.
ASTM - *Annual Book of ASTM Standards*.

(b) Alternate analytical methods include EPA 6010, Inductively Coupled Plasma Emission Spectrometry.

NA - Not available or not applicable.

TABLE 3.3-5

PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED WASTE VERIFICATION SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 1 of 3)

PARAMETER	METHOD[(a)]	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Ammonia	SM 417	25 ppm	±20%	Waste verification.
Carbamates	EPA 632	1-50 ppm	NA	Waste characterization for wastes containing persticide and/or herbicide
Centrifugation of Waste	See Exhibit 3.3-18	NA	NA	Waste verification.
Chlorinated Herbicides (Phenoxy, Phenolics)	EPA 615/ 8150	l-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.
Chromium (VI)	EPA 7196 or 7195	5 ppm	±10%	Waste verification and posttreatment verification.
Compatibility	See Exhibit 3.3-5	NA	NA	Waste verification and posttreatment verification.
Reactive Cyanide	SM 412	10 ppm	±15%	Waste verification. Determine reactivity.
Cyanide	See Exhibit 3.3-12	5 ppm	NA	Waste characterization.
Land Disposal Restricted Waste With Treatment Standard in 40 CFR 268	TCLP Appendix I 40 CFR 268	NA	NA	Posttreatment verification for restricted wastes.
Flashpoint (Pensky Martin Closed Cap)	EPA 1010	NA	±2°F	Waste verification. To be done on all liquid waste verification samples with HCVP > 300 ppm in order to determine ignitability.
Fluoride	SM 414	20 ppm	±15%	Waste verification.

TABLE 3.3-5

PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED WVA SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 2 of 3)

PARAMETER	METHOD(=)	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Free Liquids	EPA 9095	NA	NA	Waste verification. Identify restricted waste. Determination of waste handling and posttreatment verification.
GC Scan: Halogenated Volatile Organics	EPA 601/8010	25 mg/kg	±15%	May be used as waste verification. For wastes containing an organic layer, identification of CA restricted and Federal land disposal restricted waste. Also post-treatment verification. May affect treatment process.
Heating Values	ASTM D 240	NA	NA	Waste Characterization.
Total Petroleum Hydrocarbons	EPA 418.1	50 ppm	±10%	Waste verfication.
Hydrocarbon Vapor Pressure (HCVP)	ASTM D 86	NA	NA	Screening method to check for volatility. Determine safe handling of the material.
Total Organic Lead	See Exhibit 3.3-19	5 ppm	±20%	Waste verification and posttreatment verification.
Metals (Aqueous Phase):				
Arsenic(b)	EPA 7060 or 7061	10 ppm	±10%	May be used as waste verification. Identification of CA restricted and Federal land disposal restricted waste. Also post-treatment verification. May affect treatment process.
Cadmium(b)	EPA 7130	10 ppm	±10%	
Chromium(b)	EPA 7190	10 ppm	±10%	
Lead(b)	EPA 7420	10 ppm	±10%	
Mercury(b)	EPA 7470	10 ppm	±10%	
Nickel(b)	EPA 7520	10 ppm	±10%	
Selenium(b)	EPA 7740	10 ppm	±10%	
Thallium(b)	EPA 7840	10 ppm	±10%	
Halogenated Organics Spot Test	See Exhibit 3.3-21	pos/neg	NA	Waste verificcation.

TABLE 3.3-5

PARAMETERS, TEST METHODS, AND RATIONALE
APPLICABLE TO SELECTED WVA SAMPLES
IMPERIAL VALLEY FACILITY
(Sheet 3 of 3)

PARAMETER	METHOD(")	TYPICAL DETECTION LIMIT	VARIANCE OF ANALYTICAL METHOD	RATIONALE
Nonhalogenated Organics	EPA 601\8015	1 mg/kg	±20%	Waste verification.
Organo-Chlorines'	EPA 608\8080	l-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.
Organo-Phosphates	EPA 614\8140	1-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.
Excess Oxidant	SM 412	NA	NA	Waste verification.
PCB	EPA 601\8080	1 mg/kg	±20%	Waste verification.
Specific Gravity	ASTM D 1429	NA	NA	Waste and volume verification.
Reactive Sulfide	SM 427	10 ppm	±15%	Waste verification. Determine potential reactivity with acidic materials.
Triazines	EPA 619\8190	l-50 ppm	±10%	Waste characterization for wastes containing pesticide and/or herbicide.

(a) Test method references are as follows:
SM Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985.
EPA - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA SW-846, Third Edition, 1986b.
ASTM - Annual Book of ASTM Standards.

(b) Alternative analytic& methods include EPA 6010, Inductively Coupled= Plasma Emission Spectrometry.

NA - Not available or not applicable.

EXHIBIT 3.3-l

WASTE PREDISPOSAL
EVALUATION (PDE) FORM

EXHIBIT 3.3-l

WASTE PREDISPOSAL EVALUATION

The Waste Predisposal Evaluation Form is designed to obtain crucial information to assist the Imperial Valley Facility in the safe, legal, and economical handling of samples and bulk wastes. Providing all known information about each waste to be submitted will help to ensure that all necessary analyses are completed in a timely manner and that adequate information is available for proper waste management decisions.

The Imperial Valley facility should be contacted with any questions relating to the completion of this form, sample processing; and waste acceptability.

<u>GENERAL INSTRUCTIONS</u>

1. A separate evaluation form must be submitted for each waste stream.

2. A representative sample of waste in a proper container, per the standards of EPA SW-846, should be submitted with each evaluation form and labeled with the Generator Name, Waste Description, Hazardous Characteristics, Date, and Evaluation Number from the top right corner of this form.

3. After completing the Evaluation form, the goldenrod copy should be retained for your records. The evaluation number in the upper righthand corner of the form should be referenced in all correspondence about your waste material.

4. All items on this form must be completed to the best of the generator's ability.

PLEASE NOTE THAT INCOMPLETE RESPONSES MAY DELAY
SAMPLE PROCESSING IF ADDITIONAL INFORMATION
IS NECESSARY OR REQUESTED BY
FACILITY LABORATORY OR OPERATIONS PERSONNEL.

XHIBIT 3.3-1

WASTE PREDISPOSAL EVALUATION

YOUR REPRESENTATIVE IS ______
PHONE: ( ) ______

DIRECTIONS: IN ORDER TO EXPEDITE EVALUATION OF THE WASTE STREAM, ALL SECTIONS MUST BE COMPLETE. IF NOT APPLICABLE (N/A), INDICATE SO. LEAVE NO BLANKS. ALL PREDISPOSAL EVALUATIONS MUST BE ACCOMPANIED BY A "RESTRICTED WASTE NOTIFICATION AND CERTIFICATION" FORM AND CHAIN OF CUSTODY WITH EACH SAMPLE. WASTE STREAMS MUST BE REEVALUATED AT LEAST ANNUALLY OR WHEN CHARACTERISTICS/COMPOSITION CHANGE FROM THAT PROVIDED BELOW. IT IS THE RESPONSIBILITY OF THE GENERATOR TO INITIATE THE PREDISPOSAL REEVALUATION WHEN THE GENERATORS PROCESS CHANGES.

IT USE ONLY

EVALUATION # ______
WASTE STREAM # ______
ACCT MGR ______
DATE SUBMITTED ______
CUSTOMER ID# ______
ANALYTICAL CHARGES ______
P.O./CONTRACT# ______
BILLING INSTRUCTIONS ______

SITE APPROVAL ______
DATE: ______
DATE: ______
GENERATOR NOTIFICATION DATE: ______
☐ RWNC ☐ COC

A. GENERATOR INFORMATION:
GENERATOR NAME ______
MAILING ADDRESS ______
SITE ADDRESS ______
EPA ID # ______
TECHNICAL CONTACT ______ PHONE ______

B. CUSTOMER INFORMATION:
CUSTOMER NAME ______
ADDRESS ______
CONTACT ______
PHONE ______
TRANSPORTER ______
EPA ID # ______

C. WASTE DESCRIPTION: ______
GENERATING PROCESS ______
VOLUME ______ GALLONS ______ CUBIC YARDS
FREQUENCY: ☐ One Time ☐ Week ☐ Month ☐ Quarter ☐ Year
METHOD OF SHIPMENT: ☐ Bulk Liquid ☐ Bulk Solid ☐ Drums
DRUM TYPE AND SIZE ______

D. SHIPPING INFORMATION:
D.O.T. PROPER SHIPPING NAME ______
R.Q. ______ UN/NA# ______
HAZARD CLASS ______
RCRA WASTE? ☐ Yes ☐ No CODE ______
CA. HAZARDOUS WASTE? ☐ Yes ☐ No CODE ______
WASTE CLASSIFIED AS ☐ DESIGNATED ☐ SPECIAL ☐ NONHAZARDOUS

E. HAZARDS:

	Low	Mod	High		Yes	No
INHALATION	☐	☐	☐	PYROPHORIC	☐	☐
DERMAL	☐	☐	☐	SHOCK SENSITIVE	☐	☐
ORAL	☐	☐	☐	OTHER	☐	☐
FLAMMABLE	☐	☐	☐			

MATERIAL SAFETY SHEETS ATTACHED? ______
SPECIAL HANDLING ______

F. GENERATOR CHARACTERISTICS/COMPOSITION CERTIFICATION (GENERATOR OR AUTHORIZED REPRESENTATIVE MUST INITIAL ALL ITEMS BELOW).

1) DOES WASTE POSSESS FOLLOWING CHARCTERISTICS?	Yes	No	Initials
RADIOACTIVE	☐	☐	______
INFECTIOUS	☐	☐	______
ETIOLOGICAL	☐	☐	______
EXPLOSIVE	☐	☐	______
REACTIVE	☐	☐	______
STRONG ACID/BASE	☐	☐	______
FLASH POINT <140F	☐	☐	______
COMPRESSED GAS	☐	☐	______

2) DOES WASTE CONTAIN FOLLOWING COMPONENTS?	Yes	No	Initials
ASBESTOS	☐	☐	______
MUNICIPAL GARBAGE/REFUSE	☐	☐	______
FREE LIQUIDS AS DETERMINED BY THE PAINT FILTER TEST	☐	☐	______
CALIFORNIA RESTRICTED WASTE	☐	☐	______
LAND DISPOSAL RESTRICTED WASTE (40 CFR 268)	☐	☐	______
INCOMPATIBLE WASTES	☐	☐	______

EPA WASTE CODES:	Yes	No	Initials
F020, F021, F022, F023, F026, F027, F028	☐	☐	______
(40 CFR 261) If yes, which waste code(s) ______			
ORGANIC LEAD	☐	☐	______
CONCENTRATIONS OF PERSISTENT/BIOACCUMULATIVE TOXIC SUBSTANCES > TTLC (22 CCR 66699 (b) & (c)	☐	☐	______
VOLATILE SUBSTANCES >10% BY WEIGHT	☐	☐	______

G.
ODOR ______
3 MILD 0 NONE
☐ STRONG

H. PHYSICAL STATE:
☐ LIQUIDS ______ % FREE LIQUIDS
☐ SOun ☐ SINGLE LAYER
☐ SLUDGE ☐ DOUBLE LAYER
☐ POWDER ☐ MULTI-LAYER

I. pH:
☐ <2 ☐ 10-12
☐ 2-6 ☐ >12
☐ 6-6 ______ Exact
☐ 8-10

J. NORMALITY:
☐ 0.1-1.0 ☐ 4.1 -5.0
☐ 1.1-2.0 ☐ 5.1-6.0
☐ 2.1-3.0 ☐ >6.0
☐ 3.1-4.0 ______ Exact

K. SPECIFIC GRAVITY:
☐ 40.6 ☐ 1.4-v
☐ 0.8-1.0 ☐ >1.7
☐ 1.0-1.2 ______ Exact
☐ 1.2-1.4

L. FLASHPOINT:
☐ 100F
☐ 100F-140F
☐ 140F-200F
METHOD ______

M. METALS

TOTAL		SOLUBLE	
Hg ______	ppm	Tl ______	p
Se ______	ppm	As ______	p
______	ppm	Hg ______	
______	ppm	Se ______	
Pb ______	ppm	Pb ______	
Cd ______	ppm	Cd ______	
Ni ______	ppm	Ni ______	
Cr+6 ______	ppm	Cr+6 ______	
V ______	ppm	V ______	
Be ______	ppm	Be ______	
Cu ______		Cu ______	
Fe ______	ppm	Fe ______	
Co ______	ppm	Co ______	
Zn ______	ppm	Zn ______	

OTHER ______
OTHER ______

. CHEMICAL COMPOSITION:

______ %
______ %
______ %
______ %
ACID TYPES ______ %
______ %
BASE TYPE ______ %
OXIDIZER TYPE ______ %
WATER ______ %
OIL ______ %
TOTAL 100%

Yes	No		
☐	☐	CYANIDES ______	ppm
☐	0	FORMALDEHYDE ______ ppm ______	ppm
☐	☐	PCB ______	ppm
☐	☐	PHENOLS ______	ppm
☐	☐	SULFIDES ______	ppm
☐	☐	AMMONIA ______	ppm
☐	☐	DIOXINS ______	ppm
☐	☐	PESTICIDE ______	ppm
		PESTICIDE GROUP ______	
☐	☐	HALOGENATED ORGANICS ______	ppm
		OTHER ______	ppm

O. ANALYTICAL INSTRUCTIONS: SPECIFIC INSTRUCTI
☐ STANDARD PREDISPOSAL ______
☐ RUSH (subject to surcharge) ______
☐ REQUEST FOR ANALYSIS ______

P. THE ABOVE INFORMATION WAS DETERMINED THROUGH ☐ LABORATORY ANALYSIS (ATTACH REPORTS) OR ☐ GENERATORS PERSONAL KNOWLEDGE OF WASTE WITH SUPPORTING DOCUMENTATION MAINTAINED BY GENERATOR.

Q. SPECIAL HANDLING/SAFETY INSTRUCTIONS: ______

R. CERTIFICATION: I HEARBY CERTIFY AS THE GENERATOR OR AUTHORIZED REPRESENTATIVE, THAT TO THE BEST OF MY KNOWLEDGE THE ABOVE INFORMATION AND ATTACHMENTS FULLY AND ACCURATELY CHARACTERIZE THE CHEMI AND PHYSICAL PROPERTIES OF THE WASTE STREAM. I UNDERSTAND THAT THIS SAMPLE IS ASSUMED BY IT CORPORATION TO BE REPRESENTATIVE OF THE WASTE STREAM AND THAT ACCEPTABILITY AND PRICE ESTIMATES BASED ON THIS SAMPLE MAY CHANGE ACCORDING TO THE COMPOSITION OF ACTUAL WASTES ANALYZED AT TRUCK RECEIVING. I HAVE ATTACHED A CHAIN OF CUSTODY FORM AND "RESTRICTED WASTE NOTIFICATION AND CERTIFICATION". AS THE GENERATOR OR HIS REPRESENTATIVE, I ASSUME THE RESPONSIBILITY OF NOTIFYING IT OF ANY CHANGES TO THE CHARACTERISTICS OF THE WASTE STREAM IDENTIFIED ABOVE.

NAME (PRINT): ______ SIGNATURE: ______ DATE: ______ PHONE: ( ) ______

EXAMPLE

EXHIBIT 3.3-2

RESTRICTED WASTE NOTIFICATION AND
CERTIFICATION (RWNC) FORM

EXHIBIT 3.3-2

RESTRICTED WASTE NOTIFICATION AND CERTIFICATION

Certifications required due to land disposal restrictions (40 CFR 268).

1. Soft Hammer Wastes are wastes whose date of evaluation has passed without the Environmental Protection Agency setting treatment standards in 40 CFR 268. A soft hammer waste is to be managed (treated, recycled, or disposed) so as to achieve the greatest environmental benefit that is practicably available. The generator must determine what is of greatest environmental benefit and practicably available. In doing so, one of the certifications identified as "E" or "G"* on the attached certifications (or similar certification) must accompany each waste shipment that is received at a land disposal facility.

2. Restricted wastes with treatment limits set under 40 CFR 268 may be land disposed once treated so as to not exceed the set limits. Each waste shipment received for treatment that must meet treatment limits must be accompanied by certifications similar to "F" or "H." Each waste shipment received for land disposal that must meet treatment limits must be accompanied by certifications similar to "A," "B," "C," or "G." Certification "C" accompanies shipment when waste is to be treated using a specific treatment technology (e.g., incineration, high-efficiency boiler).

3. A waste restricted under 40 CFR may continue to be land disposed if it is a soft hammer waste or if it is subject to a case-by-case extension, exemption, or nationwide variance. A certification similar to "D" must accompany each waste shipment if there is a valid extension, exemption, or variance.

4. All certifications are to be retained in the operating record.

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* For wastes accompanied by certification "G" or "H," the disposal or treatment facility must retain a copy of the generator's demonstration for treatment and a certification similar to "H."

RESTRICTED WASTE NOTIFICATION AND CERTIFICATION

GSX SERVICES (IMPERIAL VALLEY) INC.

EXHIBIT 3.3-2 (CONTINUED)

This Notice and Certification is submitted to IT Corporation in accordance with 40 CFR 268.7(a)(1) through (a)(4).

This notice and certification includes (check all that apply):

- [ ] Restricted waste notification and certification forms provided by IT Corporation (four pages in all)
- [ ] Treatment standards applicable to waste shipped
- [ ] All applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d)
- [ ] Waste analysis data.

I hereby supply the ______________________ IT Corporation Facility with the following information as required by 40 CFR 268.7:

1. Generator, Treatment or Recovery Facility Name: ______________________

   ____

   Point of Contact ______________________

   Telephone Number () ______________________

   EPA Identification Number ______________________

2. EPA Hazardous Waste Code(s) ______________________

3. Manifest Number of Waste Shipment ____________

4. Complete the following certification if the waste being shipped under the attached manifest has been determined through analysis or generator knowledge to be a waste which is currently not restricted under 40 CFR 268. If this certification is not applicable, continue with Item 5.

   I certify that I have examined and am familiar with the waste through analysis or knowledge of the generating waste stream or process to support the certification that this waste is currently not restricted under 40 CFR 268.

   ____

   Signed (Authorized Representative of Generator) Date

   Print Name ______________________ Title ______________________

5. The waste being shipped under the attached manifest has been determined through analysis or generator knowledge to be a restricted waste as defined in 40 CFR 268. The exact status of this waste with respect to this section is described and certified below (check and certify the one appropriate category from "A" through "H"):

A. [ ] Waste is restricted under 40 CFR 268 and requires no further treatment prior to land disposal.

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing 'or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart 0 and al I applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and comp lete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Signed (Authorized Representative of Generator) Oate

Print Name ______________________ Title ______________________

B. [ ] Waste or treatment residue of a restricted waste is restricted under 40 CFR 268 and is treated to meet treatment standards as specified in 40 CFR 268 and indicated on attachment, with waste analysis data provided where available.

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those indlviduals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Signed (Authorized Representative of Generator) Date

. Print Name ______________________ Title ______________________

C. [ ] Waste is restricted under 40 CFR 268 and Is treated under technology based treatment standards as specified in 40 CFR 268.42.

I certi fy under penalty of I aw that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penal ties for submitting a false certi f icatlon, including the possibility of fine and imprisonment.

Signed (Authorized Representative of Generator) Date

Print Name ______________________ Title ______________________

NV:0395/012689

D. [ ] Waste is restricted under 40 CFR 268 but is subject to (check one):

[ ] Case-by-case extension under § 268.5

[ ] Exemption under § 268.6

[ ] Nationwide variance under Subpart C

I hereby notify the receiving land disposal facility that the waste shipment associated with the attached manifest is not prohibited from land disposal. I have indicated the appropriate treatment standards and applicable prohibitions for this waste and attached all supporting analytical data. The waste becomes subject to the land disposal prohibitions on __________________.

____

Signed (Authorized Representative of Generator) Oate

Print Name ______________________________ Title ____________________________

E. [1 Waste is restricted under 40 CFR 268 but is subject to "soft hammer" provisions.

Generator must show that good faith effort has been made as described in § 268.8 to locate and contract with treatment and recovery facilities practically available. The demonstration must include a list. of facilities and facility officials contact, addresses, telephone numbers, contact dates, and result of contact. This demonstration, required in 40 CFR 268.8(a)(2)(A), and the following Certification is provided to the disposal facility with the initial shipment with the certification provided with all following shipments as long as the conditions being certified remain unchanged.

I have certified to the Regional Administrator and do certify to the land disposal facility under penalty of law that the requirements of §268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternatlve to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____

Signed (Authorized Representative of Generator) Oate

Print Name ______________________________ Title ____________________________

F. [ ] Waste is restricted under 40 CFR 268 and requires treatment prior to land disposal.

Attach the treatment standard or applicable prohibitions.

G. [ ] Waste is restricted under 40 CFR 268. The generator in accordance with 40 CFR 268.8(a)(2)(ii) has contracted to use the technology that has been demonstrated to yield the greatest environmental benefit. As the owner or operator of the treatment or recovery facility, I have treated the waste in accordance with the generator's demonstration and do provide the disposal facility receiving the waste or treatment 'residues a copy of the above demonstration (if applicable) and generator certification required under 40 CFR 268.8(a)(2).

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signed (Authorized Representative of Treatment or Recovery Facility) Date

Print Name ______________________ Title ______________________

H. [ ] The waste is restricted under 40 CFR 268. The generator has contracted to use practically available technology which has been demonstrated to yield the greatest environmental benefit.

I certify under penalty of law that the requirements of 40 CFR 268.8(a)(l) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signed (Authorized Represetative of Generator) Date

Print Name ______________________ Title ______________________

EXHIBIT 3.3-3

CHAIN-OF-CUSTODY RECORD

GSX SERVICES OF CALIFORNIA, INC.
IMPERIAL VALLEY

EXHIBIT 3.3-3
CHAIN-OF-CUSTODY RECORD

R/A Control No. ____________
C/C Control No. A 85656

PROJECT NAME/NUMBER ____________ LAB DESTINATION ____________

SAMPLE TEAM MEMBERS ____________ CARRIER/WAYBILL NO. ____________

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condillon on Recelpt (Name and Dale)	Disposal Record No.

Special Instructions: ____________

Possible Sample Hazards: ____________

SIGNATURES: (Name, Company, Dale and Time)

1 **Relinquished By:** ____________

Received By: ____________

2 Relinquished By: ____________

Received **By.** ____________

3. Relinquished By: ____________

Received by: ____________

4. Relinquished By: ____________

Received By: ____________

WHITE - To accompany samples
YELLOW - Field copy

EXHIBIT 3.3-4

PREDISPOSAL ANALYSIS (PDA) REPORT

EXHIBIT 3.3-4

PREDISPOSAL ANALYSIS (PDA) REPORT

WORK ORDER # ____________
JOB # ____________
SAMPLE # ______ OF ______

Generator Name: ____________________

Waste Description: ____________________

Generating Process: ____________________

Volume/Frequency: ____________________

TEST	RESULT	UNITS
ACIDITY		
ALKALINITY		
HCVP		
DENSITY		
PH		
NORMALITY		
CN		
SULFIDE		
AMMONIA		
FLUORIDE		
XS OXIDANT		
FLASHPOINT		
FREE LIQUIDS		
AQUEOUS		
SOLID		
OIL		
HALOGENATED		
PHENOL		

RESULTS OF GC ANALYSIS

TEST	RESULT	UNITS
PCB		
HALOGENATED		

RESULTS OF METALS ANALYSIS

TEST	RESULTS TOTAL	RESULTS DISSOLVED
As		
Be		
Cd		
co		
Cr		
Cr+6		
cu		
Fe.		
Hg		
Ni		
Pb		
Se		
Tl		
Zn		

ANALYSIS

Name	Date

LAB MANAGER: ____________________ DATE: ____________

ACCEPT/REJECT: ____________ REASON: ____________________
TSOF MANAGER: ____________________ DATE: ____________
TSD FACILITY: ____________ SPECIAL SCHEDULING REQ: ____________

TREATABILITY STUDIES/PLACEMENT:

White - Data Mgmt. Yellow - Operations Pink - Sales

IMP:AD07R3ex33

EXHIBIT 3.3-5

TEST FOR COMPATIBILITY FOR TREATMENT/DISPOSAL

EXHIBIT 3.3-5

TEST FOR COMPATIBILITY FOR TREATMENT/DISPOSAL

(Sheet 1 of 2)

1. Scone and Application

This test is used to determine the compatibility and reactivity of a material with previously disposed material or with the material with which it is to be consolidated for treatment or storage purposes.

2. Summary of Method

A representative sample of the waste to be evaluated is mixed with a representative sample from the area of the disposal facility where the waste is to be placed or from the other waste stream to establish compatibility of the materials for disposal or consolidation. Additionally, a small amount of water is added to small samples of each waste type as well as to the mixture to determine whether the mixture of material will be inter-reactive or water reactive. Chemical and physical reactions between wastes and changes in the waste mixture are noted.

3. Apparatus

3.1 Mixing apparatus consisting of an inert container and stirring device such as a spatula.

3.2 Thermometer capable of readings of 0 to 100 ±0.5C.

3.3 Approximately 10 ml of water with a dispensing device.

3.4 Safety equipment as appropriate.

4. Sample Collection

4.1 Sampling from a landfill will be carried out on a daily basis, as specified for sampling a landfill per EPA SW-846.

4.2 Sampling from a tank will be carried out as needed, as specified for sampling a tank per EPA SW-846.

4.3 Sampling of the waste movement under evaluation will be carried out in conformance with EPA SW-846.

4.4 A representative sample of the waste will be obtained by mixing and compositing as necessary.

5. Procedure

5.1 A portion of the sample to be evaluated will be mixed in a 250-ml container with a portion of the representative sample in a 1:10 ratio.

5.2 The chemist will monitor and note for a l-minute period the temperature, physical appearance, and state of the material.

5.3 After the l-minute period, the chemist will add to the mixture (drop wise) approximately 10 ml of water. Again, the chemist will monitor and note for a l-minute period the temperature, physical appearance, and state of the material.

5.4 The chemist will note and evaluate the evolution of gas, creation of a liquid phase, formation of vapors or bubbles, or color changes.

6. Evaluation

The chemist will evaluate the results of the test, the chemical and physical properties of the waste, and the material known to be in the Area where the waste is to be placed to determine the compatibility and reactivity of the material to be placed.

EXHIBIT 3.3-6

TREATMENT/DISPOSAL LOCATION FORM (TDLF)

GSX
SERVICES OF CALIFORNIA, INC.
IMPERIAL VALLEY

TREATMENT/DISPOSAL LOCATION FORM

Document No. 200165

EXHIBIT 3.3-6

☐
☐
:oading
tion ☐ Landfill
:signated By

DRIVER PROTECTION GEAR REQUIRED

H & S REQUIREMENTS
Goggles or ☒ Face Shield ☒ Gloves ☐ Protective Clothing ☐ Rubb Boot
[ ] Respiratory Protection [ ] Hard Hal n Other

FOR WASHOUT: ☐ Face Shield ☐ Gear ☐ Rubber Gloves

erator
er
:r
:rial Description
and Time Sample Received
ple No.
: Dispatched to Location
No.
:e Task Sub-Task
nter
osal Site Type TK ☐ LF ☐
:e Manifest No.
:rated Out of Slate Y ☐ N ☐
site Transfer Y ☐ N ☐
:te Stream No.
:rdous Classification
uct Code
U.O.M.
:l Tons Disposed
:ICE USE:
mum Disposal Charge Y 0 N ☐
mum Disposal Tax Y ☐ N 0
:MMENTS:

CONTENTS

	Concentration		Charge Y/N
pH Level			
Density		G.L	
Normality (NM)		N	
HCVP (HC)		PPM	
Phenols (PN)		PPM	
Sulfides (SL)		PPM	
Cyanides (CN)		PPM	
Ammonia (AM)		PPM	
Formaldehyde (FD)		PPM	
Oil (OL)		%	
Solids (SD)		%	
Solids on Neutralization (SN)		%	

SOLVENTS

Polar (PL)		%	
Nonpolar (NP)		%	
Halogenaled (HA)		%	

OTHER CONTENTS

Site Monitoring (MO)		EA	

SOLIDS

% Floating =
% Suspended =
% Settled =
% Other =

METALS

	Concentration	Charge Y/N
Nickel (NI)		
Lead (PB)		
Mercury (HG)		
Cadmium (CD)		
Selenium (SE)		
Chromium (CR)		
Arsenic (AS)		
Thallium (TL)		
Copper (CU)		

OTHER METALS

OTHERCHARGES

Product Code	Description	U.O.M.	Qty.	Chg Y/N	Employee #/ Equip ID #
	Washout				
	Callout				
	Special Handling				
	Holiday Callout				
	TR Pre-Disposal				

SPLIT SITE 1 QTY 1 UNIT
LOAO 2 2 UNIT

onsistency | Odor | Analyst

EXHIBIT 3.3-7

BENCH-SCALE TREATABILITY (BST) FORM

EXHIBIT 3.3-7
BENCH-SCALE TREATABILIN (BST) FORM

_____ Predisposal Evaluation

_____ Waste Verification Analysis

Waste Identification Number ______________________

The following ratio is to be followed to properly treat/stabilize the waste

ADDITIVE	PARTS/RATIO
Waste	______
Kiln Dust	______
Cement	______
Water	______
Acid/Caustic	______
Activated Carbon	______
Other	______
Other	______

Laboratory Signature ______________________ Date __________

HWSU Signature ______________________ Date __________

Manifest Number(s) ______________________

Batch Number ______________________

Parameters of Interest:	Pretreatment	Units	Posttreatment	Treatment Standard
As				
Be				
Cd				
Cr				
Hg				
Ni				
Pb				
Se				
Tl				
Acidity				
Alkalinity				
HCVP				
Sulfides				
Cyanides				
Normality				
pH				
Flashpoint				
Free Liquids				
Organics				

EXHIBIT 3.3-8

UNIFORM HAZARDOUS WASTE MANIFEST
OPERATIONAL PROCEDURES

EXHIBIT 3.3-8

UNIFORM HAZARDOUS WASTE MANIFEST
OPERATIONAL PROCEDURES
(Sheet 1 of 6)

1.0 USE OF THE MANIFEST

As required by California State Law, promulgated and enforced through the Department of Health **Services** (DHS), a manifest system is used for the receipt and disposal of all hazardous wastes. The waste generator, transporter, and operator of the treatment, storage, or disposal facility (TSDF) must certify compliance with requirements to document the proper handling and identification of the waste. The facility copy of the manifest is maintained for at least 3 years. All Restricted Waste Notification and Certification (RWNC) forms are to be maintained in the operating record.

The **"Generator"** portion of the waste manifest is to be completed, signed, and dated by the generator, authorized agent, or representative. The generator is responsible for designating a transporter and TSDF. The transporter, TSDF, and corresponding EPA ID numbers must be indicated on the waste manifest, along with the generator's name, mailing address, telephone number, and EPA ID number. An alternate transporter and TSDF may be designated. The alternate TSDF is to be used in the event of an emergency whereby the material cannot be delivered to the designated TSDF. The remainder of the generator portion of the waste manifest deals with waste categorization (i.e., proper U.S. Department of Transportation [DOT] shipping name, hazard class, **UN/NA** number, etc.) and waste components and their concentrations (continuation sheets are available, if necessary, to give a complete list of waste components).

The **"Transporter"** portion is to be completed by the transporter. The manifest is signed and dated, acknowledging receipt of the listed materials.

The **"TSDF"** portion is to be completed by a representative of the designated disposal site. The TSDF representative signs and dates the manifest if the waste has been determined to be acceptable (see the Waste Analysis Plan for procedures to determine acceptability of hazardous wastes).

The TSDF representative completes the "Discrepancy" section, as necessary (see Section 2.0, Discrepancy/Incomplete Manifest Procedure, below).

Each hazardous waste load received at the Imperial Valley facility must be accompanied by a hazardous waste manifest. If the information provided in the generator or transporter sections is incomplete or improperly filled out or a discrepancy in waste type or quantity is noted, the deficiencies are noted and appropriate corrective measures taken (see' Section 2.0, Discrepancy/Incomplete Manifest Procedure). Representative samples of each waste load are collected to determine whether the waste is acceptable and the most appropriate method of disposal/treatment (Waste Analysis Plan). Once acceptance and proper disposal method have been determined, the TSDF portion of the manifest is completed, including the signature and date accepted. A completed copy of the waste manifest is given to the driver of the transporting company and three copies are retained by the TSDF. One copy each is sent to the generator and to the DHS within 30 days. The third copy is kept on file at the TSDF for a period of at least 3 years.

2.0 DISCREPANCY/INCOMPLETE MANIFEST PROCEDURE

Because of the significant discrepancies and omissions that can occur on waste manifests, the following procedure has been developed in an attempt to decrease delay times and to establish a consistent policy for contacting the generating or transporting company for acceptance approval. This procedure also establishes a means to record and file discrepancy information once all acceptance contacts have been made and approvals obtained.

Significant discrepancies are defined as differences in the volume or type of waste documented on 'the manifest and' determined by the receiving laboratory analysis. Incomplete manifests are manifests that lack specific required information. The following are discrepancies and forms of incompleteness:

1. Designated TSDF:

   - Incomplete/incorrect information.

   - Change necessary in designated TSDF.

2. DOT Classification:

   - Incomplete information.

3. List of Components:.

   - No components and/or concentrations listed.

   - Components listed do not coincide with lab analysis. (Significant discrepancies in type are obvious differences such as waste solvent substituted for waste acid or toxic consitituents not listed on manifest.) *

4. Required Signatures:

   - Required signatures are not present.

5. Quantity Listed:

   - Quantity is not listed.

   - Quantity received is not equal to quantity shipped (within 10 percent if bulk waste, any variation in piece count for batch waste).

If discrepancies exist or the manifest is incomplete, notification of the discrepancy or incomplete entries will be made and, whenever possible, the discrepancy will be reconciled by telephone prior to acceptance of the waste load at the TSDF. In addition, the discrepancy must be specifically recorded in the space provided at the bottom of

---

* Significant according to DHS permit.

Page 1 of the manifest (Item 19). When the generating company is called for approval, either.through the customer service representative or through the dispatcher, the following information must be logged on the **"Discrepancy/Incomplete"** portion of the manifest:

* Name and title of generating company's authorized agent
* Date and time contact was made
* Name of transporting company's dispatcher (if used)
* Truck driver's initials for acknowledgment
* Discrepancy reconciliation.

At no time will corrections or changes be made on a waste manifest even with generator approval, 'except for generator-approved change of designated TSD facility.

If a waste manifest is received that has a significant discrepancy or incompleteness and no authorized agent can be contacted from the generating company, the discrepancy will be recorded on, the waste manifest in the space provided and appropriate reports and notifications will be made. The waste load may be accepted for disposal and treatment upon site management approval, which must be documented on the Treatment/Disposal Location Form (TDLF).

The completed TDLF and any reports and notifications required will be attached to the waste manifest. The appropriate truck receiving/site management personnel will contact the generating company to obtain acceptance approval and make the necessary change (only for designated TSDF), if required. Once contact has been made and approval granted, the transporting company will be contacted so that the information can be entered on the driver's copy of the waste manifest.

After notification/approval has been made and the required information recorded, copies of the waste manifest, TDLF, and any reports and notifications required will be sent to the facility Environmental Manager. Any reports and notifications required will then be mailed to the generator, along with a form letter requesting additional information, if required, to complete the waste manifest.

If a discrepancy is not resolved within 15 days of acceptance at the TSDF, the Environmental Compliance Manager will immediately send a letter describing the discrepancy and attempts to reconcile it to the EPA Regional Administrator and DHS, along with a copy of the waste manifest.

The following actions must be taken in the event of specific discrepancies:

DISCREPANCY	REQUIRED ACTION	ELAPSED TIME
Significant manifest discrepancy (type of waste or quantity)	Reconcile with generator or transporter via telephone.	Less than 15 days
	Submit manifest and letter describing discrepancy and attempts to reconcile to DHS.	15 days
Unmanifested hazardous waste loads accepted	Submit report specified in 22 CCR 67166 to DHS.	Within 15 days of waste receipt
Waste hauling vehicle fails to display valid certificate of compliance and waste is accepted	Submit report to DHS. Include EPA No., name and address of generator, transporter, and designated facility, and a description and quantity of hazardous waste received.	Within 15 days of waste receipt

EXHIBIT 3.3-8
(Sheet 6 of 6)

DISCREPANCY	REQUIRED ACTION	ELAPSED TMIE
Rejection of wastes that arrive at facility	Notify DHS. Notify CHP if also unmanifested. Include EPA No., name and address of generator, transporter, and designated facility, description and quantity of hazardous waste received, and a brief explanation of circumstances of rejection.	Immediately; written notification within 5 days

EXHIBIT 3.3-9

ICP DATA SHEET

ICP DATA SHEET

DATE: ______ ANALYST: ______

	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	V	Zn	Units	Matrix	Other
HOD BLANK																			
10. CHECK																			
True Value																			
Found																			
%R																			
FERENCE SAMPLE ple I.D.																			
Mean																			
Found																			
%R																			
IKE SAMPLE mple I.D.																			
Sample Result																			
Spike Sample																			
Spike Added																			
%R																			
PLICATE mple I.D.																			
1st Result																			
2nd Result																			
RPD																			
PLICATE mple I.D.																			
1st Result																			
2nd Result																			
RPD																			

EXHIBIT 3.3-10

GC DATA SHEET

Organics Analysis Data Sheet

Sample Number

Laboratory Name: ______________________ Case No: ______________________

Lab Sample ID No. ______________________ QC Report No: ______________________

Sample Matrix: ______________________

Data Release Authorized By: ______________________ Date Sample Received: ______________________

Volatile Compounds

Date Extracted/Prepared: ______________________

Date Analyzed: ______________________

Conc/Dil Factor: __________ pH __________

Percent Moisture: (Not Decanted) ______________________

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	
67-64-1	Acetone	
75-15-0	Carbon Disulfide	
75-35-4	1, 1-Dichloroethene	
75-34-3	1, 1-Dichloroethane	
156-60-5	Trans-1, 2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1, 2-Dichloroethane	
78-93-3	2-Butanone	
71-55-6	1,1,1 • enwoatnme	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	
10061-02-6	Trans-1, 3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1, 1, 2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1, 3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
108-10-1	4-Methyl-2-Pentanone	
591-78-6	2-Hexanone	
127-18-4	Tetrachloroethene	
79-34-5	1, 1, 2, 2-Tetrachloroethane	
108-88-3	Toluene	
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Laboratory Name: ______________________

Case No: ______________________

Sample Number

Organics Analysis Data Sheet

Pesticide/PCBs

GPC Cleanup ☐Yes ☐No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

Date Extracted/Prepared: ______________________

Date Analyzed: ______________________

Conc/Dil Factor: ______________________

Percent Moisture (decanted) ______________________

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s ______________ or W_s ______________ V_t ______________ V_i ______________

EXHIBIT 3.3-11

pH CALIBRATION LOG

GSX
SERVICES OF CALIFORNIA, INC.
IMPERIAL VALLEY

EXHIBIT 3.3-11

pH

CALIBRATION LOG PAGE

DATE	ANALYST	pH BUFFER LEVEL & READING 4	7	10	COMMENTS	CHECKED BY/DATE

EXHIBIT 3.3-12

TEST FOR REACTIVE CYANIDE

EXHIBIT 3.3-12

TEST FOR REACTIVE CYANIDE

PRINCIPLE:

An acidic solution, buffered to a pH of 2.0, releases the reactive cyanide as hydrogen cyanide. The hydrogen cyanide gas reacts with the ferrous sulfate on a test strip to form ferrocyanide (Prussian Blue).

SCOPE AND APPLICATION:

Conduct this test if the Test for Reactive Sulfide (Exhibit 3.3-13) indicates that reactive sulfide is present. This test will detect the presence of reactive cyanide compounds. This test will not detect nonreactive cyanide compounds that do not generate hydrogen cyanide upon exposure to a low pH.

APPARATUS & REAGENTS:

3.1 10% NaOH: 10 grams of sodium hydroxide dissolved in 100 ml of deionized water.

3.2 1:1 H_2SO_4 solution: 50 ml of concentrated H_2SO_4 dissolved carefully into 50 ml of deionized water (use caution!).

3.3 1:2 HCl solution: 50 ml of concentrated HCl dissolved in 100 ml of water.

3.4 Cyanide test strips: 1/2" x 4" strips of filter paper dipped in 10% ferrous sulfate for 10 seconds and air dried.

3.5 0.5% lead acetate solution: 5 grams lead acetate dissolved in 1,000 ml of deionized water.

EXHIBIT 3.3-12
(Continued)

PROCEDURE:

4.1 Place 5 grams of sample (solids or liquid) in a 250-ml Erlenmeyer flask.

4.2 Add 10 ml 0.5% lead acetate solution. Stopper and shake by swirling.

4.3 Sensitize the treated end of the cyanide test strip with 2 to 3 drops of 10% sodium hydroxide. Blot any excess solution off, but be sure to keep the strip moist.

4.4 Add 10 ml of phosphate buffer (pH 2.0) solution to the sample. Stopper the flask with the sensitized strip wedged between the stopper and the flask. Mix well by swirling.

4.5 Remove the strip after 5 minutes and immerse it in 1:2 HCl solution for 1 minute. Rinse the strip with deionized water and note color development. A blue color indicates the presence of reactive cyanide. If no blue color forms, no reactive cyanide is present.

PRECAUTIONS:

This procedure must be done under a hood by persons wearing gloves and goggles. Care must be taken when using acids (corrosive). Hydrogen cyanide gas is poisonous.

REFERENCE:

6.1 Sunshine, Handbook of Analytical Toxicology, The Chemical Rubber Company, pp. 403, Table 9.

EXHIBIT 3.3-12
(Continued)

6.2 Gettler, Goldbaum, Detection and Estimation of Microquantities of Cyanide, Anal. Chem. **19**, 270, April 1947.

6.3 Amerine, Laboratory Procedure for Ecology, University of California, College of Agriculture, Department of Viticulture and Ecology, August 1955, p. 80.

6.4 SW-846, Second Edition, Test 7.3.3.2.

EXHIBIT 3.3-13

TEST FOR REACTIVE SULFIDE

EXHIBIT 3.3-13

TEST FOR REACTIVE SULFIDE

PRINCIPLE:

An acidic solution, buffered to a pH of 2.0, releases the reactive sulfide compounds as hydrogen sulfide. The hydrogen sulfide gas reacts with the lead in lead acetate paper, forming black lead sulfide.

SCOPE AND APPLICATION:

This test will detect the presence of reactive sulfide compounds. This test will not detect the presence of nonreactive sulfide compounds that do not generate hydrogen sulfide upon exposure to a low pH.

APPARATUS:

3.1 Lead acetate paper strips.

3.2 250 ml flask with stopper.

REAGENTS:

4.1 Phosphoric acid/sodium phosphate buffer solution - pH of 2.0.

PROCEDURE:

Perform this test only under a hood. Do not breathe any of the fumes coming from the test sample.

5.1 Place approximately 5 grams or ml of sample into a flask. Add 10 ml of the phosphate buffer solution (pH 2.0).

Quickly place a rubber stopper in the neck of the flask, with a lead acetate paper strip held in place by the stopper. Mix well by swirling.

EXHIBIT 3.3-13
(Continued)

5.2 Allow the sample to sit for 5 minutes. If a brown stain develops on the strip, reactive sulfide is present. If no color develops, no reactive sulfide is present.

PRECAUTIONS:

This procedure must be done by persons wearing **gloves** and goggles, working under a hood. Hydrogen sulfide is a toxic gas.

REFERENCE:

7.1 SW-846, Third Edition, Test 7.3.3.3.

7.2 Standard Methods 428, Sulfide.

EXHIBIT 3.3-14

EXCESS OXIDANT SPOT TEST

EXHIBIT 3.3-14

EXCESS OXIDANT SPOT TEST

SCOPE: The method detects presence of oxidants capable of oxidizing iodide.

PROCEDURE: A portion of a strip of potassium iodide paper (available from Precision Scientific) is moistened by placing it in the liquid to be tested. Next, several drops of concentrated hydrochloric acid are placed on' the moistened portion of the paper. Presence of a blue color on the paper indicates that an oxidant is present in the liquid.

EXHIBIT 3.3-15

EXCESS OXIDANT TITRATION

EXHIBIT 3.3-15

EXCESS OXIDANT TITRATION

SCOPE: The test is used to indicate presence of strong oxidant and is not specific for various forms of chlorine or its hydrolysis products in test samples.

PROCEDURE:

1. Place 25 ml of water and 25 ml of 10% potassium iodide solution in a flask.

2. Add 1 ml of sample.

3. Fix color with 10 ml of glacial acetic acid.

4. Titrate with 0.28N sodium thiosulfate until color disappears.

5. Multiply volume (ml) of 0.28 N sodium thiosulfate by 10. This yields the concentration of available chlorine in grams/liter. To convert to percent sodium hypochlorite by weight, use the conversion table below.

EXAMPLE: If the 1 ml sample took 2 ml of 0.28N sodium thiosulfate, the concentration of available chlorine is 20 g/l and there is 2.03% sodium hypochlorite (bleach) by weight.

AVAILABLE CHLORINE (g/l)	SODIUM HYPOCHLORITE % BY WEIGHT
10.0	1.03
15.0	1.53
20.0	2.03
25.0	2.52
30.0	3.00
35.0	3.47
40.0	3.94
41.0	4.00
45.0	4.41
50.0	2.87

EXHIBIT 3.3-15
(Continued)

AVAILABLE CHLORINE (g/l)	SODIUM HYPOCHLORITE % BY WEIGHT
51.4	5.00
54.2	5.25
55.0	5.32
57.1	5.50
60.0	5.76
62.7	6.00
65.0	6.21
70.0	6.64
75.0	7.07
80.0	7.50 .
85.0	7.93
90.0	8.34
95.0	7.93
100.0	9.16
105.0	9.56
110.0	10.05
115.0	10.36
120.0	10.76
125.0	11.14
130.0	11.53
135.0	11.91
136.0	12.00
140.0	12.28
145.0	12.66
150.0	13.03
155.0	13.38
160.0	13.75
165.0	14.11
170.0	14.45
175.0	14.81
178.0	15.00
180.0	15.14
185.0	15.49
190.0	15.83
195.0	16.17
00.0	16.50

EXHIBIT 3.3-16

HYDROCARBON VAPOR PRESSURE

EXHIBIT 3.3-16

HYDROCARBON VAPOR PRESSURE

SCOPE: This method is designed to detect and measure concentrations of combustible gases in air ranging from 1 to 10,000 ppm, measured as hexane.

PRINCIPLE OF METHOD:

The TLV meter oxidizes combustible gases by means of a catalyst-coated resistance element. The resistance of this element changes with the introduction of combustible vapors: the change is proportional to the amount of combustible gas present in the headspace.

APPARATUS AND REAGENT:

1. TLV Meter

2. 200-ml disposable sample cups

PROCEDURE:

1. Turn the TLV meter on and allow it to warm up for 5 minutes.

2. Pour a 100-ml aliquot of the liquid sample into a 200-ml disposable sample cup and securely fasten the lid. (Ensure the 100-ml aliquot is representative of the original sample.)

3. Allow the sample to equilibrate for 60 seconds.

4. Zero the TLV meter.

5. Open the top of the sample container just enough to place the TLV probe into the headspace. Place the cap over the TLV probe. (BE CAREFUL NOT TO PLACE THE PROBE INTO THE LIQUID PORTION OF THE SAMPLE.)

EXHIBIT 3.3-16
(Continued)

6. As the indicator needle moves, adjust the range of the meter to keep the needle on the scale.

7. The correct HCVP reading is the highest reading obtained when the needle is stationary for longer than 3 seconds.

8. If the HCVP reading is greater than 300 ppm or if the needle spikes higher than 500 ppm, a solvent distillation must be performed (ASTM D 86).

9. If the HCVP reading is greater than 300 ppm, a flash point test (EPA Method 1010) may be performed for specific types of waste streams.

ASTM - D 86 MODIFICATION

ASTM method D 86 has been modified as follows:

1. The samples to be analyzed contain water.

2. The analysis of the sample is complete once water becomes the only distillate.

3. The percent solvent is calculated as the amount of distillate collected before the temperature in the distilling flask reaches 100°C. Example: The initial sample volume to be distilled is 100ml. If the amount of distillate recovered between 0 and 99°C is 10 ml, then the sample contains 10% solvent.

EXHIBIT 3.3-16
(Continued)

4. There currently is not a record retained of initial boiling points, nor is there a record retained of temperatures attained vs. the volume of distillate recovered.

EXHIBIT 3.3-17

PHENOL SPOT TEST

EXHIBIT 3.3-17

PHENOL SPOT TEST

SCOPE: This test is applicable to the determination of phenolic compounds of at least 0.1 ppm. The test is based on the formation of a red color by the reagent 4-aminoantipyrine in alkaline solution when phenols are present. The color-forming reaction is initiated by potassium ferrocyanide.

PROCEDURE: Fill the sample cup to the 25-ml mark with the sample to be analyzed. Dissolve the potassium ferrocyanide crystals on the tip of the chemet by stirring the sample with the chemet until all crystals have dissolved. Snap the tip of the chemet by pressing with the thumb. The sample fluid will fill the ampule, mix with reagent, and form a colored solution the intensity of which corresponds to the concentration of phenolic compounds. Invert the chemet several times, allowing the bubble in the tube to travel from end to end. Compare the chemet with color standards.

INTERFERENCES:

Samples that are acidic will produce lower readings. Sulfides will cause the solution to turn yellow. Dilution is recommended.

EXHIBIT 3.3-18

CENTRIFUGATION OF WASTES

EXHIBIT 3.3-18

CENTRIFUGATION OF WASTES

SCOPE: This method is designed to determine the volume distribution of solid and liquid phases in pumpable waste materials.

APPARATUS:

* Centrifuge, capable of spinning 50-mltubes at 3,500 rpm.
* Centrifuge tubes, 50-ml graduated, plastic, with screw caps.
* Sampling aids; e.g., 10-ml disposable pipet, pipet bulb stirring plate, and stir bars.

PROCEDURE: In this determination, it is vital that the subsample being transferred to the centrifuge tube is a representative portion of the total sample. Make sure all phases of the material (light liquid, emulsion, interface; sediments, etc.) are represented in the centrifuge tube in the same proportions as they are in the total sample. No single method of subsampling is applicable to all wastes. One that often works follows:

* Stir up the contents of the sample container with a 10-ml disposable pipet or stir up the sample by means of a stir bar on a stirring plate. Quickly dip the pipet into the sample and withdraw the subsample in pipet fashion. Empty the contents into the centrifuge tube. Repeat with stirring, until approximately 50 ml have been transferred.
* Close the centrifuge tube with a screw cap and place the tube into the centrifuge tube holder, across from an equal weight ballast.
* Spin the sample at 3,000 to 3,500 rpm for 3 to 5 minutes or longer if the sample is really sludgy.
* Read the ml divisions in the spun-down tube at the interfaces between layers.

EXHIBIT 3.3-18
(Continued)

CALCULATIONS: Calculate the thickness of each layer and express it as a volume percent of the total volume in the tube.

Total volume	= 47 ml - 100			
Oil volume	= 47 - 40 =	7 ml	$\frac{7 \times 100}{47}$	= 15%
Sludge volume	= 40 - 32 =	8 ml	$\frac{8 \times 100}{47}$	= 17%
Aqueous volume	= 32 - 3 =	29 ml	$\frac{29 \times 100}{47}$	= 62%
Sediment volume	=	3 ml	$\frac{3 \times 100}{47}$	= 6%

EXHIBIT 3.3-19

DHS METHOD FOR DETERMINATION OF ORGANIC LEAD

EXHIBIT 3.3-19

DHS METHOD FOR
DETERMINATION OF ORGANIC LEAD

CAUTION:

Some organic lead compounds 'are volatile and toxic. Process the samples in a well ventilated hood. Antiknock lead compounds are particularly poisonous and must not come in contact with the skin or be ingested. These compounds give off poisonous vapors **that must** not be inhaled. Antiknock lead compounds should never be stored at elevated temperatures (preferably not above 130°F, 54°C) and should be kept away from acids and oxidizing agents. Whenever handling organic lead or the concentrated solutions outside ventilated hood, adequate precautions shall be taken to protect against exposure. Protective respiratory equipment, clothing, and rubber gloves **must be** worn. Also, material safety data sheets (MSDS) for organic lead standards and other hazardous materials should be reviewed.

INTRODUCTION:

Organic lead compounds constitute the broad class of organic metallic structures that are characterized by at least one carbon atom bonded directly to a lead atom(l). Because of widespread use of the tetraethyl and tetramethyl derivatives of lead as gasoline motor fuel antiknock additives, organic lead compounds constitute the largest single industrial application of organic metallic chemistry(l). Estimates indicate that about 1,450 organic lead compounds were known in 1968 and the number has increased with synthesis of about 130 new compounds each year. The widespread presence of toxic, volatile, lipophilic organic lead compounds in the environment can lead to serious public health effects and damage to the aquatic biota. With the phasing out of leaded fuels, substantial amounts of lead compounds from petroleum sludges are being discharged into waste streams. There is also evidence to suggest that more toxic organic leads such as tetramethyllead can be synthesized from lead (I_2) salts and sample chemical reagents in aqueous solutions.

SCOPE: The method is for the determination of organic lead compounds in various types of hazardous materials samples. In this method, xylene is used to extract the organic lead from matrix followed by reaction with 1% Aliguot 336/MIBK in 12 solution. Xylene is preferred to toluene and iso-octane due to improved flame conditions obtained with xylene. The extract is then analyzed by Flame Atomic Absorption Spectrophotometer Perkin-Elmer Model 5000 (or alternative method to include Inductively Coupled Plasma Immission Spectrometry, [ICP]) having a double-beam photometer and deuterium arc background corrector to minimize the broad-based nonspecific background absorption. Lead electrode-less discharge lamp is used as a primary light source, using slit 0.7 nm spectral band-pass for the resonance line 217°A. The detection limit for organic lead was found to be 0.1 mg/kg as Pb.

REAGENTS:

3.1 (MIBK) Methyl-Isobutyl Ketone, (4-Methyl-2-pentanone) (Reagent grade), MX 1300-1, EM Science, Cherry Hill, NJ.

3.2 Iodine solution - weight 3.0 grams of 12, 2208, Bakers Chem Co., Phillipsburgh, NJ.

Dissolve and dilute to 100 ml with benzene. Store in brown bottle.

3.3 Aliguot 336 (Tri-Capryl Methyl Ammonium Chloride), available from McKesson Co.; 'Minneapolis, MN.

10% V/V **Aliquot** 336/MIBK
1% V/V **Aliquot** 336/MIBK

EXHIBIT 3.3-19
(Continued)

3.4 Xylene (Reagent grade), Xx0045-3, EM Science, Cherry Hill, NJ.

3.5 $PbCl_2$ - Lead Chloride, 2208 Bakers Chem Co., Phillipsburgh, NJ.

1. Stock $PbCl_2$ Solution

Dissolve 0.3356 grams $PbCl_2$ (previously dried at $105^{o}C$ for 3 hours) in 10% Aliquot 336 in MIBK solution and dilute to 250 ml. Store in brown bottle. This solution contains 1,000 ug/ml of Pb.

2. Preparation of Intermediate Pb Standard

Pipet 10 ml of the stock solution (1,000 ug/ml PB) and dilute to 100 ml with xylene/MIBK solution (40% xylene)

3.6 Sodium sulfate (Na_2SO_4, anhydrous, crystals).

APPARATUS:

4.1 Erlenmeyer flask with ground glass stopper, 250 ml.

4.2 Mechanical shaker.

4.3 Filter funnel and paper (Whatman #40 or equivalent).

4.4 Flame Atomic Absorption Spectrophotometer and recorder or integrator.

4.5 Lead hollow cathode or electrode-less discharge lamp.

4.6 Alternative Apparatus to include Inductively Coupled

Plasma Immission Spectrometer (ICP)

PROCEDURE:

5.1 Sludges, sediments, and soils: Weigh out to the nearest 0.1g about 50g of homogenized sample into a stoppered Erlenmeyer flask. Add 100ml xylene. Stopper the flask and shake half an hour on a mechanical shaker. Filter the **extract through** filter paper containing approximately 20g of anhydrous sodium sulfate. This procedure extracts 85 to 95% of spiked soil sample with tetramethyl lead. The efficiency of extraction depends on the moisture content of the sample. Also, extraction time of more than 1/2 hour results in loss of organic lead due to oxidation by air (O_2).

5.2 Pipet 20 ml of MIBK into a 50-ml volumetric flask.

5.3 Pipet 20.0 ml of the xylene extract (Step 5.1) into the flask and mix.

5.4 Pipet 0.1 ml of I_2 solution into the flask and mix for about 1 minute.

5.5 Pipet 5 ml of 1% Aliquot 336 in MIBK and mix.

5.6 Dilute to volume with MIBK and mix.

STANDARD AND BLANK PREPARATION:

Prepare a blank and a minimum of three appropriate working standards from 100 ug/ml Pb standard.

6.1 Add approximately 20 ml of xylene to 50-ml volumetric flask. Pipet the correct amount of the 100 ug/ml Pb standard into the flask to prepare the desired standard concentration.

6.2 Add immediately 0.1 ml of I_2 solution and mix well.

6.3 Add 5 ml of 1% Aliquot 336/MIBK and mix well.

6.4 Dilute to volume with MIBK and mix well.

6.5 Blank xylene/MIBK (40% xylene) should be treated as the working standard solutions.

ANALYSIS:

7.1 Set up the AA (or ICP) according to the manufacturer's instructions. Use background correction to decrease broad-band absorption interference.

7.2 Aspirate H_2O into the flame and adjust the acetylene flow to 8.5 l/min and the air flow to 25 l/min.

7.3 Aspirate MIBK containing 40% xylene into the flame.

7.4 Reduce the acetylene flow' to about 4.8 l/min and make fine adjustments in the acetylene flow to produce an even flame with no yellow luminescence, to obtain optimum conditions.

7.5 Measure the absorbance of the method blank, working standards, and samples.

7.6 Quality Assurance for each bath of samples should be carried out as follows:

i) Running a method blank with each set of samples. If blanks indicate a significant contamination, repeat the procedure with sample and blank.

EXHIBIT 3.3-19
(Continued)

ii) Analysis of a duplicate sample with each set of samples.

iii) Analysis of a spiked sample with each set of samples.

CALCULATIONS:

$$\frac{1,000}{50g} \times \frac{50ml}{20ml} \times \frac{ug/l}{1,000ml/l} \times F = ug/g \text{ organic lead calculated as Pb}$$

where:

F = dilution factor.

REFERENCES:

1. Kirk-Othmer, "Concise Encyclopedia of Chemical Technology," A Wiley-Interscience Publication, 1985.
2. du Pont, Petroleum Lab Method No. M-111-74.
3. Ethyl Corporation, Toxicology and Industrial Hygiene Lab, Ethyl Technical Center, 3000 GSRI Avenue, Baton Rouge, Louisiana 70820.

EXHIBIT 3.3-20

TITRATION OF ACIDS/NORMALITY
TITRATION OF BASES/NORMALITY

EXHIBIT 3.3-20

TITRATION OF ACIDS/NORMALITY

SCOPE: This method is designed to determine the strength of an aqueous acid. The practical lower limit of detection is 0.02 Normal (N). The method is adapted from Standard Methods, 16th Ed., Method 402.

APPARATUS AND REAGENTS:

1. Pipet, 1 ml, volumetric
2. Pipet, 5 ml, volumetric
3. Pipet, 1 ml, graduated
4. Pipet, 10 ml, graduated
5. Beaker, 100 ml
6. Stirring rod, glass or Teflon or magnetic stirrer with Teflon coated stir bar
7. Buret, 50 ml
8. Buret stand with clamp
9. Phenolphthahlein indicator in dropping bottle, or pH meter with glass electrode and buffer solutions
10. Sodium hydroxide solutions, standardized, 1.0 N

PROCEDURE:

Pour about 20 ml of distilled water into a 100-ml beaker. With a pipet, transfer 1.0 ml of the unknown acid to the beaker, add a drop of indicator solution, and swirl to mix.

Fill the buret to near the top mark with standardized 1 N sodium hydroxide solution. Use 1 ml of sample if sample is believed to be 0.5 N or stronger.

Use more sample (5 to 10 ml) if acid is weaker. Read the meniscus on the buret to obtain the initial volume, V.

EXHIBIT 3.3-20
(Continued)

Slowly run the base solution from the buret into the stirred beaker. The end point is reached when **the indicator** changes color (from colorless to pink if phenolphthahlein was used). Stop adding base and read the meniscus on the buret to obtain the final volume, Vf.

If a **pH** meter is used to detect the end point, stop adding acid as soon as the meter reads 7.

CALCULATIONS:

Let Vi - initial buret reading, in -ml
Vf = final buret reading, in ml ·
Va = Volume of unknown acid, in ml
(usually Va - 1.0),
and Nb = Normality of standard base.
Then, Na, the normality of the unknown acid, is

$$Na = \frac{Nb \times Vf - Vi}{Va}$$

This formula is derived from the principle that one milliequivalent of any base will neutralize one milliequivalent of any acid. The number of milliequivalents of base or acid is expressed as volume (ml) times normality **(N)**. Thus,

ml (base) x N (base) = ml (acid) x N (acid)

EXAMPLE:

1.00 ml of unknown acid is titrated with 0.952 base. The initial reading is 0.1 ml, the final reading is 3.8 ml. The normality of the acid is,

EXHIBIT 3.3-20
(Continued)

$$N\ (\text{acid}) = 0.952 \times \frac{3.8 - 0.1}{1.00} = 3.52\ N$$

EXHIBIT 3.3-20
(Continued)

TITRATION OF BASES/NORMALITY

SCOPE: This method is designed to determine the strength of an aqueous base. The practical lower limit of detection is 0.02 Normal (N). This method is adapted from Standard Methods, 16th Ed., Method 403.

APPARATUS & REAGENTS:

1. Pipet, 1 ml, volumetric
2. Pipet, 5 ml, volumetric
3. Pipet, 1 ml, graduated
4. Pipet, 10 ml, graduated
5. Beaker, 100 ml
6. Stirring rod, glass or Teflon^E, or magnetic stirrer with Teflon coated stir bar
7. Buret, 50 ml
8. Buret stand with clamp
9. Phenolphthahlein indicator in dropping bottle, or pH meter with glasselectrode and buffer solutions
10. Hydrochloric acid solutions, standardized 1.0 N

PROCEDURE:

Pour about 20 ml of distilled water into a 100-ml beaker. With a pipet, transfer 1.00 ml of the unknown base to the beaker, add a drop of indicator solution, and swirl to mix.

Fill the buret' to near the top mark with standardized 1 N hydrochloric acid solution. Use 1 ml of sample if sample is believed to be 0.5 N or stronger. Use more sample (5 to 10 ml) for bases weaker than 1 N. Read the meniscus on the buret to obtain the initial volume, V_1.

Slowly run the acid solution from the buret into the stirred beaker. The end point is reached when the indicator changes color (from pink or purple to colorless if phenolphthahlein was used). Stop adding acid and read the meniscus on the buret to obtain the final volume, V_f.

NOTE: If a pH meter is used to detect the end point, stop adding acid as soon as the meter reads 7.

CALCULATIONS:

Let Vi = initial buret reading, in ml
Let Vf = final buret reading, in ml
Let Vb = volume of unknown base, in ml
(usually Vb = 1.0),
and Na = Normality of standard acid
Then, Nb, the normality of the unknown base, is

$$Nb = \frac{Na \times Vf - Vi}{Vb}$$

This formula is derived from the principle that one milliequivalent of any base will neutralize one milliequivalent of any acid. The number of milliequivalents of base or acid is expressed as volume (ml) times normality. Thus,

$$\text{ml (acid)} \times \text{N (acid)} = \text{ml (base)} \times \text{N (base)}$$

EXAMPLE:

1.00 ml of unknown base is titrated with 0.952 acid. The initial reading is 0.1 ml, the final reading is 3.8 ml. The

EXHIBIT 3.3-20
(Continued)

normality of the base is,

$$N\ (\text{base}) = 0.952 \times \frac{3.8 - 0.1}{1.00} = 3.52\ N$$

EXHIBIT 3.3-21

HALOGENATED ORGANICS SPOT TEST

EXHIBIT 3.3-21

HALOGENATED ORGANICS SPOT TEST

SCOPE AND APPLICATION:

1.1 This method is derived directly from Feigl, "Spot Tests in Organic Analysis," 7th Edition, published by Elsevier Scientific Publishing Company, 1975.

SUMMARY OF METHOD:

2.1 The sample is placed on a copper wire and heated in a flame. Presence of organochlorine compounds is indicated by a green color in the flame.

INTERFERENCES:

Interferences are any substances, such as sodium, that produce a color in the flame that may obscure green color.

APPARATUS:

4.1 A copper wire, curved at the end.

4.2 A torch and source of gas (propane fuel).

PROCEDURE:

5.1 Heat the end of the copper wire in the oxidizing flame to clean it.

5.2 Cool the tip of the wire and coat it with the liquid to be tested. Heat the wire in the flame. A green color indicates presence of organochlorine compounds in original sample.

QA/QC: A 500 mg/l solution of chloroform in hexane is tested daily and the results noted. If this test is not positive, the wire is cleaned and test is repeated.

EXHIBIT 3.3-22

CYANIDE SPOT TESTS

EXHIBIT 3.3-22

CYANIDE SPOT TESTS

There are three spot tests commonly used to identify the presence of cyanide in samples, as follows:

1. $AgNO_3$ - detection limit = 5 ppm (Adapted from 16th Ed. Standard Methods 412C)

   A 10-ml sample is used and indicator solution dimethylaminobenzalrhodamine added. End point is indicated by a color change from yellow to salmon.

   The $AgNO_3$ is always used on clean sample where a sharp end point can be seen. If the first.drop of $AgNO_3$ turns the color of the 10-ml sample, CN is ND <5. If it takes more than one drop of $AgNO_3$ to turn and sample is manifested for CN^-, proceed on with the CN^- distillation. If sample is not manifested for CN^- and it takes more than one drop to turn, confirm with the Drager Spot Test and cyantesmo paper. Proceed with distillation if all three spot tests are positive. If $AgNO_3$ and Drager test are positive, but cyantesmo doesn't give the kind of color change expected for the identification of cyanide, check for possible interferences such as sulfide or excess oxidant. After removing the identified interference, recheck both CN^- spot tests. If negative, CN^- = ND <5; if positive, proceed with the distillation.

   Sulfide and excess oxidant interfere with the AgN03 titration end point, giving a false positive.

2. Draaer Snot Test - detection limit = 5 ppm (Per manufacturer's instruction)

   Sample is acidified with concentrated HCl acid in a hood. The headspace of the sample is drawn through the Drager tube with 10 strokes. HCN produced changes in the Drager tube from yellow to red. This method has been shown to detect 5 mg/l HCN in samples.

EXHIBIT 3.3-22
(Continued)

The Drager **spot test** is always done on turbid samples where a sharp end point is not easily recognized. If color change doesn't occur when the sample is acidified and tested with the Drager tube, the CN is ND <5. If color change is observed and sample is manifested for CN^-, proceed with the distillation. If color change is observed but no CN^- is manifested, confirm with the cyantesmo paper. Proceed with the distillation if both spot tests are positive. If cyantesmo spot test gives color change other than the standard CN^- color change, check for possible interferences such as sulfide or excess oxidant. After removing the identified interference, recheck both CN^- spot tests. If both are negative, CN = ND C5; if positive; proceed with the distillation. (The presence of either sulfide or strong oxidant turns the Drager red, giving false positive.)

3. <u>Cyantesmo **Test Paper -** detection limit = 0.2 ppm (Per manufacturer's instructions)</u>

5 to 10 ml of sample is put in a vial. A strip of cyantesmo paper is dipped into the solution, allowing part of the strip to remain in the headspace above the liquid. The sample is acidified with several drops of concentrated H_2SO_4 and capped for 15 minutes. HCN released changes the test strip above the liquid level from pale green to blue. This color change is sensitive and unique for CN-.

This test is used to confirm both the $AgNO_3$ and Drager spot test. A 5 ppm CN^- Standard is tested side-by-side with the sample to compare proper color change. If the spot test is positive, proceed with the distillation. Possible interferences include sulfide, which turns the paper brown, and excess oxidant, which produces a dark green spot on the side of the strip. Identify possible interferences and remove them. If the test is still positive, proceed with distillation: if negative, CN is ND <5.

PREDISPOSAL EVALUATION PROCESS

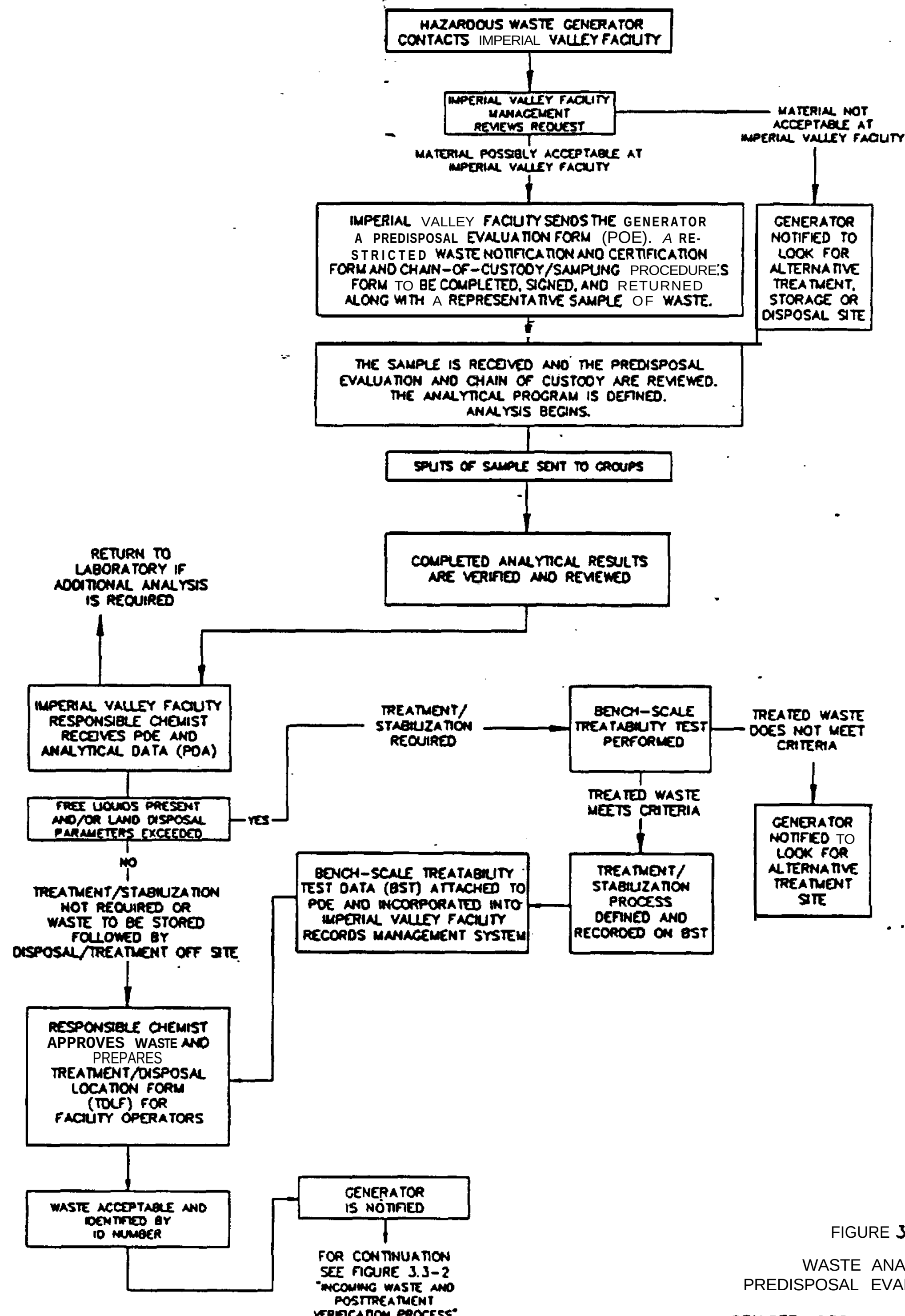

FIGURE 3.3-1

WASTE ANALYSIS PLAN
PREDISPOSAL EVALUATION PROCESS

GSX SERVICES (IMPERIAL VALLEY), INC.
IMPERIAL VALLEY FACILITY

DO NOT SCALE THIS DRAWING

INCOMING WASTE AND POSTTREATMENT
VERIFICATION PROCESS

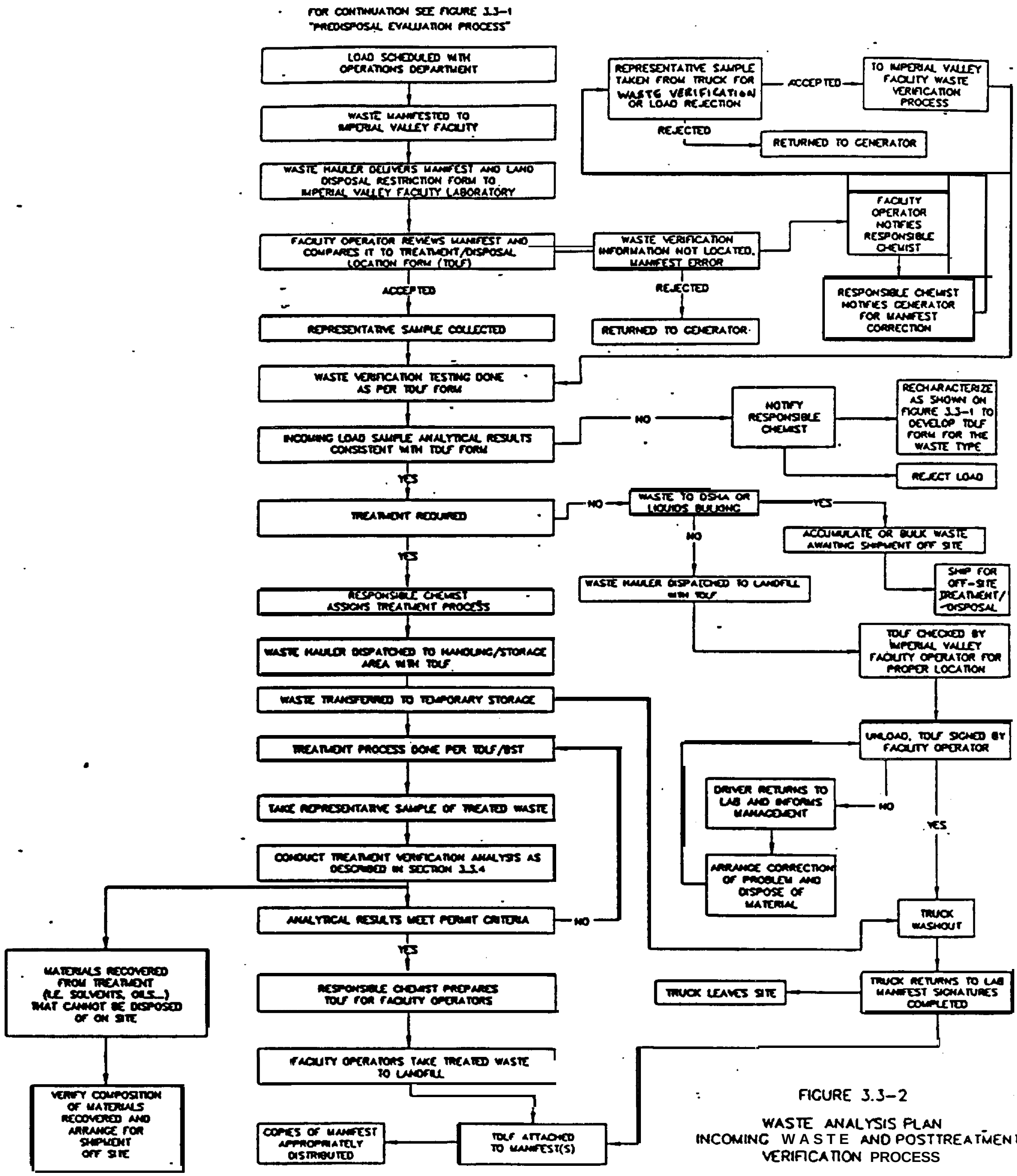

FIGURE 3.3-2

WASTE ANALYSIS PLAN
INCOMING WASTE AND POSTTREATMENT
VERIFICATION PROCESS

CSX SERVICES (IMPERIAL VALLEY), INC.
IMPERIAL VALLEY FACILITY

APPENDIX C

STEAM STRIPPER DESCRIPTION
SECTION 4.3.2.2 AND 4.3.5.2 OF
GSX RCRA PART B
PERMIT APPLICATION

4.3.2.2 Liuuids Stabilization - Area 450B

The process flow diagram for Area 450B is shown in Figure 4.3-2. The process streams are described below:

* Stream Nos. 15, 12B, 32, and 33
  Wastes that contain no free oil (stream 15) will be routed directly to the stripper preheater. Wastes containing free oil will be processed through the oil separators, which are designed for a flowrate of 60 gpm each. To maintain the influent flows at 60 gpm, manually adjustable valves and flowmeters will be installed in the lines upstream of the oil separators. Streams 12B and 32 represent sludges and recovered oils that will be pumped to the pug mill (Area 100) and to the oil tank (Area 200B), respectively. Oil-free water (stream 33) will be pumped to the stripper preheater.

* Stream No. 17A, 17B, 17C, 35 and 39
  The volatile organic emissions (streams 17A, 17B, 17C 17D, 17E, and 17F) will be routed to the Knockout (KO) drum, where the vapors will be separated from the influent stream. Acid fumes in the vapor stream from the KO pump will be neutralized in a caustic scrubber. The scrubber vapors will then be conveyed via the vapor aspirator to the low-pressure steam generator, where they will be mixed with the primary combustion air. If for any reason the steam generator is not operating, the vapors will be diverted via a three-way control valve, operated by an automatic input from the boiler control panel, to a refrigerated condenser and activated carbon adsorption units, where the organic components will be completely adsorbed before the vapors are released to the atmosphere.

The knocked-out condensate (stream 35) will be pumped by KO liquid pump to the stripper preheater under level control.

* Stream Nos. 34 and 36

Stream 34 will be a combination of streams 15 and 33 mixed with the KO liquid (stream 35) and then pumped (stream 36) to the tube side of the stripper preheater. (A steamheater will be used during start-up.)

* Stream Nos. 38 and'13

The stripper bottom pump will pump the treated water through the shell side of the stripper preheater and to the evaporation tanks in Area 250 (stream 38) and/or to the pug mill in Area 100 (stream 13). Stream 13 will be flow controlled, whereas the flow to Area 250 (stream 38)'will be under level control to maintain a constant level in the stripper bottom.

The stripper bottom pump will feed the shell side of the stripper reboiler under flow control. Low-pressure steam in the tube side of the reboiler will partially vaporize the liquid in the reboiler under temperature control, to maintain the desired vapor/liquid ratio in the return line to the stripper. The vapors, by rising in the stripper, will countercurrently meet the liquid feed in the trays and strip off the volatile components. By increasing the mixed phase (vapor/liquid) temperature, additional stripping can be obtained.

* Stream Nos. 37 and 40

The vapors released by the VOC Stripper will be routed to the low-pressure steam generator, whe-re they will be co-fired with natural gas and destroyed.

The temperature in the VOC stripper will be maintained by recirculating the stripper bottoms through the stripper reboiler. A temperature controller will regulate the flow of the low-pressure steam through the tube side of the reboiler by operating the steam supply valve (stream 40).

4.3.5.2 Liquids Stabilization Area - Area 450B

Oil Separator System

The oil/water separator (Z-451) will be a-package unit that separates the lighter-than-water oil. The separator will use an inclined arrangement of corrugated plates stacked upwards at a 45° angle. The separator will be an aboveground tank, in accordance with 40 CFR 260.10, constructed of carbon steel and lined with epoxy. Oil and water will be discharged from the separator tank by the oil and water pumps (P-454 and P-455), designed for 5 and 40 gpm at 30 psi, respectively.

The discharged oil phase will be treated with a deemulsifying chemical and pumped to a 500-gallon oil storage tank (TK-204) in Area 200 pending transport off site.

VOC Stripper System

The VOC stripper system comprises the following components:

* Stripper Preheater E-451
  The shell-and-tube heat exchanger will preheat the incoming treated liquid from Area 450A to a temperature of 120 to $150^{\circ}F$. It will be a cylindrical, horizontal exchanger constructed of 304 stainless steel (SS), with dimensions of approximately 2 feet in diameter and 10 feet in length.

* Start-up Heater E-453
  This shell-and-tube heat exchanger is designed to preheat the stripper feed during start-up. Once the system is operating, the heat exchanger will shut down.

* VOC Stripper C-451
  The cylindrical, vertical, stainless steel stripper vessel will have a diameter of 3 feet and a height of approximately 30 feet. A level controller will regulate the flow from the stripper bottom. The vapor/liquid contact in the stripper will be achieved by randomly

packing.

* **Stripper Reboiler E-452**
The reboiler will have a diameter of 3 feet and a length of 10 feet. The reboiler is designed for 2.75 MM BTU/hr. The temperature controller will regulate the flow of steam from the low-pressure steam header through the tube side of the reboiler.

Vapor Aspirator Svstem

Each aspirator (K-451A and K-451B) will have an output of 200 scfm and will be equipped with a 5-hp motor. The aspirators will be centrifugal-type blowers designed to handle the VOC load from all the closed systems in the treatment area.

Low-Pressure Steam Generators

The packaged low-pressure steam generators (B-451A-B) will have approximate dimensions of 20 feet by 20 feet by 30 feet high, with a 60 foot stack. Each generator is designed to produce 5,025 lb of 50 psig steam per hour and is rated for 150 hp. The boilers will be fueled by natural gas co-fired with waste VOCs.

APPENDIX D

ALM, R.R. ET AL. 1987

STABILIZED FOAM - A NEW TECHNOLOGY FOR VAPOR SUPPRESSION OF HAZARDOUS MATERIALS

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(Presented at the International Congress on Hazardous Materials Management, June 8-12, 1987, Chattanooga,-TN)

INTRODUCTION

For many years, a demand has existed for cost-effective, convenient-to-use, environmentally sound products to protect workers and communities from noxious vapors produced during cleanup of accidental chemical spills. More recently, the need for similar vapor suppression products is rapidly increasing in the areas of waste site remediation and cleanup of soil contaminated from leaking storage tanks. Historically, many approaches have been tried to control vapors during cleanup of contaminated grounds. In the area of hazardous spill cleanup, aqueous foam covers and various absorbents have been employed. Aqueous foams, henceforth referred to as "temporary' foams, generally perform well at vapor suppression for about one hour but then disappear due to foam drainage and collapse. Absorbents such as vermiculite and polyacrylamide can soak up large quantities of chemicals from spills but do not effectively suppress vapors as they do not provide an impervious barrier. During waste site remediation, several inches of clay and polyethylene films are frequently used as ground coverings to maintain air quality. These coverings offer varying degrees of protection but are labor intensive, time consuming, expose workers to pollutants during application, and are not applicable while soil is actively being disturbed during excavation.

DESCRIPTION AND USE OF STABILIZED FOAMS

A new "stabilized" foam technology recently developed by 3M offers long-term suppression of hazardous, flammable and noxious vapors. Using this technology, 3M has specifically designed products for both the hazardous spill and waste site markets. Use of a typical stabilized foam application system involves premixing a proprietary surfactant-based temporary foam concentrate at 6% in water and passing the pressurized premix through a hose line. A proprietary 3M agent is then injected or educted at about 6% concentration into the temporary foam stream and a stabilized foam is produced by passing said stream through a conventional air-aspirating or air-injecting foam nozzle (see Figure 1). Immediately after generation, the stabilized foam exhibits the same fluidity as its precursor temporary foam, but within 1-4 minutes (depending on temperature) suddenly transforms into a tough, elastomeric, nondraining foam. Stabilized foam systems have been formulated which exhibit excellent long-term vapor suppression over a wide variety of chemical hazards, as will be shown in the next section of this paper.

LABORATORY VAPOR SUPPRESSION DATA

Two techniques have been used in the laboratory to measure vapor suppression effectiveness of stabilized and temporary foams over various chemical hazards: gas chromatography (GC) and weight loss. The GC method employs equipment patterned after the Radian Corporation's flux chamber (1,2,3,4); Figure 2 shows a schematic of this equipment along with typical gas flow rates. In a typical experiment, a sample of hazardous material is placed in a glass sampling chamber about 26 cm in diameter with a total capacity of about 5 L. A flow of nitrogen is passed over the sample, picking up its vapors. This sweep is then directed through the gas sample loop of a GC apparatus which automatically analyzes the samples at intervals from 5 to 15 minutes using a GC flame ionization detector, which records vapor concentrations as peak area counts. The experiment is continued for a time to establish a baseline emission rate.

After completing the baseline measurements, a layer of foam, typically one inch in depth with an expansion ratio of about 4:1, is placed over the hazardous material in the test chamber. As before, the nitrogen sweep is passed over the sample into the GC sampling loop. Sample area counts are again recorded periodically until equilibrium is reached. Percent suppression is determined for each sample taken with foam cover using the following calculation:

Percent suppression =

$$\left(1 - \frac{\text{Sample area counts with foam}}{\text{Steady state area counts without foam}}\right) \times 100$$

In general, the GC method is better than the weight loss method as (1) it provides for a direct measurement of the hazardous species and (2) it can be automated for continuous sampling around-the-clock by attaching to a computer.

In situations where the gas chromatograph cannot be used, such as when evaluating nonoxidizable or corrosive materials, weight loss measurements can be used to determine percent vapor suppression. The baseline evaporation rate is determined by placing the hazardous material in an evaporating dish and measuring the weight loss per unit time until steady state is reached. Then, as before, stabilized foam is applied and weight loss per unit time is remeasured. A calculation analogous to that used with the GC method can provide the vapor suppression value at a particular time interval:

Percent suppression =

$$\left(1 - \frac{\text{weight loss per unit time with foam}}{\text{steady state weight loss per unit time without foam}}\right) \times 100$$

Comparison of the,GC and weight loss methods using stabilized foam to suppress gasoline vapors show very close agreement, giving vapor suppression percentages within 2% of each other at all time intervals tested.

Using the GC test procedure, vapor suppression results for temporary and stabilized foam applied to benzene and methyl ethyl ketone (MEK) are presented in, Figures 3 and 4 respectively. For the first several minutes, both foam types effectively reduce emission of the solvent vapors. However, after less than one hour, the temporary foam loses much of its effectiveness, presumably due to foam drainage and collapse. In contrast, stabilized foam over benzene shows greater than 90% vapor suppression over a 63-hour test period. The gradual decrease in stabilized foam performance over MEK is probably caused by solubilization of MEK into the aqueous foam matrix. Benzene, being much less water soluble, is apparently not transported through the stabilized foam cells in this manner.

Performance of stabilized foam (1" depth, 4:1 expansion ratio) in suppressing the vapors of a wide variety of organic liquids is presented in Table I. In general, the less polar or water-soluble the organic liquid, the better stabilized foam performs at suppressing its vapors. In the case of very volatile polar liquids, such as propylene oxide, doubling of foam depth, e.g. applying a second 1" layer of foam, has been found to greatly improve vapor suppression properties, in this case enhancing percent vapor suppression after one hour from 45% to 80%.

Stabilized foams have also shown effectiveness at suppressing fumes from water-reactive corrosive liquids. Unlike the case of volatile organic compounds where low expansion foam (approx. 4:1 expansion ratio) gives optimum vapor suppression performance, higher expansion ratio foams, 15:1 to 18:1, are preferred for controlling water reactive materials because of their lower tendency to drain aqueous liquid. For example, using 15:1 foam, 80-90% suppression of titanium tetrachloride and trichlorosilane fumes was achieved for over three hours.

In general, the overall vapor suppression performance of stabilized foam depends on (1) the chemical nature of the hazard and (2) the thickness and expansion ratio of foam applied to the hazard.

ENVIRONMENTAL COMPATIBILITY OF STABILIZED FOAM

3M has made a considerable effort in evaluating the environmental acceptability of stabilized foam formulations. This evaluation has involved both literature study and mammalian and environmental testing. This section gives the most significant findings and predictions about the environmental properties of stabilized foams.

In evaluating the potential environmental risks of these products, 3M was concerned with the following properties: 1. Toxicity-What is the likelihood of injury to those working with the product? 2. Environmental toxicity-How toxic is the product and its leachate to vegetation and aquatic organisms such as fish, Daphnia, and microorganisms? 3. Leachability-Do the solvents and surfactants used in making the foams leach out? 4. Persistence-Will the polymer or leached materials biodegrade? 5. Degradation products-Will the polymer photochemically degrade into toxic materials?

1. Toxicity. Toxicological data on a typical stabilized foam formulation showed no mammalian toxicity. Rats fed 5 grams of the foam per kilogram of body weight showed no visible effect, indicating the foam is practically nontoxic. The foam was shown to be nonirritating in primary skin irritation, and acute ocular (eye) irritation tests. In formulating these products, attempts were made to select materials with low toxicity, odor, and vapor pressure and high flash point, and water solubility. These properties translate to little exposure to workers using the product, minimal fire hazard, and minimal emissions of volatile organic compounds.

Animal testing has shown that the concentrated stabilizers used in making stabilized foam are practically nontoxic orally, LD_{50} > 5 g/kg, but mildly irritating to skin and moderately irritating to eyes. The concentrated foamers are moderately irritating to the eyes and skin, but are practically nontoxic orally.

2. Environmental toxicity. Aquatic bioassays have been done on stabilized foam and on foamers and stabilizers used to make these foams. As in the mammalian studies, these tests show the stabilized foam to cause insignificant toxicity. The Fathead minnow (*Pimephales promelas*) 96-h LC_{50} for the foam was > 1000 mg/L. No deaths occurred to 20 fish exposed at this concentration. Laboratory tests show that the foamer, even before its 17-fold dilution into the stabilized foam, has LC_{50} values for fish and *Daphnia* greater than 1500 mg/L, indicating insignificant toxicity. The stabilizer, which is also diluted 17-fold in making the stabilized foam, has similar low toxicity. One stabilizer product had LC_{50} values for fish and *Daphnia* ranging from 610 to >1000 mg/L. Bioassays done on this stabilizer both before and after gelling gave similar results.

3. Leachability. The following table shows environmental properties data for leachate from stabilized foam. Leachate was formed by shaking 1 part stabilized foam with 5 parts (by weight) deionized water for 24 hou-rs. Data under the heading "Leachate" are uncorrected. Data given under the heading

"Product" are corrected for the 1:5 dilution from product to leachate.

	Leachate (mg/L)	Product (mg/kg)
Chemical Oxygen Demand (COD)	10,600	53,000
Biochemical Oxygen Demand (BOD)		
5-Day	1,800	9,000
10-Day	4,480	22,400
20-Day	9,210	46,100
Total Organic Carbon (TOC)	2,880	14,400
Methylene Blue Active Substances (MBAS)	220	1,100
(BOD_{20} / COD) in Leachate	0.87	

The above data, in combination with MBAS measurements on foamer alone, indicate that leaching progressed to the point at which the surfactant concentration in the leachate and that remaining in the stabilized foam' were approximately equal.

The above leach test, however, does not give a good indication of the leaching effects that rainfall would have on this product at a hazardous waste site. To more accurately evaluate this, 3M conducted a simulated rainfall and runoff experiment. The experiment approximated the effect of two sequential 0.8 cm simulated rainfalls flowing 15 m (50 ft) over the stabilized foam surface. Each "rain" extracted only a small fraction of the surfactant (5 to 7%). Most (75%) of the leached surfactant was in the runoff rather than in the small'fraction of the rainfall (8%) that seeped through the stabilized foam.

These leaching tests shows that rain will probably leach surfactant from stabilized foam slowly, suggesting a low risk to surface or groundwater. In addition, leachate volumes from stabilized foam are anticipated to be trivial compared to that from other hazardous materials at the site.

4. Persistence. The BOD and COD test results given above show that the leachate is readily biodegradable. Thus leachate will likely degrade before reaching groundwater. On the other hand, the polymer in the stabilized foam should remain immobile due to its resistance to degradation. In one year tests, this stabilized -polymer showed essentially no degradation under aerobic soil OF water conditions, and only partial deterioration under anaerobic conditions.

In fact, only the fluorochemical surfactants, which are sometimes present in stabilized'foam, and then only at levels of <0.2%, have persistence which, if used at higher concentration, could cause concern. Their concentrated usage could potentially cause foaming in groundwater, like that once caused by the now obsolete branched chain alkyl benzene sulfonates. However, their use in stabilized foams during spill or hazardous waste site cleanups is not only low concentration, but is usually a short term, one time application. In most cases, the foam will be removed from the spill OF waste site and destroyed OF disposed of with the hazardous material, further reducing the likelihood of environmental exposure. Fluorochemical surfactants are 5 'to 10 times less toxic than many commonly used hydrocarbon su'rfactants. Their relatively low toxicity, and low usage volume in this product combine to keep their environmental concentrations low and minimize their environmental impact. However, because of this persistence, efforts are being made in the formulation of future stabilized foam products to minimize their use.

5. Degradation products. Another concern which 3M has evaluated is the potential toxicity of stabilized foam photodegradation products. Accelerated weathering tests, done in the laboratory, show that stabilized foam will withstand at least 3 days of solar radiation. If left uncovered by soil OF dust, however, the product will eventually photodegrade. Results of bioassays on the products of the accelerated weathering test using both the Microtox® System and *Daphnia magna* did not significantly differ in toxicity from those done on fresh product. Thus, photodegradation does not appear to increase the toxicity of the stabilized foam.

FIELD TESTS WITH STABILIZED FOAM

Several field tests have been run with stabilized foams confirming utility as vapor suppressants (5):

* Vapor suppression measurements made by Radian Corporation at a petroleum waste site showed that stabilized foam gave around 99% suppression of all major classes of hydrocarbons for at least 24 hours (6).

* In outdoor large-scale tests, stabilized foams have effectively suppressed vapors of cyclohexane, styrene and cyanuric chloride.

* A stabilized foam was successfully applied to a floating roof petroleum storage tank to close a crack which had opened up around the seal.

* A blanket of stabilized foam was applied to sour refinery water at a petroleum company to reduce ambient odors.

* Acid fumes from a thin spill of oleum were effectively mitigated using medium expansion stabilized foam.

Field test equipment is available from two suppliers which will deliver foam in the 25-100 gpm range, useful for treating contaminated grounds up to several acres in size. Using this equipment, foam concentrate can either be premixed with water in a tank or educted into the water stream from a drum; stabilizer can be metered in using either a pump or an eductor (5).

CONCLUSIONS

Stabilized foams provide a convenient and effective means for suppressing vapors during cleanup of contaminated grounds at hazardous waste sites and where spills and leaks have occurred. They are extremely effective at reducing hydrocarbon emissions and have demonstrated utility at controlling vapors of polar organics and water-reactive inorganics. Laboratory methods have been developed to predict effectiveness of stabilized foams as vapor suppressants on a wide variety of hazardous liquids.

During the development of stabilized foams, environmental aspects were given careful consideration and products were formulated to eliminate hazards and minimize risks. The objective was to develop a product which reduces environmental hazards, without creating any significant new environmental problems.

Work is continuing to further modify and develop foam and stabilizer agents for optimum performance and minimum environmental impact in a variety of new application areas.

REFERENCES

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2. R. D. Cox, K. J. Baughman and R. F. Earp, "A Generalized Screening and Analysis Procedure for Organic Emissions from Hazardous Waste Disposal Sites", Management of Uncontrolled Hazardous Waste Sites, Hazardous Materials Control Research Institute, Silver Spring, MD (1982).

3. C. E. Schmidt, W. D. Balfour and R. D. Cox, "Sampling Techniques for Emissions Measurement at Hazardous Waste Sites", Management of Uncontrolled Hazardous Waste Sites", Hazardous Materials Control Research Institute, Silver Spring, MD (1982).

4. R. D. Cox and R. F. Earp, "Determination of Trace Level Organics in Ambient Air by High-Resolution Gas Chromatography with Simultaneous Photoionization and Flame Ionization Detection", Anal. Chem., 54, 2265-2270 (1982).

5. R. R. Alm, K. A. Olson and R. C. Peterson, "Using Foam to Maintain Air Quality During Remediation of Hazardous Wase Sites", to be presented at the Air Pollution Control Association 80th Annual Meeting and Exhibition, New York, NY (1987).

6. Radian Corporation, "3M Foam Evaluation for Vapor Mitigation - Technical Memorandum", DCN #86-204-138-03-01 (August 1986).

FIGURE 1. PRODUCTION OF STABILIZED FOAM

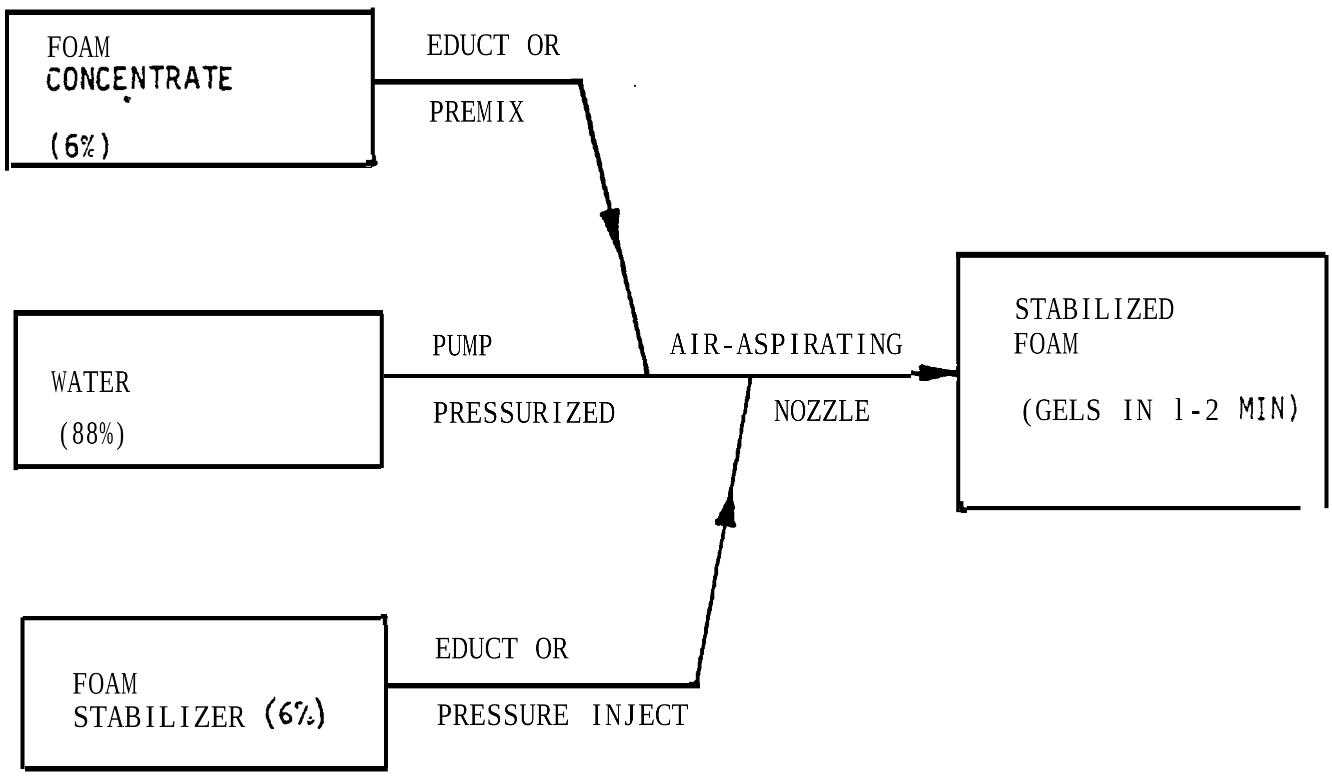
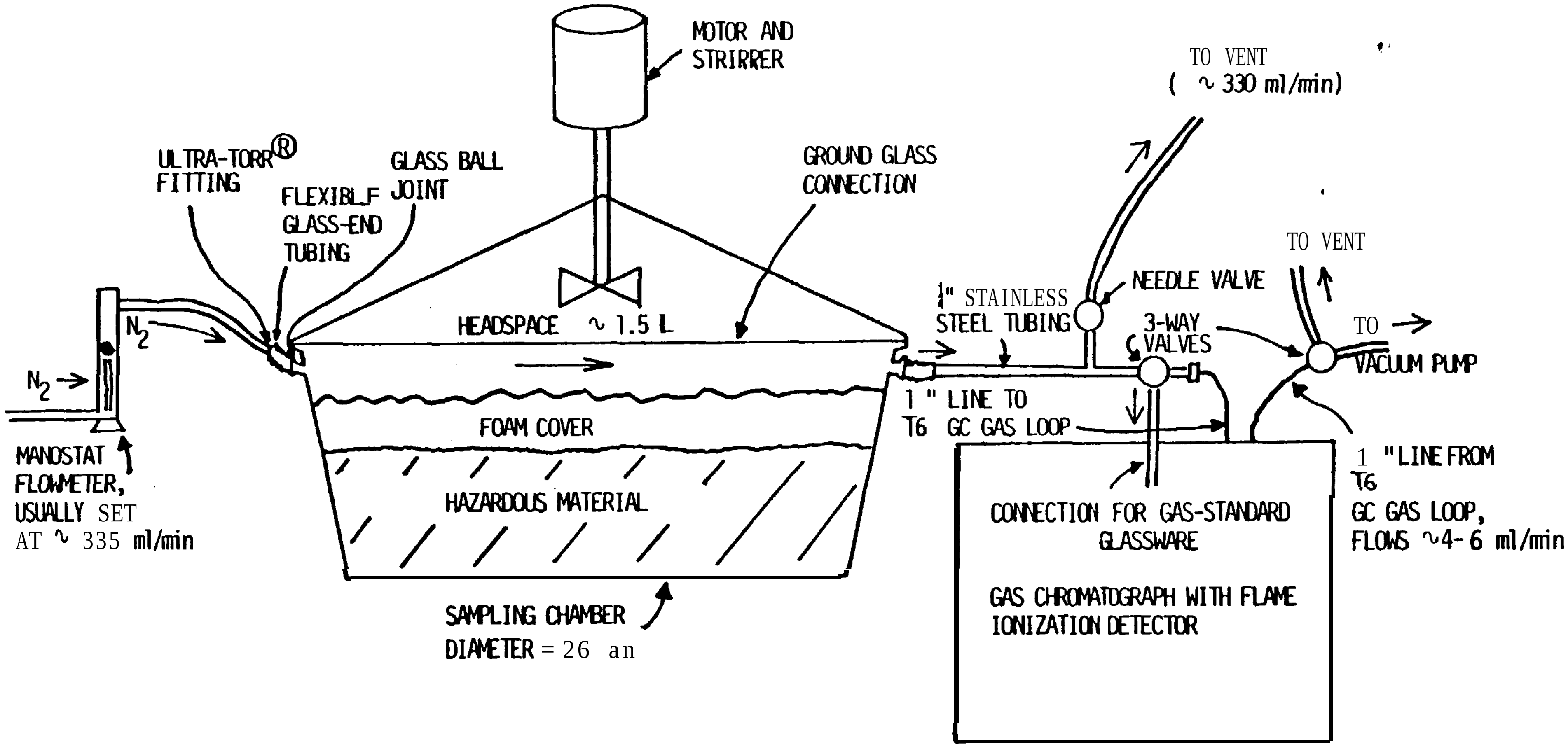


FIGURE 2. FLOW SCHEME FOR VAPOR SUPPRESSION APPARATUS



TYPICAL GC CONDITIONS:

COLUMN FLOW = 1 ml/min
HELIUM SPLIT RATIO = 100/1

Figure 3. BENZENE VAPOR SUPPRESSION

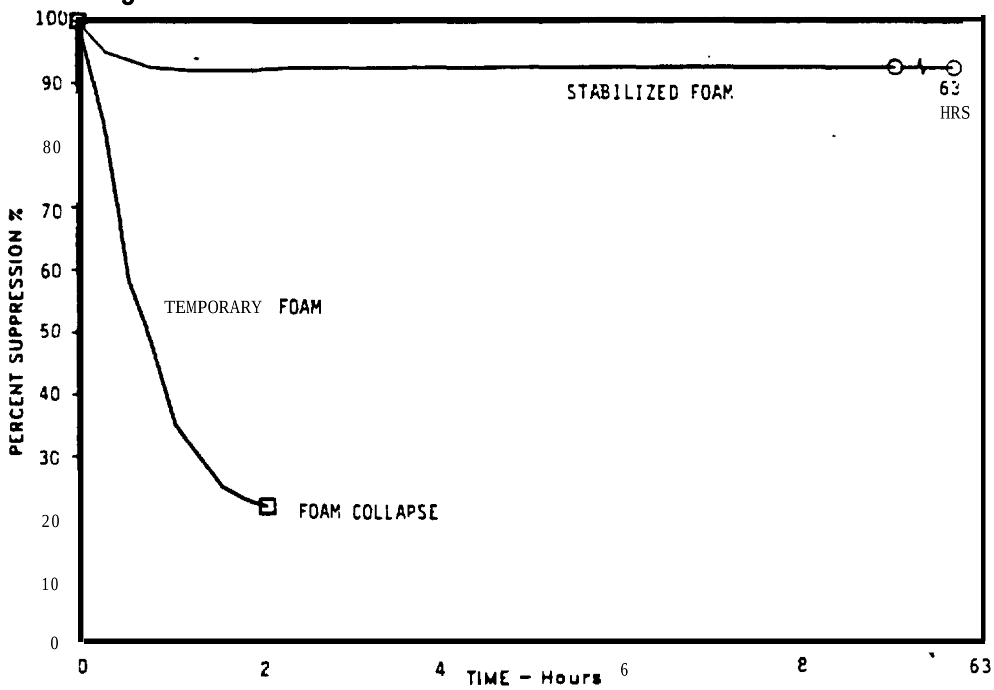


Figure 4. MEK VAPOR SUPPRESSION

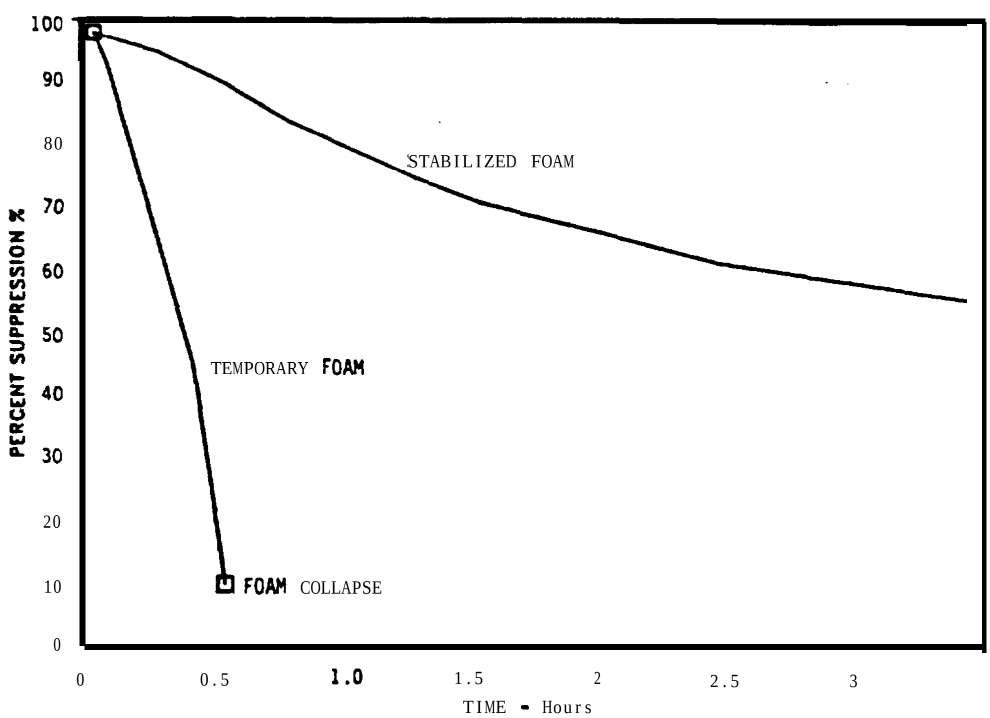


TABLE I. VAPOR SUPPRESSION OF ORGANIC LIQUIDS USING STABILIZED FOAM (a)

Organic Liquid	Percent Vapor Suppression Measured After: 1 Hour	4 Hours	8 Hours	18 Hours	24 hours
Acetone	86	63	53	44	N.R.
Acrolein	84	55	50	50	N.R.
Acrylonitrile	58	33	28	N.R.	N.R.
Chloroform	92	60	40	34	33
Hydrogen Cyanide (b)	88	88	N.R.	N.R.	N.R.
Isopropyl Alcohol	95	71	59	43	40
Methyl Methacrylate	77	65	64	N.R.	62
Toluene	86	92	96	97	N.R.
Trichloroethane	98	98	98	98	98
Vinyl Acetate	86	78	77	77	N.R.

(a) Foam applied at 1" depth, expansion ratio approx. 4:1
(b) Used weight loss method for HCN, GC method for all others

APPENDIX E

LETTER FROM JULIA WILCOX, PROGRAM ADMINISTRATOR AT ENSECO, TO DOUG REABER AT ENVIRON

California Analytical Laboratory

RECEIVED NOV - 2 1990

Enseco
A CORNING Company

October 31, 1990

Doug Reaber
Environ
5820 Shellmound Street
suite 700
Emeryville, CA 94608

Dear Mr. Reaber:

At your request, I am provlding general comments on analytical results for your groundwater monitoring program at the Laidlaw Imperial Facility,

In question are results for acetone, methylene chloride (Method 8240) and phthalates (Method 8270). Under normal laboratory operating conditions, these compounds may be found In the method blanks *or* samples at concentrations exceeding the reporting limits. Based upon U.S. EPA guidance, we recommend that results for these analytes be considered suspect unless their concentrations exceed elther 5 times the reporting limit (R.L.) or 10 times the amount in the blank. For example:

Analyte	R.L.	5 x R.L.
methylene chloride	5 ug/L	25 ug/L
acetone	10 ug/L	50 ug/L
bis(2-ethylhexyl)phthalata	10 ug/L	50 ug/L

These recommendations should be considered as guidance only. Method blank contamination can occur sporadically and there is a posribllity for contamination to occur anytime between sampling and analysis. Therefore I recommend that the results of both the trip blanks and field blanks be evaluatad in addition to the laboratory method blanks in determining significant concentrations,

Doug Reaber
October 31, 1990
Page Two

There was also some question concerning detectlon of total phenolics in samples collected durfng late 1989 and early 1990. These same wells are now showing no detectable phenolics (2nd and 3rd quarter 1990). During April of 1990, we suspected a sporadic contamination problem and initiated a system audit of the preparation and analysis procedure for total phenollcs. Although the audit did not identify any problems, there was a renewed effort to pay particular rttentlon to the cleanliness of the glassware used for the distlllatlon. Again, I recommend that the trip blanks and field blanks be evaluated In addition to the method blanks.

We are continually striving to control the laboratory environment to minimize potential sources of contamination. If you have any questions please give me a call.

Sincerely,

Julia Wilcox

Julia Wilcox
Program Administrator

APPENDIX F

DESCRIPTION OF ACE 2588
AIR TOXICS RISK ASSESSMENT MODEL

DEVELOPMENT OF A COMPREHENSIVE MODEL FOR AB 2588 AIR TOXICS RISK ASSESSMENT

Presented at:

CURRENT ISSUES IN AIR TOXICS
Air & Waste Management Association, Golden West Section
October 29-30, 1990, Sacramento, California

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I. INTRODUCTION

The Air Toxics "Hot Spots" Information and Assessment Act of 1987, commonly known as AB 2588, established a statewide program for the inventory of air toxics emissions from individual facilities as well as requirements for risk assessment and public notification of potential health risks. Local air pollution control districts are to determine which facilities will be required to prepare risk assessments based on a prioritization process which involves consideration of potency, toxicity, quantity of emissions, proximity to sensitive receptors (hospitals, daycare centers, worksites and residences) and any other factors determined by local districts to cause potential significant risk. As part of this process, districts are to categorize facilities as high, intermediate or low priority. Facilities designated as "high priority" are required to submit a health risk assessment within 150 days following the District's notification.

Requirements for health risk assessments are established in the AB 2588 Risk Assessment Guidelines published recently by the California Air Pollution Control Officers Association (CAPCOA, 1990). These guidelines have been developed by the CAPCOA AB 2588 Risk Assessment Committee which includes representatives of 11 local districts, the California Air Resources Board (ARB) and the California Department of Health Services (DHS). The guidelines establish consistent risk assessment methods and reporting procedures to expedite the review of risk assessments by regulatory agencies and to minimize their revision and resubmittal.

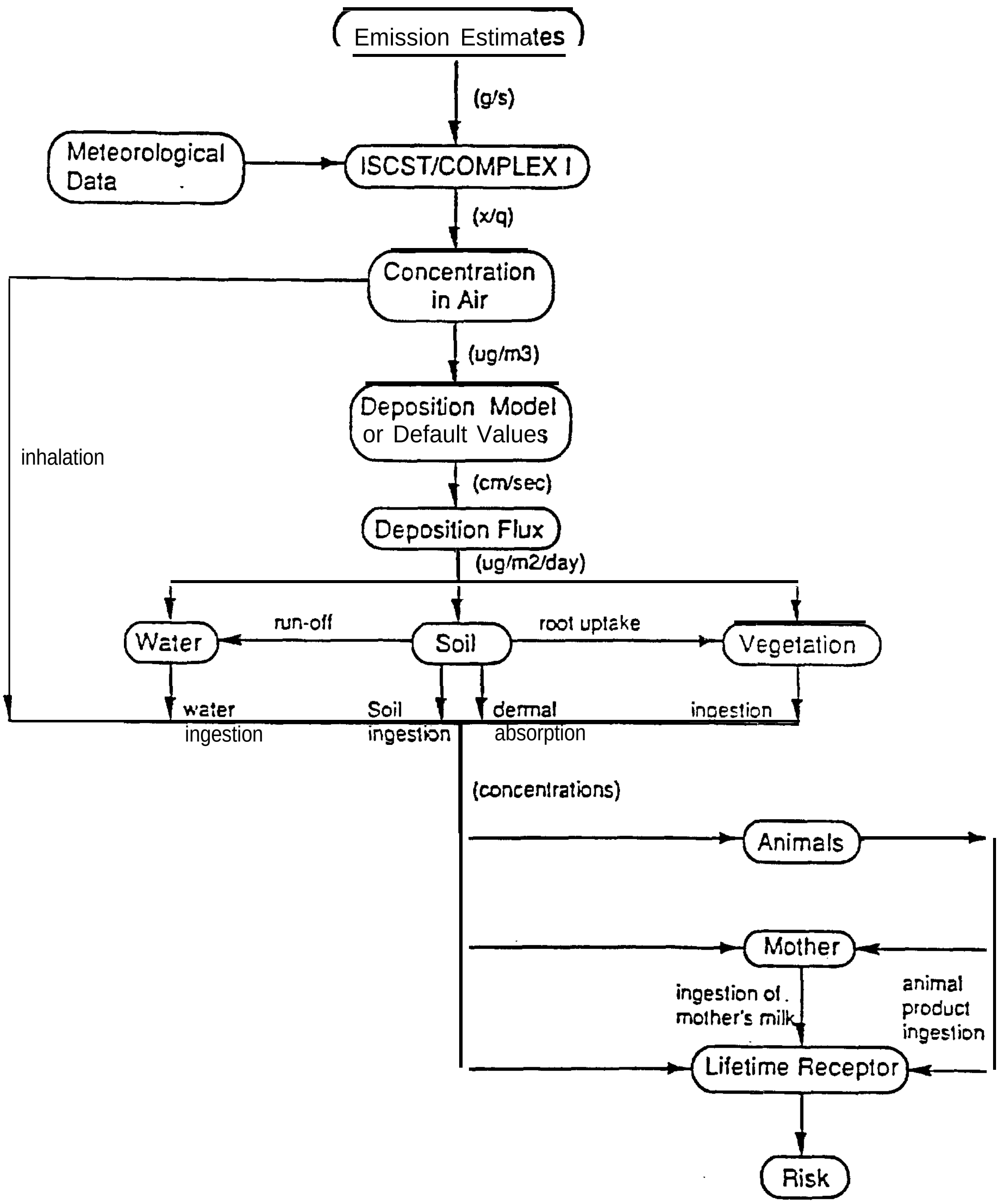
This paper describes the development of a comprehensive health risk assessment model which meets the requirements of the CAPCOA AB 2588 Risk Assessment Guidelines. The model was developed recently by Applied Modeling Inc. (AMI) under guidance from air toxics staff of Santa Barbara County Air Pollution Control District (SBCAPCD). The model is given the acronym ACE2588 (Assessment of Chemical Exposure for AB 2588) and incorporates the algorithms and recommendations of the CAPCOA AB 2588 Risk Assessment Guidelines. The ACE2588 model is designed for multipathway risk assessment and is capable of evaluating potential health risks from multiple pollutants (cancer and non-cancer) emitted from multiple sources located in a wide range of settings (flat or complex terrain, rural or urban, onshore or offshore). Model development is described in Section II. Results of an application of the ACE2588 model are discussed in Section III.

II. MODEL DEVELOPMENT

As defined under AB 2588, a health risk assessment includes a comprehensive analysis of the dispersion of hazardous substances in the environment, the potential for human exposure, and a quantitative assessment of both individual and population-wide health risks associated with those levels of exposure. As shown in Figure 1, an exposure assessment of toxic pollutants emitted from a facility typically involves the following steps: 1) identify pollutants and their emissions, 2) calculate pollutant concentrations in ambient air through dispersion modeling, 3) evaluate pollutant concentrations in other media such as soil,

FIGURE 1

EXPOSURE FLOWCHART



drinking water and food, 4) estimate exposure doses, and 5) characterize health risks. Methodologies implemented in the ACE2588 model for each of these steps are described below. Details are presented in an user's guide (AMI, 1990).

A. Identification of Toxic Pollutants

For AB 2588 risk assessments, pollutants to be evaluated are from the list of chemicals for which emissions are quantified according to Appendix A-l of the AB 2588 Emission Inventory Criteria and Guidelines Regulation. This list identifies substances which are considered known or potential carcinogens, and those for which non-cancer health effects are to be evaluated as a result of acute and/or chronic exposures.

Air toxics and associated health effect data recommended in the CAPCOA Risk Assessment Guidelines are contained in an input file to the ACE2588 model. This database contains over 120 carcinogens and noncancer pollutants. Unit risk factors for computing cancer risk through inhalation and potency slopes for estimating risk from non-inhalation pathways are specified for carcinogens. Acceptable exposure levels and acceptable oral doses (for multipathway pollutants) are required for non-cancer pollutants. In addition, toxicological endpoints affected by the pollutants are specified through indicator flags. Seven endpoints are considered in the ACE2588 model: cardiovascular system, central nervous system, immune system, kidney, liver, reproductive system and respiratory system.

B. Calculation of Pollutant Concentrations in Air

Since potential health effects from an air toxics facility are known to be localized, Gaussian-based dispersion models are frequently used to predict pollutant concentrations in ambient air. Selection of an appropriate model depends on: 1) the nature of the risk assessment (screening or refined), 2) the location of the facility (urban or rural, flat or complex terrain, onshore or offshore) and the types of emission sources (point or area). The CAPCOA AB 2588 Risk Assessment Guidelines and modeling guidelines of regulatory agencies (e.g., SBCAPCD, 1990) should be consulted in selecting the appropriate dispersion model.

The ACE2588 model assumes that all emission sources from the facility are modeled by a guideline dispersion model (e.g., ISCST) with appropriate meteorological data, stack parameters and receptor locations. Unit emission rates (1 g/s) are used for all sources in the dispersion modeling run to create an unformatted file containing partial contributions from each source at each receptor. With this partial contribution file, the ACE2588 model computes for each emitted pollutant the peak l-hour and annual-averaged concentrations for each individual source and all sources combined at each receptor from the actual input emission rates. The model also computes partial contributions from each source to these peak l-hour and annual concentrations. Two options are available for computing annual-averaged concentrations: averaging hourly concentrations over the period of the meteorological data set (e.g., 8760 hours for a year), or computed as 0.1 (10 percent) of the peak l-hour concentrations if sequential meteorological data is not available and worst-case meteorology is used in the modeling (i.e., screening assessment). Peak l-hour concentrations are used in quantifying non-cancer acute health effects, and annual-averaged concentrations in carcinogenic and non-cancer chronic health effects.

C. Calculation of Pollutant Concentrations in Other Media

For pollutants with non-inhalation exposure (i.e., multipathway pollutants), concentrations in other media are required for risk assessments. The following chemicals are identified in the CAPCOA Risk Assessment Guidelines as multipathway pollutants: arsenic, beryllium, cadmium, hexavalent chromium, dioxins/dibenzofurans (as TCDD equivalents), lead, mercury, nitrosamines and all polycyclic aromatic hydrocarbons. For these pollutants, the ACE2588 model uses the algorithms recommended in the CAPCOA Guidelines to compute pollutant deposition and concentrations in soil, drinking water, vegetation (root and non-root crops), farm animals (cattle, pigs, poultry, goats and sheep) and fish. Chemical-specific factors (such as half-life in soil, root uptake, diet transfer coefficients and bioconcentration factors) and site-specific factors (such as water surface area, average annual rainfall and percentage of animal diet provided by grazing) are considered in the calculations.

D. Calculation of Exposure Doses

The ACE2588 model utilizes pollutant concentrations in air and other media to evaluate exposure to humans. Exposure is evaluated by calculating the lifetime average daily dose. In addition to inhalation doses, multipathway pollutants require the calculations of doses from six other pathways (i.e., dermal absorption, soil ingestion, water ingestion, food ingestion through plant products, animal products and mother's milk). As recommended by the CAPCOA Guidelines, a daily average respiration rate of 20 m3/day and an average 70-kg body weight are assumed for humans. Both chemical-specific factors (such as absorption factors and half-lives in mother) and site-specific factors (such as fractions of vegetables, milk, meat and fish that are locally produced) are used in the dose calculations.

E. Calculation of Health Risks

Potential health risks are quantified with the calculated exposure doses. Both carcinogenic and non-carcinogenic health effects are predicted by the ACE2588 model.

E.l Cancer Risk and Excess Burden

The ACE2588 model computes the total excess cancer risk from both inhalation and non-inhalation pathways at each receptor location. The inhalation risk for each pollutant at a receptor location is calculated by multiplying the pollutant concentration in ambient air by its unit risk factor. For a multipathway pollutant, the non-inhalation risk is calculated as the product of its potency slope and the average daily dose of the substance, which is the sum of all non-inhalation doses. The estimated risks for individual substances are added together to provide the total excess cancer risk at each receptor location.

For risk management purposes, the ACE2588 model identifies the maximum individual excess cancer risk, the receptor where this maximum is predicted to occur, and receptors with risks predicted to equal or exceed an user-specified significant risk level (e.g., 1 in a million). For this peak receptor and any other receptors specified by the user, the model can produce tables showing contributions by source and by pollutant.

Excess burden at each receptor is computed by multiplying the predicted risk by the receptor population. Excess burden is computed only for receptors with risks predicted to equal or exceed an user-specified risk level of the impact zone (e.g., 1 in 10 millions). The total excess burden is then computed as the sum of excess burdens at all receptor locations.

E.2 Noncancer Acute Health Effects

If the facility emits pollutants with known acute health effects, then the ACE2588 model computes a total hazard index for respiratory irritation at each receptor. The hazard index for each pollutant is computed as the ratio of the total pollutant concentration (concentration from facility emissions plus ambient background) over the chemical-specific acceptable exposure level. The total hazard index is then computed as the sum of hazard indices of all relevant pollutants.

Acute health effects are significant if the total hazard index at a receptor is equal or greater than 1. For risk management purposes, the ACE2588 model identifies the maximum predicted hazard index, the receptor where this maximum occurs, and all receptors with significant hazard indices. For the peak receptor and other user-specified receptors, the model can produce tables showing contributions to the calculated hazard indices from each source and each pollutant.

E.3 Noncancer Chronic Health Effects

Similar to the evaluation of acute health effects, hazard indices are used to quantify chronic health effects. For multipathway pollutants, the ratio of the sum of non-inhalation doses over the acceptable oral dose is added to the hazard index computed from inhalation exposure. For each receptor, a total hazard index is computed for each separate toxicological endpoint. If the total hazard index for any toxicological endpoint is equal to or greater than 1, then potential chronic health effects are considered to be significant. The ACE2588 model produces tables showing the maximum hazard index, the peak receptor, other receptors with significant health effects, and contributions by source and by pollutant at the peak receptor and other receptors specified by the user.

F. Computer Implementation

The ACE2588 computer code is written in Fortran 77 and an efficient memory management scheme is implemented so that the model can operate on personal computers. The model has been operating on the IBM PC AT and DEC MICROVAX systems, and it should be portable to other computers. All chemical-specific and pathway-specific data are stored in input files which can be modified to add new substances or update site-specific data as required by regulatory agencies. Significant modeling results are summarized in a one-page output. The model also creates a separate output file in a format ready for input to graphics-generating programs.

III. MODEL APPLICATION

The ACE2588 model has been applied to evaluate potential health risks from the proposed modernization of a hazardous waste disposal site located near Santa Maria, Santa Barbara County. This model simulation involved the use of the ISCST model and a sequential meteorological data set generated from measurements at the Santa Maria Airport. Six emission sources, 19 pollutants and 28 receptors were used in the modeling. Figure 2 shows the distribution of the input population. Modeling results are summarized in Table 1, and contours of the predicted individual cancer risks are shown in Figure 3. The maximum individual cancer risk of 1.6E-05 was predicted to occur about 4 kilometers east of the facility's emission sources.

IV. CONCLUSIONS

A comprehensive risk assessment model has been developed for evaluating potential health risks from air toxics. The model, known as ACE2588, fully meets the requirements of the CAPCOA AB 2588 Risk Assessment Guidelines. The model is an efficient tool in the preparation of risk assessments, and the model usage should expedite their review by regulatory agencies. The ACE2588 model is being considered for use in AB 2588 risk assessment throughout California by the CAPCOA AB 2588 Risk Assessment Committee which includes representatives from local districts, the Air Resources Board and the Department of Health Services.

REFERENCES

Applied Modeling Inc., 1990. User's Guide to the Assessment of Chemical Exposure for AB 2588 (ACE2588) Model. Report prepared for Santa Barbara County Air Pollution Control District. June 1990.

CAPCOA, 1990. Air Toxics "Hot Soots" Program Draft Risk Assessment Guidelines. Prepared by the AB 2588 Risk Assessment Committee of the California Air Pollution Control Officers Association. May 1990.

SBCAPCD, 1990. Air Toxics Dispersion Modeling Guidelines (Final Draft). Prepared by Santa Barbara County Air Pollution Control District. April 1990.

FIGURE 2

ACE2588 GRIDDED POPULATION DATA

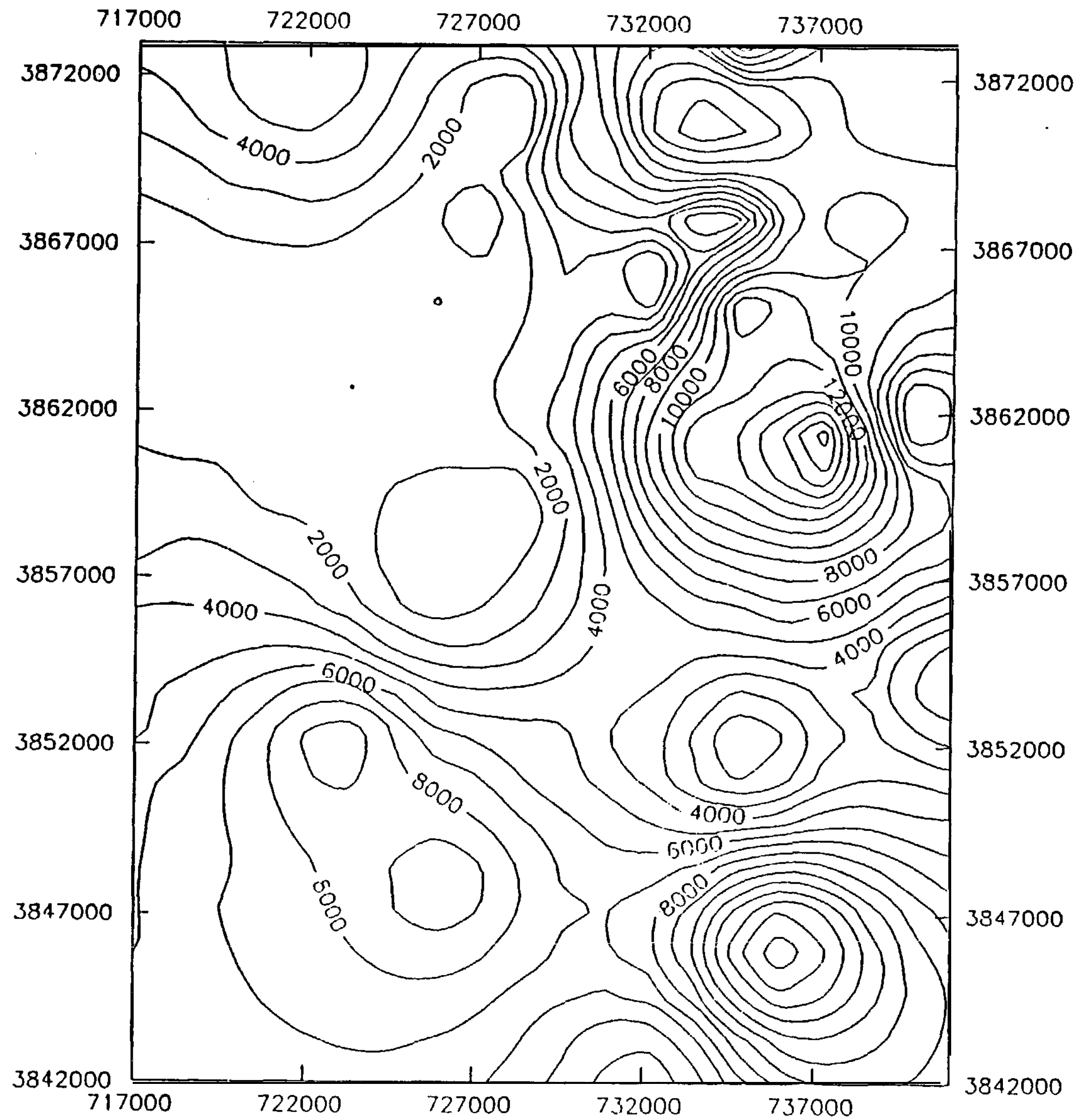


TABLE 1

• ** SUMMARY OF MAXIMUM PREDICTED RISKS • **

CANCER RISK ASSESSMENT

SIGNIFICANT RISK LEVEL = 1.000E-06
IMPACT ZONE RISK LEVEL = 1.000E-07
HAXIHUH PEAK RISK = 1.595E-05
PREDICTED AT RECEPTOR # 9
TOTAL EXCESS BURDEN = 1.236E-01

10 RECEPTORS WITH RISK EXCEEDING SIGNIFICANT RISK LEVEL OF 1.000E-06

1 2 3 4 6 9 11 12 13 27

ACUTE EXPOSURE TO NON-CANCER POLLUTANTS

HAXIHUH ACUTE HAZARD INDEX = 1.511E-02
PREDICTED AT RECEPTOR # 4

0 RECEPTORS WITH HAZARD INDEX .GE. 1

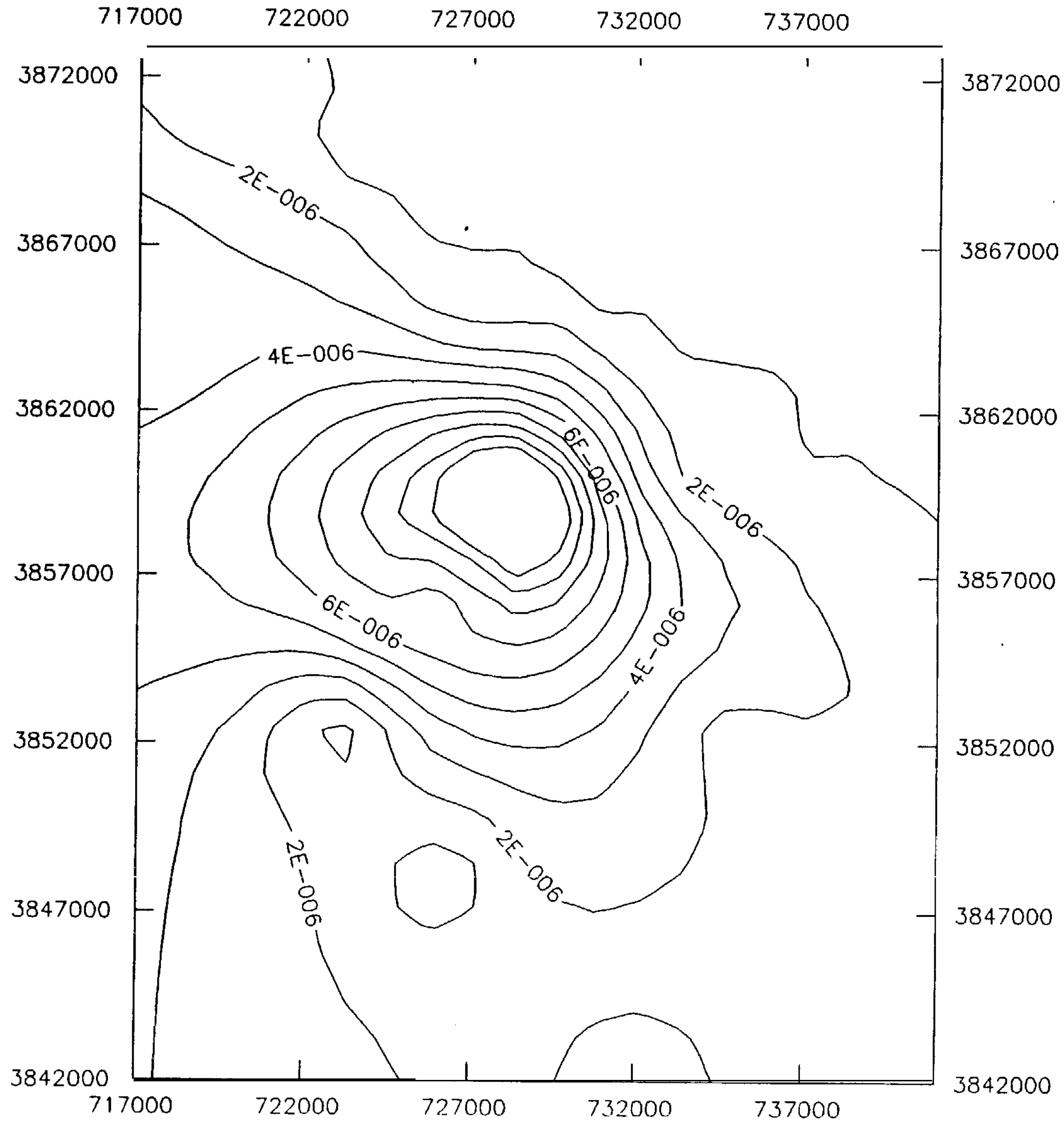
CHRONIC EXPOSURE TO NON-CANCER POLLUTANTS

MAXIMUM HAZARD INDEX FOR AN ENDPOINT = 6.718E-03
PREDICTED AT RECEPTOR # 9

0 RECEPTORS WITH HAZARD INDEX .GE.1 FOR ONE OR MORE TOXICOLOGICAL ENDPOINTS

Figure 3

ACE2588 PREDICTED INDIVIDUAL CANCER RISK



APPENDIX G

LETTER FROM SHARI LIBICKI, MANAGER, AIR QUALITY AT ENVIRON, TO RENEE CAPOUYA, CALIFORNIA AIR RESOURCES BOARD

ENVIRON

December 27, 1990

Ms. Renee Capouya
Toxic Air Contaminant Identification Branch
Stationary Source Division
Air Resources Board
1219 K. Street
Sacramento, CA

Dear Renee:

This letter documents my understanding of the conclusions reached during our phone conversation on December 21, 1990, regarding the use of the summary information of the 1987 BGR database[1] received from the California Department of Health Services (DHS) on December 21, 1990. This letter also discusses the validity of the linear emissions estimation technique.

The information that I received from the DHS was in the form of a LOTUS table, and included the information listed below for certain constituents. It is my understanding that the list represents all compounds of concern for AB 2588 purposes that appeared in any quantity in the 1987 BGR database. The information on each constituent included:

- tons of constituent in each of the liquid, sludge and solid waste streams,
- tons of total wastes in each of the liquid, sludge and solid waste streams for BGR database, total 1987 manifested wastes, and 1987 manifested "non-recycle" wastes, and
- fraction of each constituent (in ppm) in each waste type (liquid, sludge, and solid) based on each waste total (total BGR, 1987 manifested, 1987 "non-recycle" manifested).

A modified printout of that data is included with this letter. I have added some information to the summary, and that is discussed below. I also removed the information dealing with fractional constituent concentration in the full 1987 BGR database, and the 1987 manifested wastes, leaving only the information for the 1987 "non-recycle" waste, as that is the basis of comparison that we were asked to use.

[1] In this context, the 1987 BGR database is that part of the BGR database that contains 11.8 million tons of waste, and not the entire database that contains over 27 million tons of waste.

ENVIRON · Counsel in Health and Environmental Science Corporation
Marketplace Tower. 5820 Shellmound Street, Suite 700, Emeryville, CA 94608 · (415) 655-7400 · FAX (415) 655-9517

Identification of "missing compounds" for the 1985 database

I understood from your letter dated December 21 and our phone conversation, that the missing compounds that are to be added to the analysis of the 1985 database are limited to the following: arsenic, mercury, nickel, chloroform, perchloroethylene, and trichloroethylene.

Inclusion of the effects of mercury's vapor pressure in the emissions estimations

We agreed that the rate of mercury emission for the purposes of the EIR would be calculated as if it were a solid material with no vapor pressure. However, the vapor pressure of mercury is 0.02 mm Hg. Of the compounds for which emissions were estimated, the two with the nearest vapor pressures are PCDD (7.3 x 10^{-10} mm Hg) and ethylene dibromide (EDB; 12 mm Hg). In order to understand the potential error in the estimate, I agreed to estimate mercury emission rates as if it had the vapor pressure of both EDB and PCDD.

These comparisons must be made on the 1985 emissions estimates, as there was no PCDD reported in the sludge and liquid wastes, and no EDB reported in the sludge waste in the 1987 data provided. As there was no PCDD reported on a liquid basis for the 1985 data, the comparisons will be made on a whole stream basis. A ratio of emissions to the incoming tons of constituent in the waste stream is shown in Table 1.

TABLE 1
Calculation of Emission Factors

	Ethylene Dibromide(a)	PCDD(a)
Daily Tons	.00107	0.00062
Emissions (b) (lb/day)	.0093	3.5 x 10^{-9}
Emissions Factor (lb/day per ton)	8.69	5.6 x 10^{-6}

(a) values taken from 1985 database
(b) includes hazardous waste landfill and hazardous waste treatment area

The estimated emissions factors for EDB and PCDD are calculated as the ratio of the total constituent emissions to the total incoming waste tonnage. The emissions factor, when multiplied by the incoming tons of mercury, provide an estimate of the incremental emissions of mercury based on the vapor pressure. The potential total incoming tonnage of mercury, received at the Facility is estimated based on the 1987 database is 0.09 tons per day. The resulting estimated emissions of mercury, based on the PCDD emission factor above is 5.4 x 10^{-7} pounds per day, and the emissions based on the EDB emission factor above is 0.782 pounds per day. It is likely that the actual increase in mercury emissions due to the vapor pressure lies between these two estimates, as the vapor pressure of mercury is between that of EDB and PCDD.

By comparison, the emissions of mercury were estimated to be 0.0028 pounds per day, using the 1987 database. Because the estimated range for emissions of mercury (as a vapor) described above is large and brackets the estimated rate of particulate emissions, the significance of vapor-phase emissions of mercury cannot be fully assessed by this preliminary analysis. A more detailed analysis of mercury emissions will be performed using the 1987 database as part of the ATC review process.

Comparison of the values in the summation transmitted on December 6, 1990 with the list transmitted on December 21, 1990

We discussed the comparison of the summary transmitted on December 21 with that transmitted on December 6. I noted that all metals totals from the December 6 summary were within one percent of those in the December 21 summary, except for lead, which was 16% higher in the new summary. As a result, I increased the emissions estimate of lead for the 1987 preliminary risk assessment by 16%. The organic totals were all within 5% (with chloroform being approximately 5% higher in the December 21 summary), with the exception of ethylene dichloride. There was no ethylene dichloride in the summary of December 21, and there was 0.7 tons of ethylene dichloride in the December 6 summary. In view of the preliminary nature of the estimates and the general agreement between the two summaries, I did not change the emission estimates of the organic constituents from those based on the December 6 summary.

Exclusion of substances with a negligible impact jivm the full 1987 database analysis

We agreed to exclude substances that have a negligible impact from the preliminary risk assessment that will be performed using the 1987 data As we discussed, the determination of "negligible impact" was made on the basis of total waste stream constituent tonnages, and CAPCOA risk factors for solids and organics (which were grouped separately in the DHS summary of the 1987 BGR database). I have added the tonnages and risk factors to the attached DHS summary.

For all constituents, the CAPCOA risk factor was multiplied by the total amount of the constituent in the liquid, sludge and solid streams. The product of the CAPCOA risk factor and the total tonnage of constituent in the 1987 BGR database is listed in the attached table, and shall be referred to as the "relative risk". The relative risk is used to determine which compounds may be considered to have negligible impact.

The only solids on the DHS list that were not already included in the emissions estimates for the 1987 database, were crystalline silica, beryllium, barium, selenium and thallium. We agreed that barium and thallium were not necessary to consider. The relative risk due to selenium was far less than 1% of the relative risk due to cadmium. The relative risk due to beryllium and its compounds is also less than 1% of the risk due to cadmium, but significantly greater than the relative risk due to selenium. Therefore, we agreed to consider beryllium for the preliminary risk assessment, but not selenium. The relative risk due to crystalline silica was also greater than 1% of that due to cadmium, so crystalline silica was also considered in the preliminary 1987 risk assessment.

For the organics listed in the DHS summary, a similar procedure was carried out. The composite relative risk of the organics that contribute the bulk of the organic risk was calculated by summing the relative risk due to benzene, methylene chloride, formaldehyde, ethylene dibromide, ethylene dichloride and chloroform. The relative risk due to other organic compounds was compared to the composite relative risk, and those compounds for which the relative risk was greater than 1% of the composite risk were include in the preliminary risk assessment for 1987. I confirmed for you that these comparisons indicated that acrylamide, carbon black[2], creosote, hydrazine, thiourea, trichloroethane and urethane should be included in the analysis. This same comparisons also indicate that benzidine, styrene, and PAHs should be included and this is done.

Estimation of emission rates for those substances which may have an impact on the risks

We discussed the method for estimating the emission rates for the new compounds. In view of the preliminary nature of the risk assessment in the EIR, we agreed that the emission rates could be estimated in the following manner.

For the solid constituents (carbon black, PAHs[3] and beryllium),

- the ratio of the total solid constituent in all three waste streams to total cadmium was calculated, and
- the emission rate of each compound was estimated to be the product of that ratio and the cadmium emissions rate.

For each organic compound, a compound with higher vapor pressure was chosen as a compound for which emissions could be “tracked”. Each compound is listed with its

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[2] Although carbon black was listed as an organic compound in the DHS listing, we agreed that for the purposes of emission estimation, it should be considered to be a solid.

[3] Although we did not discuss the proper treatment of PAHs, I placed it as a solid, rather than an organic for the following reasons. The larger PAHs are the compounds with more significant risk factors. Volume II of. the Air NGTS states that the larger PAHs arc properly considered particulate matter.

"tracker compound" in Table 2. The ratio of the tons of each constituent in each waste type to the tons of the tracker compound in each waste type was calculated. The largest ratio for each of the three waste types was then selected. The estimated total emissions of each constituent was the product of the largest ratio for the constituent, to the emissions for each tracker compound.

For example, as is shown in Table 2 in the case of acrylamide, the ratio of total acrylamide to total EDB is less than one. However, the ratio of acrylamide to EDB is the liquid wastes is over 53. Therefore, the emissions of acrylamide were estimated to be 53 times that of the emissions of EDB. Therefore, this method will have the effect of providing conservative, and in some cases, very conservative estimates of the emission rates of the extra compounds.

Discussion of the validity of the linear emissions estimation technique

Although we did not discuss this topic during our phone conversation, you have requested a discussion of the validity of the linear emissions estimation technique. The linear estimation technique was only used for those compounds for which the 1987 database showed a higher fraction of constituent than did the 1985 database, and for those additional compounds that CARB requested be included and were not already part of the analysis of the 1985 data. The compounds for which the 1987 database showed higher fractions of materials included all metals, ethylene dichloride (liquids), carbon tetrachloride (liquids), ethylene dibromide (solids), and methylene chloride (liquids). The additional compounds for which CARB requested analysis are arsenic, mercury, nickel, chloroform, perchloroethylene, trichloroethylene, and those compounds that were not screened out as discussed above.

The emissions estimation method was based on the assumption that smaller inputs would yield smaller emissions, and larger inputs would yield larger emissions, on a linear basis. The original calculations were done on a weighted average method, where the emissions from each record of waste were weighted according to the mass of waste in the record. Thus, if a record were twice as large, but contained the same constituent percentages, the emissions from that stream would simply be twice as large. Thus, the linear estimation technique is an excellent approximation if the differences in total constituent tonnages stems from either differences in the number of waste records, or differences in the size of the individual waste records.

During our review of the differences in the 1985 data and the 1987 data, however, we noted that the maximum concentration of constituents in the waste streams tended to be higher in the 1987 data, especially for metals in the liquids and sludge streams. In addition, the maximum concentration of organics in the solids streams also tended to be higher in the 1987, database. This requires further consideration of the validity of the linear estimation method.

In further consideration, it should be noted that the emissions processes are very different for metals (excluding mercury, which has an unusually high vapor pressure for a metal) than they are for organics. The emissions of metals are usually due to emissions of particulate matter that is contaminated with metals. A small amount of organic emissions also stem from contaminated particulate emissions. However, most organic emissions result from volatilization of the compounds during process operations.

Emissions of materials that are associated with contaminated particulate matter are proportional to the fraction of contaminant in the particulate phase. Particulate emissions are expected from waste moving operations at the facility, primarily in the solid waste stabilization area, and in the landfill. As the emissions of contaminants on particulate matter is proportional to the fractional content of contaminant in the particulate, the linear estimation method is valid for the estimation of metals emissions from the facility.

The emissions of volatile materials is largely due to volatilization. The rate of volatilization should be a function of constituent vapor pressure. There are three general states in which an organic compound may exist in a waste stream: 1) aqueous phase solution, 2) organic solutions, and 3) organic materials adsorbed to solid material. The accuracy of the linear estimate approach may vary for each of the three general states.

For most organics dissolved in aqueous solution, there are two asymptotic regions where vapor pressure is related to concentration. At low constituent concentrations, in aqueous phase vapor pressure is a nearly linear function of constituent concentration. This is known as the Henry's Law region. At high constituent concentrations, where the constituent is at or beyond its solubility limit, the vapor pressure does not increase with concentration.

For organic compounds that are dissolved in other organic compounds, the vapor pressure is often modeled as a linear function of constituent concentration. For organic constituents that are not totally dissolved in other organic compounds, the vapor pressure can be modeled as a linear function of concentration up to the constituent's solubility limit.

For organic materials adsorbed to solids, the vapor pressure may be a linear function of concentration, or it may be independent of concentration, if the compound is at its solubility limit, depending on the nature of the liquid-solid interaction. Thus, for organic materials in aqueous solutions, organic materials in organic solutions, and organic materials adsorbed to solids, the vapor pressure is generally either a linear function of concentration, or, at high concentrations in some solutions, independent of concentration.

To maintain the conservative nature of the estimate, the linear estimation was extrapolated from compounds with the nearest higher vapor pressures. In some cases, for example, the extrapolation of acrylamide (vapor pressure = 0.014 mm Hg) emissions from calculated ethylene dibromide (vapor pressure = 12 mm Hg) emissions, the vapor pressure of the example compounds were several orders of magnitude higher than the compounds for which emissions were estimated.

Therefore, the linear estimation method is valid in the cases where the differences in stream content are due to differences in stream sizes or numbers, and for non-volatile constituents. It is valid in many cases for volatile constituents where the differences are due to differences in constituent composition. The application of the method for the preliminary analysis of the emissions using the 1987 database are conservative in at least two ways: 1) compounds with higher vapor pressure were used, and, 2) for those compounds that were in the DHS summary of December 21, and not in the DHS summary of December 6, the highest ratios of constituent concentration in each waste type were used.

Summary

Based on our agreement on the matters discussed in this letter, we have completed the emissions estimates for the risk assessment that is to be included in the EIR and is based on this preliminary analysis of the 1987 data. As I noted, these emission estimates are conservative, and many of them are extremely conservative. These estimates have been used to portray the potential range of risk values using the 1985 and 1987 database. Further analysis of the 1987 data will be conducted during the continuing ATC review process.

Please let me know if I can be of further assistance to you.

Sincerely,

S. Libicki

Shari Libicki
Manager, Air Quality

cc: Genevieve Shiroma, ARB
Janette Brooks, ARB
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Katherine Hon, ERCE

TABLE 2

Compound	Liquid	Sludge	Solid	TOTAL
Beryllium .	3.56	0.0007	15.46	19.0207
Cryst. Silica	0.0021	0	211.15	211.1521
Acrylamide	0.84	0	1.1235	1.9635
Carbon Black	11.07	0.218	149.35	160.638
Creosote	3.27	1.39	62.01	66.67
Hydrezine	47.70	0.0001	0.7119	48.492
Trichloroethane	2875	573	332	3780
Thiourea	0.997		0.6505	1.6475
Urethane	0		4.17	4.17
Cadmium	350.9	28.67	42.6	422.17
Benzene	68.72	96.6	100.4	265.72
EDB	0.0157	0	2.18	2.1957
Chloroform	91.05	19.84	19.28	130.17
PAH	0	0	0.3364	0.3364
Styrene	525	26.2	82.6	633.8
Benzidine			0.0173	0.0173

		Ratio of Compound Tonnage To Tracker Tonnage				Multiply By:
Compound	Tracker Compound	Liquid	Sludge	Solid	TOTAL	
Beryllium	Cadniun	0.0101	0.0000	0.3629	0.0451	0.0451
Cryst. Silica	Cadmium	0.0000	0.0000	4.9566	0.5002	0.5002
Acrylamide	EDB	53.5032	0.0000	0.5154	0.8942	53.5032
Carbon Black	Cadmium	0.0315	0.0076	3.5059	0.3805	0.3805
Creosote	Benzene	0.0476	0.0144	0.6176	0.2509	0.6176
Hydrazine	Benzene	0.6953	0.0000	0.0071	0.1825	0.6953
Trichloroethane	Benzene	41.8364	5.9317	3.3068	14.2255	41.8364
Thiourea	Chlroform	0.0110	0.0000	0.0337	0.0127	0.0337
Urethane	Benzene	0.0000	0.0000	0.0415	0.0157	0.0415
Styrene	Benzene	7.6397	0.2712	0.8227	2.3852	7.6397
Benzidine	Benzene	0.0000	0.0000	0.0002	0.0001	0.0002
PAH	Cadniun	0.0000	0.0000	0.0079	0.0008	0.0008

DHS SUMMARY

CONSTITUENT NAMES	TONS OF CONSTITUENT	LIQUID TONS OF WASTE#	LIQUID MEAN CONCENTRATION (PPM)#	TONS OF CONSTITUENT	SLUDGE TONS OF WASTE#	SLUDGE MEAN CONCENTRATION (PPM)#	TONS OF CONSTITUENT	SOLID TONS 09 WASTE#	SOLID MEAN CONCENTRATION (PPM)#	TOTAL TONS	CAPCOA RISK FACTOR	RELATIVE RISK
ARSENIC	153.4767	238271.00	644.1266	II.2647	96489.00	116 7460	266.3366	663866.00	401.1903	431.0780	0.0043	I 8536
ARSENIC COMPOUNDS	0.0006	ZY271.W	0.0025	0.0000	96489.00	0 0000	0.0238	663866.00	0.0359	0.0244	0.0043	0.0001
BARIUM	72.3908	2P271.W	VI.9720	~I.1110	96489.00	375.5397	488.6672	663866.00	736.0931	542.4690		0.0000
BERYLLIUM	3.5642	238271.00	14.9586	0.0007	96489.00	0 0073	12.6116	663866.00	18.9972	16.1765	0.0024	0.0388
BERYLLIUM COMPOUNDS	0.0901	2P271.W	0.0004	0.0000	96489.00	0.0990	2.8521	663866.00	4.2962	2.8522	0.0024	0.0068
CADMIUM	350.2522	238271.00	1469.9741	28.6699	96489.00	297.1313	42.3355	663866.00	63.7712	421.2576	0.0120	5.0551
CADMIUM COMPOUNDS	0. 7404	23St7I.m	3.1074	0.0000	96489.00	0.0000	0.2740	bbm6b.m	0.4127	1.0144	0.0120	0.0122
CHROME (+3)	110.3185	238271.00	462.9959	189.8598	96489.00	1967.6834	12291.1739	663866.00	18514.5404	12591.3522		0.0000
CHROME (+6)	30180.2471	238271.00	126663.5348	64.3166	96489.00	666.5692	144.8928	663866.00	218.2561	30389.4565	0.1460	4436.8606
TOTAL CHROME	10.7871	238271.00	45.2724	6.1308	9b4m.m	63.5388	15.8556	663866.00	21.8957	52.7755		0.0000
CHROME COMPOUNDS	127.5865	tmt71.m	535.4680	0.1530	96489.00	1.5857	1.9722	663866.00	8.9961	135.7117		0.0000
LEAD	671.2708	238271.00	2817.2577	133.0767	96489.00	1379.1904	2548.0970	663866.00	3839.4751	3353.2445	0.0000	0.0268
LEAD COMPOUNDS	0.1100	238271.00	0.4617	0.0000	9bbm.m	0.0000	41.6558	663866.00	62.7461	41.7650		0.0000
MERCURY	7.8544	238271.00	32.9641	1.0113	96489.00	11.2987	65.2570	663866.00	98.2985	76.1227		0.0000-
NICKEL	343.1507	tmt7I.m	1440.1698	324.4527	96bm.m	3362.5874	1 lbtb. 7825	663866.00	17513.7490	12294.3859		0.0000
NICKEL COMPOUNDS	11.8971	238271.00	49.9310	0.2780	96489.00	2.8812	0.1907	663866.00	0.2873	12.3658		0.0000
SELENIUM	161.6567	238271.00	678.4573	0.6293	96489.00	b.5229	24.1802	663866.00	36.4233	186.4662	0.0001	0.0261
THALLIUM	2.0670	tlS271.m	8.6750	3.9096	96489.00	40.5186	10.8044	663866.00	16.2750	16.7810		0.0000
										0.0000		0.0000
SULFIDE	Mb.6112	238271.00	1530.2374	47.2564	96489.00	489.7595	47.8387	663866.00	72.0608	459.7063		0.0000
										0.0000		0.0000
ASBESTOS	21.1157	238271.00	97.9376	216.5924	96489.00	2244.7367	28838.2751	663866.00	43439.9037	29078.2032		0.0000
CRYSTALLINE SILICA	0.0021	238271.00	0.0088	0.0000	964SP.99	0.9999	211.1464	663866.00	318.0558	211.1485	0.0003	0.0655
ACETALDEHYDE	0.0040	238271.00	0.0168	0.0000	96489.00	0.9990	0.0000	bblw.m	0.0000	0.9960	0.0000	0.0000
ACRYLAMIDE	0.8400	238271.00	3.5254	0.0000	96489.00	0.9909	1.1235	663866.00	1.6924	1.9635	0.0013	0.0026
ACRYLONITRILE	0.0691	238271.00	0.2900	0.0000	9bbm.m	0.0000	0.0000	663866.00	0.0000	0.0691	0.0001	0.0000
BENZENE	68. 7226	238271.00	288.4220	96.6803	96489.00	1001.9826	100.3731	663866.00	151.1948	265.7760	0.0001	0.0111
BENZIDINE	0.0000	238271.00	0.0000	0.0000	96489.00	0.0000	0.0173	66mbb.m	0.0261	0.0173	0.0670	0.0012
CARBON BLACK	11.0767	238271.00	46.4878	0.2186	96489.00	2.2655	149.3530	663866.00	224.9746	160.6483	0.0000	0.0027
CARBON TETRACHLORIDE	28.7653	238271.00	120.7251	0.0000	9b419.m	0.0000	0.0905	663866.00	0. 1363	28.8558	0.0002	0.0043
CHLOROFORM	91.0488	238271.00	382.1229	19.8406	96489.00	205.6255	19.2806	663866.00	29.0429	130.1700	0.0000	0.0030
CHLOROPHENOL	0.1607	238271.00	0.6744	0.0000	96489.00	0.0000	0.0045	663866.00	0.0068	0.1652	0.0000	0.0000
CREOSOTE	3.2713	238271.00	13.7293	1.3860	96489.00	14.3643	62.0187	663866.00	93.4205	66.6760	0.0017	0.1133
DBCP	0.4000	238271.00	1.6788	0.0000	96489.00	0.0000	0.9999	663866.00	0.0909	0.4000	0.0004	0.0002
DIBENZOFURAN	0.0000	238271.00	0.0000	0.0000	9b4w.m	0.0000	0.1221	663866.00	0.1842	0.1221	30.8000	3.7668
DIOCTYLPHTHALATE	9.4101	238271.00	39.4962	0.0000	96489.00	0.0000	2.2065	9bmbb.m	5.5257	11.6173		0.0000
1,4-DIOXANE	2.0437	238271.00	8.5772	0.0000	96489.00	0.0000	0.0099	663866.00	0.0149	2.0536	0.0000	0.0000
EPICHLORHYDRIN	0.0900	238271.00	0.0000	0.9909	96489.00	0.0000	0.1562	bbm6b.m	0.2353	0.1562	0.0000	0.0000
ETHYLENE DIBROMIDE	0.0157	238271.00	a.0659	• .0000	96489.00	0.0000	2.1818	bb59bb.w	3.2865	2.1975	0.0001	0.0002
ETHYLENE DICHLORIDE	• .0m0	238271.00	0.0000	0.0000	96489.00	0.0000	0.0000	663866.00	0.0000	0.0000	0.0999	0.0000
ETHYLENE OXIDE	0.0000	238271.00	0.0000	0.0000	96489.00	0.0000	0.9955	663866.00	0.1439	0.9955	0.9901	0.0000
FORMALDEHYDE	16.3786	238271.00	68.7394	3.5569	96489.00	36.8633	0.9570	663866.00	13.4922	29.992s	0.0000	0.0004
FREON	2064.4772	238271.00	8664.4082	103.8001	96489.00	1075.7713	169.8996	bb5tbb.m	255.9245	2338.1769		0.0000
HYDRAZINE	47.7844	238271.00	200.5464	0.0001	96489.00	0.0010	0.7180	bb5w.m	I.0724	48.4964	0.0049	0.2376
HYDRAZINE COMPOUNDS	0.8788	238271.00	3.6882	0.0000	96489.00	0.0000	0.8528	bb5tbb.m	1.2846	1.7316		0.0000
ISOCYANATES	0.0000	238271.00	0.0000	0.0000	96489.00	0.0000	0.9999	bb39M.m	0.0000	0.0000	0.0000	0.0000
METHYLENE CHLORIDE	691.4490	238271.00	2901.9436	123.1928	96489.00	1276.7549	91.5671	663866.00	137.9301	906.2089	0.0000	0.0009
MOCA	0.0336	238271.00	0.1410	0.0000	96489.00	0.0000	1.0332	bbm6b.w	I.5563	1.0668	0.0001	0.0001
2-NITROPROPANE	0 WI5	238271.00	0.0147	0.0000	96489.00	0.0000	0.0000	663866.00	0.0000	0 0035	0.0270	0.0001
NITROUS OXIDE	0.0990	238271.00	0.0000	0.0000	96489.00	0.0000	0.1717	663866 00	1.3161	9 8737		0.0000
OIL & GREASE	136356.8788	238271.00	572276.4365	8264.0976	9bU9.99	85648.0801	40985.1523	663866.00	61737.0859	185606.1287		0.0000
PAH'S	0.0990	238271.00	0.0000	0.0000	96489.00	09990	0 3364	663866.00	. 0.5067	0.3364	0.0017	0.0006
PCBs	677.4196	238271.00	2843.0636	25.0027	96489.00	259. 1249	643.0758	bb5w.m	968.6831	1345.4981	0.0922	2.9601
PARADICHLOROBENZENE	0.9093	238271.00	3.8162	0.0210	96489.00	0.2384	0.1272	663866.00	0.1916	I.9595		0.0000
PERCHLOROETHANE	541.4903	238271.00	2272.5816	119.7059	96489.00	1240.6171	67.7828	663866.00	102.1031	728.9790		0.0000
PERCHLOROETHYLENE	Mb.9972	238271.00	700.4931	13.9633	96489.00	144.7139	134.6453	663866.00	202. 8200	315.5158	0.0000	0.0002
STYRENE	525.4741	238271.00	2205.3632	a.2925	96489.00	271.5595	82.5996	663866.00	126.4221	634.2762	0.0000	0.0004
111-TRICHLOROETHANE	'2875.2796	238271.00	12067.2663	572.769~	96489.00	5936.1109	331.4948	mlSt.b.m	499.3399	3779.5438		0.0000
TRICHLOROETHYLENE	58.4621	t1271.m	245.3597	35.6443	96489.00	369.4131	29.6775	663866.00	44.7041	123.7839	0.0000	0.0002
THIOUREA	0.9972	25S271.W	4.1852	0.0000	96489.00	0.9990	0 .6505	663866.00	0.9799	1.6477	0.0006	0.0009
URETHANE	0.9990	21S271.W	0.0000	0.0000	96489.00	0.9909	4.1700	bb59bb.m	6.2814	4.1700	0.0003	0.0012
OTHER MIXED ORGANICS	14934.1772	238271.00	62677.2759	9588.2739	96489.00	99171.6786	6739.9024	663866.00	10152.5941	31262.3535		0.0000