

Part A Document

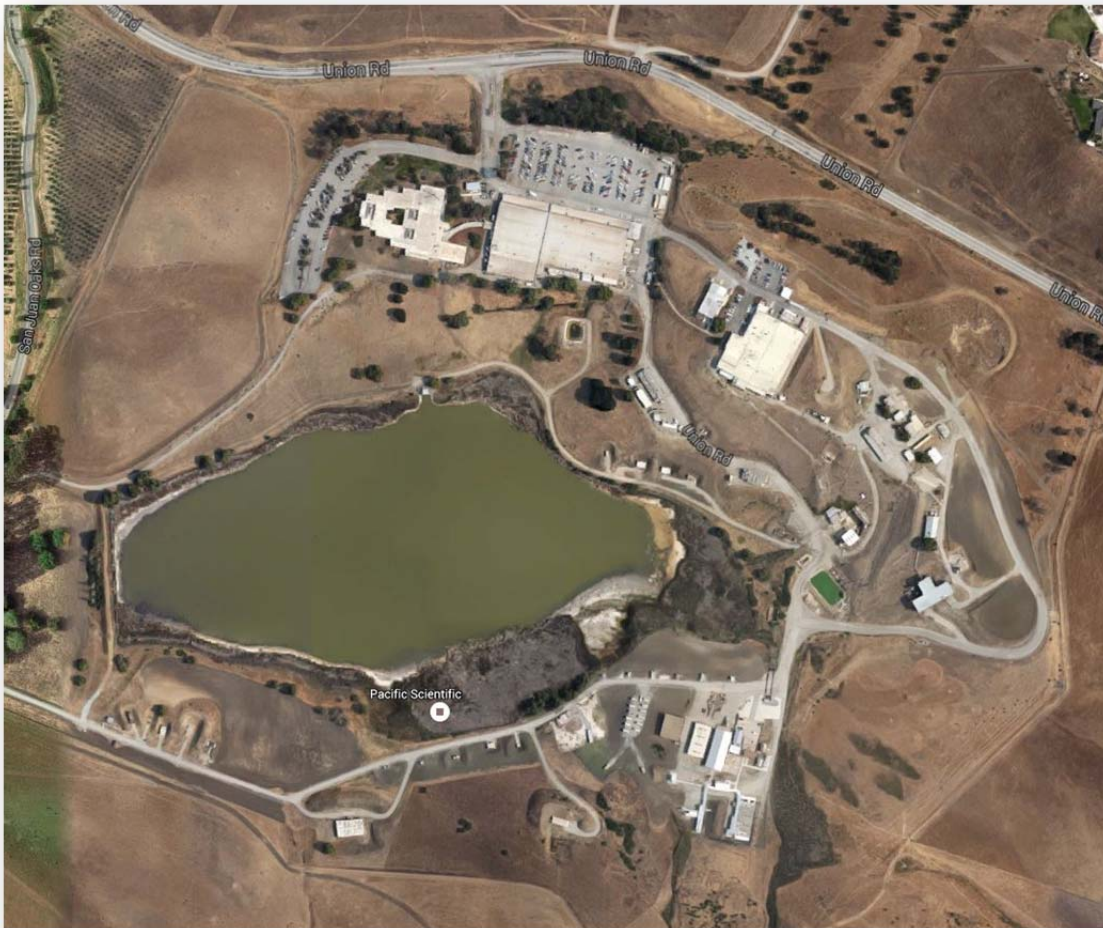
(With Maps, Figures and Photographs)

RCRA Hazardous Waste Facility Permit (Renewal Application)

Pacific Scientific Energetic Materials

3601 Union Road, Hollister

March 2015



Prepared for:

Pacific Scientific Energetic Materials Company, Inc
3601 Union Rd
Hollister, California 95023

For Submittal To:


California Department of Toxic Substances Control
Permitting Division
8800 Cal Center Drive
Sacramento, California 95826

Part A Document Attachments

- *RCRA Subtitle C Site Identification Form*
- *Part A Table: Summary of Waste Explosives at TSU-1*
- *EPA Hazardous Waste Codes*
- *Part A Figures: Site Maps and Photographs*

Part A Document Attachment

RCRA Subtitle C Site Identification Form

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.	United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM		
1. Reason for Submittal MARK ALL BOX(ES) THAT APPLY	Reason for Submittal: <input type="checkbox"/> To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location) <input type="checkbox"/> To provide a Subsequent Notification (to update site identification information for this location) <input type="checkbox"/> As a component of a First RCRA Hazardous Waste Part A Permit Application <input checked="" type="checkbox"/> As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment # _____) <input type="checkbox"/> As a component of the Hazardous Waste Report (If marked, see sub-bullet below) <input type="checkbox"/> Site was a TSD facility and/or generator of >1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)		
2. Site EPA ID Number	EPA ID Number C A D 0 0 9 2 2 0 8 9 8		
3. Site Name	Name: Pacific Scientific Energetic Materials Company (California) Inc.		
4. Site Location Information	Street Address: 3601 Union Road		
	City, Town, or Village: Hollister		County: San Benito
	State: California	Country: United States	Zip Code: 95023
5. Site Land Type	<input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other		
6. NAICS Code(s) for the Site (at least 5-digit codes)	A. 3 2 5 9 2 0		C. 3 2 5 1 9 9
	B. 3 3 2 9 9 5		D.
7. Site Mailing Address	Street or P.O. Box: Same as item 4		
	City, Town, or Village:		
	State:	Country:	Zip Code:
8. Site Contact Person	First Name: Charles		MI: F Last: Martin
	Title:		
	Street or P.O. Box: Same as item 4		
	City, Town or Village:		
	State:	Country:	Zip Code:
	Email: cmartin@psemc.com		
	Phone: 831-637-3731	Ext.: 389	Fax:
9. Legal Owner and Operator of the Site	A. Name of Site's Legal Owner: Pacific Scientific Energetic Materials Company (California), Inc.		Date Became Owner: 07/07/2003
	Owner Type: <input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other		
	Street or P.O. Box: Same as Item 4		
	City, Town, or Village:		Phone:
	State:	Country:	Zip Code:
	B. Name of Site's Operator: Pacific Scientific Energetic Materials Company (California), Inc.		Date Became Operator: 07/07/2003
	Operator Type: <input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other		

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-10.Y ☒ N ☐**1. Generator of Hazardous Waste**

If "Yes," mark only one of the following – a, b, or c.

- ☒ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs/mo.) or more of hazardous waste; or Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs/mo) of acute hazardous waste; or Generates, in any calendar month, or accumulates at any time, more than 100 kg/mo (220 lbs/mo) of acute hazardous spill cleanup material.

- ☐ b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs/mo) of non-acute hazardous waste.

- ☐ c. CESQG: Less than 100 kg/mo (220 lbs/mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities in 2-10.

Y ☐ N ☒

- 2. Short-Term Generator** (generate from a short-term or one-time event and not from on-going processes). If "Yes," provide an explanation in the Comments section.

Y ☐ N ☒

- 3. United States Importer of Hazardous Waste**

Y ☐ N ☒

- 4. Mixed Waste (hazardous and radioactive) Generator**

Y ☐ N ☒**5. Transporter of Hazardous Waste**

If "Yes," mark all that apply.

- ☐ a. Transporter
☐ b. Transfer Facility (at your site)

Y ☒ N ☐**6. Treater, Storer, or Disposer of Hazardous Waste**

Note: A hazardous waste Part B permit is required for these activities.

Y ☐ N ☒**7. Recycler of Hazardous Waste**Y ☐ N ☒**8. Exempt Boiler and/or Industrial Furnace**

If "Yes," mark all that apply.

- ☐ a. Small Quantity On-site Burner Exemption
☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☒**9. Underground Injection Control**Y ☐ N ☒**10. Receives Hazardous Waste from Off-site****B. Universal Waste Activities; Complete all parts 1-2.**Y ☐ N ☒

- 1. Large Quantity Handler of Universal Waste** (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes," mark all that apply.

- a. Batteries ☐
b. Pesticides ☐
c. Mercury containing equipment ☐
d. Lamps ☐
e. Other (specify) _____ ☐
f. Other (specify) _____ ☐
g. Other (specify) _____ ☐

Y ☐ N ☒

- 2. Destination Facility for Universal Waste**

Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.Y ☐ N ☒**1. Used Oil Transporter**

If "Yes," mark all that apply.

- ☐ a. Transporter
☐ b. Transfer Facility (at your site)

Y ☐ N ☒**2. Used Oil Processor and/or Re-refiner**

If "Yes," mark all that apply.

- ☐ a. Processor
☐ b. Re-refiner

Y ☐ N ☒**3. Off-Specification Used Oil Burner**Y ☐ N ☒**4. Used Oil Fuel Marketer**

If "Yes," mark all that apply.

- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

❖ You can ONLY Opt into Subpart K if:

- you are at least one of the following: a college or university; a teaching hospital that is owned by or has a formal affiliation agreement with a college or university; or a non-profit research institute that is owned by or has a formal affiliation agreement with a college or university; AND
- you have checked with your State to determine if 40 CFR Part 262 Subpart K is effective in your state

Y ☐ N ☒ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories
See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:☐ a. College or University☐ b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university☐ c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or universityY ☐ N ☒ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories**11. Description of Hazardous Waste****A. Waste Codes for Federally Regulated Hazardous Wastes.** Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	D002	D003	D005	D006	D007	D008
D009	D011	D022	D035	D039	F001	F002
F003	F005	K044	K045	U002	U003	U031
U044	U056	U154	U159	U160	U161	U213
U234						

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

122	132	143	172	181	211	212
213	214	221	331	343	352	461
521	513	722	723	741	791	792

12. Notification of Hazardous Secondary Material (HSM) Activity

Y ☐ N ☐ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes," you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative

Name and Official Title (type or print)

**Date Signed
(mm/dd/yyyy)**

ADDENDUM TO THE SITE IDENTIFICATION FORM: NOTIFICATION OF HAZARDOUS SECONDARY MATERIAL ACTIVITY



ONLY fill out this form if:

- ❖ You are located in a State that allows you to manage excluded hazardous secondary material (HSM) under 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent). See <http://www.epa.gov/epawaste/hazard/dsw/statespf.htm> for a list of eligible states; **AND**
- ❖ You are or will be managing excluded HSM in compliance with 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent) or you have stopped managing excluded HSM in compliance with the exclusion(s) and do not expect to manage any amount of excluded HSM under the exclusion(s) for at least one year. Do not include any information regarding your hazardous waste activities in this section.

1. Indicate reason for notification. Include dates where requested.

- ☐ Facility will begin managing excluded HSM as of _____ (mm/dd/yyyy).
- ☐ Facility is still managing excluded HSM/re-notifying as required by March 1 of each even-numbered year.
- ☐ Facility has stopped managing excluded HSM as of _____ (mm/dd/yyyy) and is notifying as required.

2. Description of excluded HSM activity. Please list the appropriate codes and quantities in **short tons** to describe your excluded HSM activity ONLY (do not include any information regarding your hazardous wastes). Use additional pages if more space is needed.

a. Facility code (answer using codes listed in the Code List section of the instructions)	b. Waste code(s) for HSM	c. Estimated short tons of excluded HSM to be managed annually	d. Actual short tons of excluded HSM that was managed during the most recent odd-numbered year	e. Land-based unit code (answer using codes listed in the Code List section of the instructions)

3. Facility has financial assurance pursuant to 40 CFR 261.4(a)(24)(vi). (Financial assurance is required for reclaimers and intermediate facilities managing excluded HSM under 40 CFR 261.4(a)(24) and (25))

Y ☐ N ☐ Does this facility have financial assurance pursuant to 40 CFR 261.4(a)(24)(vi)?

Part A Document Attachment

EPA Hazardous Waste Codes

EPA HAZARDOUS WASTE CODES

Code	Waste description	Code	Waste description
D001	Ignitable waste	D023	o-Cresol
D002	Corrosive waste	D024	m-Cresol
D003	Reactive waste	D025	p-Cresol
D004	Arsenic	D026	Cresol
D005	Barium	D027	1,4-Dichlorobenzene
D006	Cadmium	D028	1,2-Dichloroethane
D007	Chromium	D029	1,1-Dichloroethylene
D008	Lead	D030	2,4-Dinitrotoluene
D009	Mercury	D031	Heptachlor (and its epoxide)
D010	Selenium	D032	Hexachlorobenzene
D011	Silver	D033	Hexachlorobutadiene
D012	Endrin(1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5,8-dimeth-ano-naphthalene)	D034	Hexachloroethane
D013	Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	D035	Methyl ethyl ketone
D014	Methoxychlor (1,1,1-trichloro-2,2-bis [p-methoxyphenyl] ethane)	D036	Nitrobenzene
D015	Toxaphene (C ₁₀ H ₁₀ Cl ₈ , Technical chlorinated camphene, 67-69 percent chlorine)	D037	Pentachlorophenol
D016	2,4-D (2,4-Dichlorophenoxyacetic acid)	D038	Pyridine
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	D039	Tetrachloroethylene
D018	Benzene	D040	Trichlorethylene
D019	Carbon tetrachloride	D041	2,4,5-Trichlorophenol
D020	Chlordane	D042	2,4,6-Trichlorophenol
D021	Chlorobenzene	D043	Vinyl chloride
D022	Chloroform		

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
HAZARDOUS WASTE FROM NONSPECIFIC SOURCES			
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 ten 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.		solvents: cresols, cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 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 ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	F005	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten 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.
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, 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 nonhalogenated solvents, and a total of ten 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.	F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F004	The following spent nonhalogenated	F007	Spent cyanide plating bath solutions from electroplating operations.
		F008	Plating bath residues from the bottom of plating baths from electroplating operations in which cyanides are used in the process.
		F009	Spent stripping and cleaning bath solutions from electroplating operations in which cyanides are used in the process.
		F010	Quenching bath residues from oil baths from metal heat treating operations in

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
	chloride in vinyl chloride monomer production.	K035	Wastewater treatment sludges generated in the production of creosote.
K021	Aqueous spent antimony catalyst waste from fluoromethane production.	K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	K037	Wastewater treatment sludges from the production of disulfoton.
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	K038	Wastewater from the washing and stripping of phorate production.
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	K040	Wastewater treatment sludge from the production of phorate.
K026	Stripping still tails from the production of methyl ethyl pyridines.	K041	Wastewater treatment sludge from the production of toxaphene.
K027	Centrifuge and distillation residues from toluene diisocyanate production.	K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	K043	2,6-dichlorophenol waste from the production of 2,4-D.
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	K044	Wastewater treatment sludges from the manufacturing and processing of explosives.
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	K045	Spent carbon from the treatment of wastewater containing explosives.
K031	By-product salts generated in the production of MSMA and cacodylic acid.	K046	Wastewater treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds.
K032	Wastewater treatment sludge from the production of chlordane.	K047	Pink/red water from TNT operations.
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	K048	Dissolved air flotation (DAF) float from the petroleum refining industry.
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	K049	Slop oil emulsion solids from the petroleum refining industry.
		K050	Heat exchanger bundle cleaning sludge

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
P112	Tetranitromethane (R)	DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SPILL RESIDUES THEREOF--TOXIC WASTES <i>(AN ALPHABETIZED LISTING CAN BE FOUND AT 40 CFR 261.33.)</i>	
P113	Thallic oxide		
P113	Thallium oxide Tl_2O_3		
P114	Selenious acid, dithallium (1+) salt		
P114	Thallium(I) selenite		
P115	Sulfuric acid, dithallium (1+) salt		
P115	Thallium(I) sulfate		
P116	Hydrazinecarbothioamide		
P116	Thiosemicarbazide		
P118	Methanethiol, trichloro-		
P118	Trichloromethanethiol	See	{ 2,3,4,6-Tetrachlorophenol
P119	Ammonium vanadate	F027	2,4,5-T
P119	Vanadic acid, ammonium salt		2,4,5-Trichlorophenol
P120	Vanadium oxide V_2O_5		2,4,6-Trichlorophenol
P120	Vanadium pentoxide		Acetic acid, (2,4,5-trichlorophenoxy)-
P121	Zinc cyanide		Pentachlorophenol
P121	Zinc cyanide $Zn(CN)_2$		Phenol, 2,3,4,6-tetrachloro-
P122	Zinc phosphide Zn_3P_2 , when present at concentrations greater than 10% (R,T)		Phenol, 2,4,5-trichloro-
P123	Toxaphene		Phenol, 2,4,6-trichloro-
			Phenol, pentachloro-
			Propanoic acid, 2-(2,4,5-
			trichlorophenoxy)-
			Silvex (2,4,5-TP)
		U001	Acetaldehyde (I)
		U001	Ethanal (I)
		U002	2-Propanone (I)
		U002	Acetone (I)
		U003	Acetonitrile (I,T)
		U004	Acetophenone
		U004	Ethanone, 1-phenyl-

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
U005	2-Acetylaminofluorene	U018	Benz[a]anthracene
U005	Acetamide, N-9H-fluoren-2-yl	U019	Benzene (I,T)
U006	Acetyl chloride (C,R,T)	U020	Benzenesulfonic acid chloride (C,R)
U007	2-Propenamide	U020	Benzenesulfonyl chloride (C,R)
U007	Acrylamide	U021	[1,1'-Biphenyl]-4,4'-diamine
U008	2-Propenoic acid (I)	U021	Benzidine
U008	Acrylic acid (I)	U022	Benzo[a]pyrene
U009	2-Propenenitrile	U023	Benzene, (trichloromethyl)-
U009	Acrylonitrile	U023	Benzotrichloride (C,R,T)
U010	Azirino [2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8- [[[(aminocarbonyl)oxy]methyl]- 1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta, 8aalpha, 8balpha)]-	U024	Dichloromethoxy ethane
U010	Mitomycin C	U024	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U011	1H-1,2,4-Triazol-3-amine	U025	Dichloroethyl ether
U011	Amitrole	U025	Ethane, 1,1'-oxybis[2-chloro-
U012	Aniline (I,T)	U026	Chlornaphazin
U012	Benzenamine (I,T)	U026	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U014	Auramine	U027	Dichloroisopropyl ether
U014	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-	U027	Propane, 2,2'-oxybis[2-chloro-
U015	Azaserine	U028	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U015	L-Serine, diazoacetate (ester)	U028	Diethylhexyl phthalate
U016	Benz[c]acridine	U029	Methane, bromo-
U017	Benzal chloride	U029	Methyl bromide
U017	Benzene, (dichloromethyl)-	U030	4-Bromophenyl phenyl ether
		U030	Benzene, 1-bromo-4-phenoxy-
		U031	1-Butanol (I)

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
U031	n-Butyl alcohol (I)	U044	Chloroform
U032	Calcium chromate	U044	Methane, trichloro-
U032	Chromic acid H ₂ CrO ₄ , calcium salt	U045	Methane, chloro- (I,T)
U033	Carbon oxyfluoride (R,T)	U045	Methyl chloride (I,T)
U033	Carbonic difluoride	U046	Chloromethyl methyl ether
U034	Acetaldehyde, trichloro-	U046	Methane, chloromethoxy-
U034	Chloral	U047	beta-Chloronaphthalene
U035	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	U047	Naphthalene, 2-chloro-
U035	Chlorambucil	U048	o-Chlorophenol
U036	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	U048	Phenol, 2-chloro-
U036	Chlordane, alpha & gamma isomers	U049	4-Chloro-o-toluidine, hydrochloride
U037	Benzene, chloro-	U049	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U037	Chlorobenzene	U050	Chrysene
U038	Benzenecetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	U051	Creosote
U038	Chlorobenzilate	U052	Cresol (Cresylic acid)
U039	p-Chloro-m-cresol	U052	Phenol, methyl-
U039	Phenol, 4-chloro-3-methyl-	U053	2-Butenal
U041	Epichlorohydrin	U053	Crotonaldehyde
U041	Oxirane, (chloromethyl)-	U055	Benzene, (1-methylethyl)- (I)
U042	2-Chloroethyl vinyl ether	U055	Cumene (I)
U042	Ethene, (2-chloroethoxy)-	U056	Benzene, hexahydro- (I)
U043	Ethene, chloro-	U056	Cyclohexane (I)
U043	Vinyl chloride	U057	Cyclohexanone (I)
		U058	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
U134	Hydrofluoric acid (C,T)	U146	Lead, bis(acetato-O)tetrahydroxytri-
U134	Hydrogen fluoride (C,T)	U147	2,5-Furandione
U135	Hydrogen sulfide	U147	Maleic anhydride
U135	Hydrogen sulfide H ₂ S	U148	3,6-Pyridazinedione, 1,2-dihydro-
U136	Arsinic acid, dimethyl-	U148	Maleic hydrazide
U136	Cacodylic acid	U149	Malononitrile
U137	Indeno[1,2,3-cd]pyrene	U149	Propanedinitrile
U138	Methane, iodo-	U150	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U138	Methyl iodide	U150	Melphalan
U140	1-Propanol, 2-methyl- (I,T)	U151	Mercury
U140	Isobutyl alcohol (I,T)	U152	2-Propenenitrile, 2-methyl- (I,T)
U141	1,3-Benzodioxole, 5-(1-propenyl)-	U152	Methacrylonitrile (I,T)
U141	Isosafrole	U153	Methanethiol (I,T)
U142	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-	U153	Thiomethanol (I,T)
U142	Kepone	U154	Methanol (I)
U143	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*,3R*), 7aalpha]]-	U154	Methyl alcohol (I)
U143	Lasiocarpine	U155	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U144	Acetic acid, lead(2+) salt	U155	Methapyrilene
U144	Lead acetate	U156	Carbonochloridic acid, methyl ester, (I,T)
U145	Lead phosphate	U156	Methyl chlorocarbonate (I,T)
U145	Phosphoric acid, lead(2+) salt (2:3)	U157	3-Methylcholanthrene
U146	Lead subacetate	U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
		U158	4,4'-Methylenebis(2-chloroaniline)

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
U158	Benzenamine, 4,4'-methylenebis[2-chloro-	U170	Phenol, 4-nitro-
U159	2-Butanone (I,T)	U171	2-Nitropropane (I,T)
U159	Methyl ethyl ketone (MEK) (I,T)	U171	Propane, 2-nitro- (I,T)
U160	2-Butanone, peroxide (R,T)	U172	1-Butanamine, N-butyl-N-nitroso-
U160	Methyl ethyl ketone peroxide (R,T)	U172	N-Nitrosodi-n-butylamine
U161	4-Methyl-2-pentanone (I)	U173	Ethanol, 2,2'-(nitrosoimino)bis-
U161	Methyl isobutyl ketone (I)	U173	N-Nitrosodiethanolamine
U161	Pentanol, 4-methyl-	U174	Ethanamine, N-ethyl-N-nitroso-
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)	U174	N-Nitrosodiethylamine
U162	Methyl methacrylate (I,T)	U176	N-Nitroso-N-ethylurea
U163	Guanidine, N-methyl-N'-nitro-N-nitroso-	U176	Urea, N-ethyl-N-nitroso-
U163	MNNG	U177	N-Nitroso-N-methylurea
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	U177	Urea, N-methyl-N-nitroso-
U164	Methylthiouracil	U178	Carbamic acid, methylnitroso-, ethyl ester
U165	Naphthalene	U178	N-Nitroso-N-methylurethane
U166	1,4-Naphthalenedione	U179	N-Nitrosopiperidine
U166	1,4-Naphthoquinone	U179	Piperidine, 1-nitroso-
U167	1-Napthalenamine	U180	N-Nitrosopyrrolidine
U167	alpha-Naphthylamine	U180	Pyrrolidine, 1-nitroso-
U168	2-Napthalenamine	U181	5-Nitro-o-toluidine
U168	beta-Naphthylamine	U181	Benzenamine, 2-methyl-5-nitro
U169	Benzene, nitro-	U182	1,3,5-Trioxane, 2,4,6-trimethyl-
U169	Nitrobenzene (I,T)	U182	Paraldehyde
U170	p-Nitrophenol (I,T)	U183	Benzene, pentachloro-
		U183	Pentachlorobenzene

EPA HAZARDOUS WASTE CODES

(Continued)

Code	Waste description	Code	Waste description
U210	Tetrachloroethylene	U225	Methane, tribromo-
U211	Carbon tetrachloride	U226	Ethane, 1,1,1-trichloro-
U211	Methane, tetrachloro-	U226	Methyl chloroform
U213	Furan, tetrahydro-(I)	U227	1,1,2-Trichloroethane
U213	Tetrahydrofuran (I)	U227	Ethane, 1,1,2-trichloro-
U214	Acetic acid, thallium(1+) salt	U228	Ethene, trichloro-
U214	Thallium(I) acetate	U228	Trichloroethylene
U215	Carbonic acid, dithallium(1+) salt	U234	1,3,5-Trinitrobenzene (R,T)
U215	Thallium(I) carbonate	U234	Benzene, 1,3,5-trinitro-
U216	Thallium chloride TlCl	U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U216	Thallium(I) chloride	U235	Tris(2,3,-dibromopropyl) phosphate
U217	Nitric acid, thallium(1+) salt	U236	2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U217	Thallium(I) nitrate	U236	Trypan blue
U218	Ethanethioamide	U237	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U218	Thioacetamide	U237	Uracil mustard
U219	Thiourea	U238	Carbamic acid, ethyl ester
U220	Benzene, methyl-	U238	Ethyl carbamate (urethane)
U220	Toluene	U239	Benzene, dimethyl- (I,T)
U221	Benzenediamine, ar-methyl-	U239	Xylene (I)
U221	Toluenediamine	U240	2,4-D, salts & esters
U222	Benzenamine, 2-methyl-, hydrochloride	U240	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U222	o-Toluidine hydrochloride	U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)	U243	Hexachloropropene
U223	Toluene diisocyanate (R,T)		
U225	Bromoform		

CALIFORNIA WASTE CODES

California Restricted Wastes – Use First , if applicable	
711	Liquids with cyanides ≥ 1000 mg/l
721	Liquids with arsenic ≥ 500 mg/l
722	Liquids with cadmium ≥ 100 mg/l
723	Liquids with chromium (VI) ≥ 500 mg/l
724	Liquids with lead ≥ 500 mg/l
725	Liquids with mercury ≥ 20 mg/l
726	Liquids with nickel ≥ 134 mg/l
727	Liquids with selenium ≥ 100 mg/l
728	Liquids with thallium ≥ 130 mg/l
731	Liquids with polychlorinated biphenyls ≥ 50 mg/l
741	Liquids with halogenated organic compounds ≥ 1000 mg/l
751	Solids or sludges with halogenated organic comp. 1000 mg/kg
791	Liquids with pH ≤ 2
792	Liquids with pH ≤ 2 with metals
801	Waste potentially containing dioxins

CALIFORNIA NON-RESTRICTED WASTES

Inorganics

121	Alkaline solution (pH ≥ 12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)
122	Alkaline solution without metals (pH ≥ 12.5)
123	Unspecified alkaline solution
131	Aqueous solution ($2 < \text{pH} < 12.5$) containing reactive anions (azide, bromate, chlorate, cyanide, fluoride, hypochlorite, nitrite, perchlorate, and sulfide anions)
132	Aqueous solution w/metals ($<$ restricted levels and see waste code 121 for a list of metals)
133	Aqueous solution with 10% or more total organic residues
134	Aqueous solution with $<10\%$ total organic residues
135	Unspecified aqueous solution
141	Off-specification, aged, or surplus inorganics
151	Asbestos-containing waste
161	Fluid-cracking catalyst (FCC) waste
162	Other spent catalyst
171	Metal sludge (see 121)
172	Metal dust (see 121) and machining waste
181	Other inorganic solid waste

Organics

211	Halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
212	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
213	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
214	Unspecified solvent mixture
221	Waste oil and mixed oil
222	Oil/water separation sludge
223	Unspecified oil-containing waste
231	Pesticide rinse water
232	Pesticides and other waste associated with pesticide production
241	Tank bottom waste
251	Still bottoms with halogenated organics
252	Other still bottom waste
261	Polychlorinated biphenyls and material containing PCB's
271	Organic monomer waste (includes unreacted resins)
272	Polymeric resin waste
281	Adhesives
291	Latex waste
311	Pharmaceutical waste
321	Sewage sludge
322	Biological waste other than sewage sludge
331	Off-specification, aged, or surplus organics
341	Organic liquids (nonsolvents) with halogens
342	Organic liquids with metals (see 121)
343	Unspecified organic liquid mixture
351	Organic solids with halogens
352	Other organic solids

Sludges

411	Alum and gypsum sludge
421	Lime sludge
431	Phosphate sludge
441	Sulfur sludge
451	Degreasing sludge
461	Paint sludge
471	Paper sludge/pulp
481	Tetraethyl lead sludge
491	Unspecified sludge waste

Miscellaneous

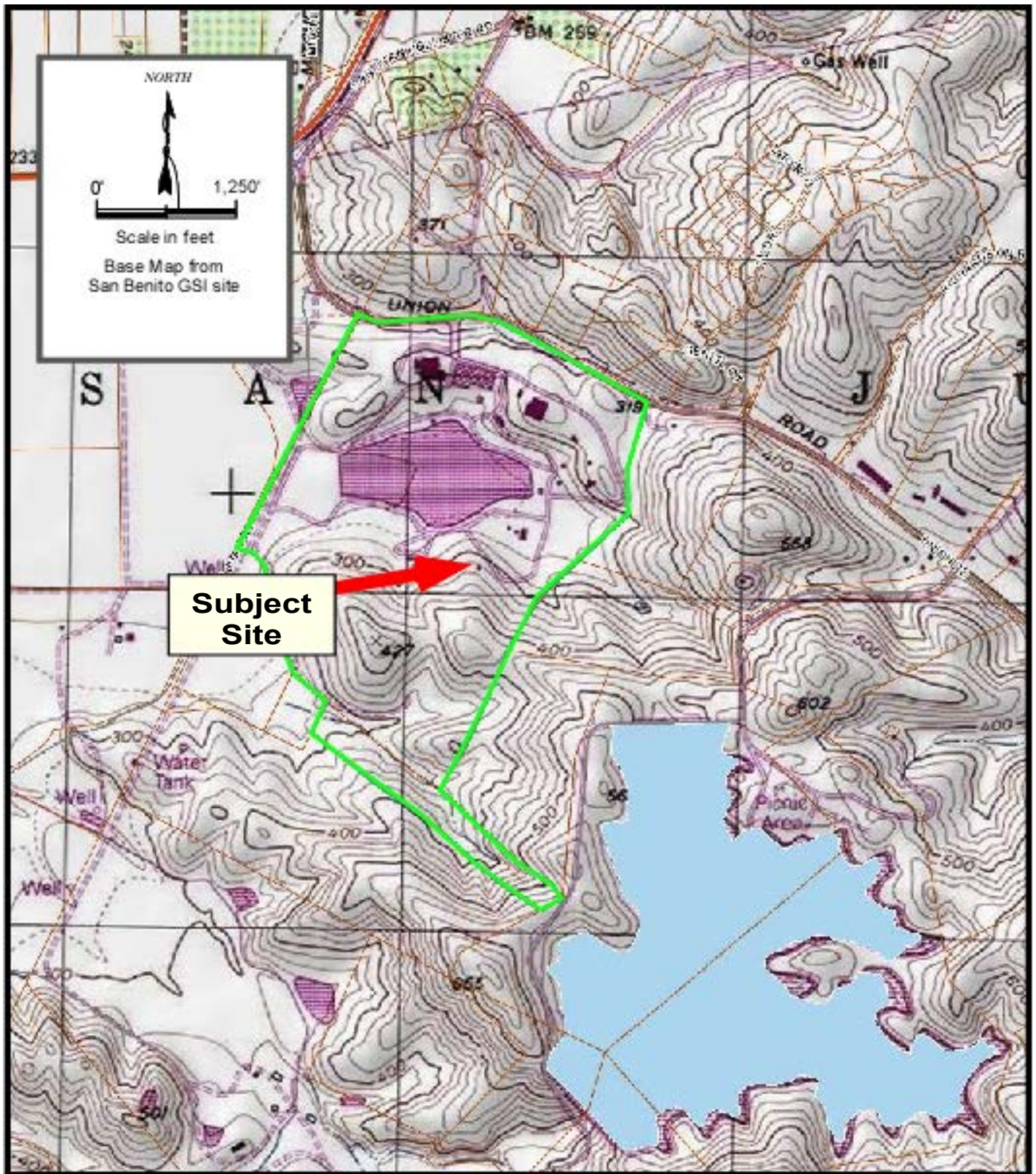
511	Empty pesticide containers 30 gallons or more
512	Other empty containers 30 gallons or more
513	Empty containers less than 30 gallons
521	Drilling mud
531	Chemical toilet waste
541	Photochemicals / photoprocessing waste
551	Laboratory waste chemicals
561	Detergent and soap
571	Fly ash, bottom ash, and retort ash
581	Gas scrubber waste
591	Baghouse waste
611	Contaminated soil from site clean-ups
612	Household waste
613	Auto shredder waste

HW REPORT MANAGEMENT METHOD CODES

New Codes	Descriptions
H010	Metals recovery including retorting, smelting, chemicals, etc.
H020	Solvents recovery
H039	Other recovery of reclamation for reuse including acid regeneration, organics recovery, etc.
H050	Energy recovery at this site -- use as fuel (includes on-site fuel blending)
H061	Fuel blending prior to energy recovery at another site
H040	Incineration--thermal destruction other than use as a fuel
H071	Chemical reduction with or without precipitation
H073	Cyanide destruction with or without precipitation
H075	Chemical oxidation
H076	Wet air oxidation
H077	Other chemical precipitation with or without pre-treatment
H081	Biological treatment with or without precipitation
H082	Adsorption
H083	Air or steam stripping
H101	Sludge treatment and/or dewatering
H103	Absorption
H111	Stabilization or chemical fixation prior to disposal at another site
H112	Macro-encapsulation prior to disposal at another site
H121	Neutralization only
H122	Evaporation
H123	Settling or clarification
H124	Phase separation
H129	Other treatment
H131	Land treatment or application (to include on-site treatment and/or stabilization)
H132	Landfill or surface impoundment that will be closed as landfill (to include on-site treatment and/or stabilization)
H134	Deepwell or underground injection (with or without treatment)
H135	Discharge to sewer/POTW or NPDES (with prior storage--with or without treatment)
H141	Storage, bulking, and/or transfer off site--no treatment/recovery (H010-H129), fuel blending (H061), or disposal (H131-H135) at this site

Part A Document Figures

- *Figure II-1: Site Location Map (Topographic)*
- *Figure II-2: USGS Topographic Quadrangle Map*
- *Figure II-3: Site Utilities and Easements*
- *Figure II-4: Site Aerial*
- *Figure II-5: Assessor's Parcel map*
- *Figure II-6: Earthquake Fault & Flood Plain Map*
- *Figure II-7: Zoning Map*
- *Figure II-8: Shallow Geology and Groundwater*
- *Figure IV-1: TSU-3 Building Layout*
- *Figure IV-2: TSU-3 Surrounding Area Layout*
- *Figure IV-3: TSU-3 Front View / Elevations*
- *Figure IV-4: Photograph of TSU-3*
- *Figure IV-5: TSU-1 Building Details*
- *Figure IV-6: Photograph of TSU-1*
- *Figure IV-7: Photograph of TSU-1*
- *Figure IV-8: TSU-2 Building Details*
- *Figure IV-9: Photograph of TSU-2*
- *Figure IV-10: Photograph of TSU-2*
- *Figure IV-11: TSU-8 Surrounding Area*
- *Figure IV-12: TSU-8 Building Details*
- *Figure IV-13: TSU-8 Building Details (Side View)*
- *Figure IV-14: Photograph of TSU-8*
- *Figure IV-15: Photograph of TSU-8*



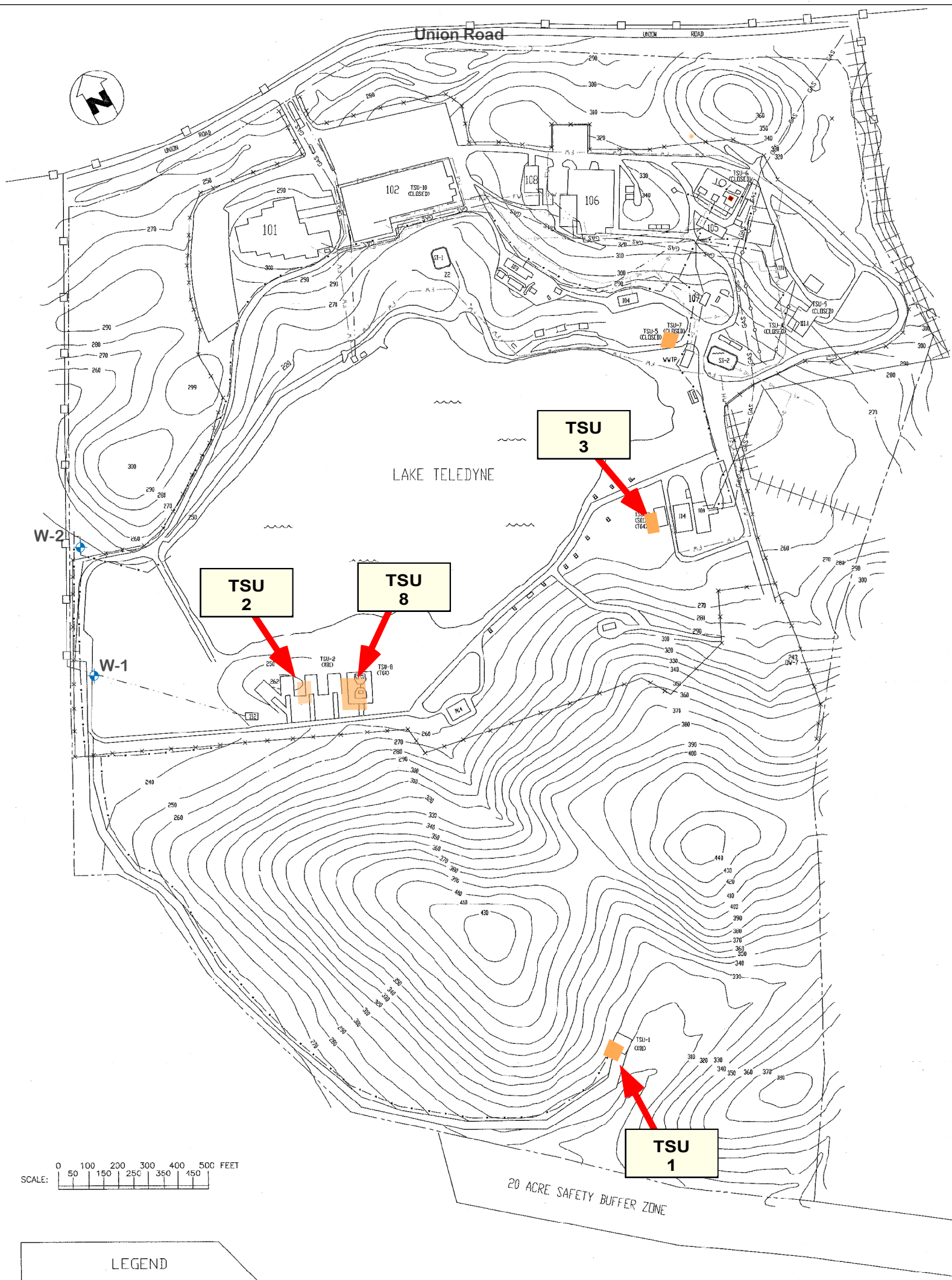
I2x502.Pac-Sci-RCRA Permit\Figures\1-Location.cvx



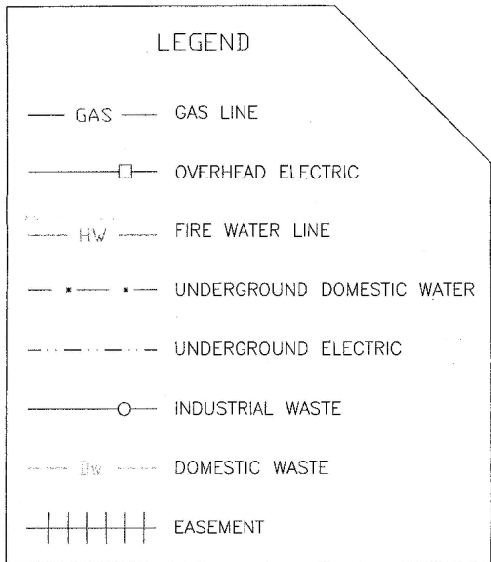
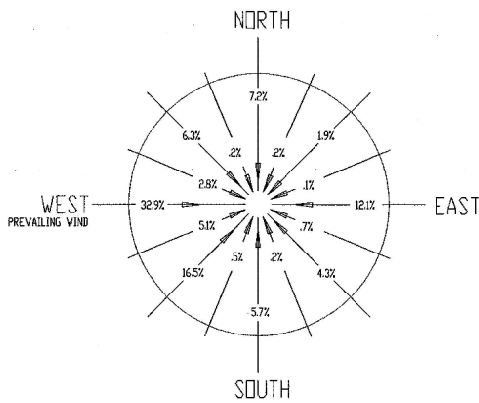
Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

Location Map
Pacific Scientific Energetic Materials Company
3601 Union Road
Hollister California

FIGURE
II-1
Project
2X502



Prevailing Wind Direction



QTY	PART NO.	DESCRIPTION	SPECIFICATION	CAGE	DATE
01	01	PARTS LIST			
02	02	UNLESS OTHERWISE SPECIFIED			
03	03	DIMENSIONS ARE IN INCHES			
04	04	UNLESS OTHERWISE SPECIFIED			
05	05	CONCRETE SHALL BE 3000 PSI			
06	06	STEEL SHALL BE A36			
07	07	PIPE SHALL BE SCH 40			
08	08	VALVES SHALL BE 1/2" NPT			
09	09	TO AVOID WITHOUT WRITTEN			
10	10	PERMISSION OF THE CITY			
11	11	DO NOT SCALE THIS DRAWING			
12	12	CUSTOMER APPROVAL REQUIRED			
13	13	UNLESS OTHERWISE SPECIFIED			
14	14	DIMENSIONS ARE IN INCHES			
15	15	UNLESS OTHERWISE SPECIFIED			
16	16	CONCRETE SHALL BE 3000 PSI			
17	17	STEEL SHALL BE A36			
18	18	PIPE SHALL BE SCH 40			
19	19	VALVES SHALL BE 1/2" NPT			
20	20	TO AVOID WITHOUT WRITTEN			
21	21	PERMISSION OF THE CITY			
22	22	DO NOT SCALE THIS DRAWING			
23	23	CUSTOMER APPROVAL REQUIRED			
24	24	UNLESS OTHERWISE SPECIFIED			
25	25	DIMENSIONS ARE IN INCHES			
26	26	UNLESS OTHERWISE SPECIFIED			
27	27	CONCRETE SHALL BE 3000 PSI			
28	28	STEEL SHALL BE A36			
29	29	PIPE SHALL BE SCH 40			
30	30	VALVES SHALL BE 1/2" NPT			
31	31	TO AVOID WITHOUT WRITTEN			
32	32	PERMISSION OF THE CITY			
33	33	DO NOT SCALE THIS DRAWING			
34	34	CUSTOMER APPROVAL REQUIRED			
35	35	UNLESS OTHERWISE SPECIFIED			
36	36	DIMENSIONS ARE IN INCHES			
37	37	UNLESS OTHERWISE SPECIFIED			
38	38	CONCRETE SHALL BE 3000 PSI			
39	39	STEEL SHALL BE A36			
40	40	PIPE SHALL BE SCH 40			
41	41	VALVES SHALL BE 1/2" NPT			
42	42	TO AVOID WITHOUT WRITTEN			
43	43	PERMISSION OF THE CITY			
44	44	DO NOT SCALE THIS DRAWING			
45	45	CUSTOMER APPROVAL REQUIRED			
46	46	UNLESS OTHERWISE SPECIFIED			
47	47	DIMENSIONS ARE IN INCHES			
48	48	UNLESS OTHERWISE SPECIFIED			
49	49	CONCRETE SHALL BE 3000 PSI			
50	50	STEEL SHALL BE A36			
51	51	PIPE SHALL BE SCH 40			
52	52	VALVES SHALL BE 1/2" NPT			
53	53	TO AVOID WITHOUT WRITTEN			
54	54	PERMISSION OF THE CITY			
55	55	DO NOT SCALE THIS DRAWING			
56	56	CUSTOMER APPROVAL REQUIRED			
57	57	UNLESS OTHERWISE SPECIFIED			
58	58	DIMENSIONS ARE IN INCHES			
59	59	UNLESS OTHERWISE SPECIFIED			
60	60	CONCRETE SHALL BE 3000 PSI			
61	61	STEEL SHALL BE A36			
62	62	PIPE SHALL BE SCH 40			
63	63	VALVES SHALL BE 1/2" NPT			
64	64	TO AVOID WITHOUT WRITTEN			
65	65	PERMISSION OF THE CITY			
66	66	DO NOT SCALE THIS DRAWING			
67	67	CUSTOMER APPROVAL REQUIRED			
68	68	UNLESS OTHERWISE SPECIFIED			
69	69	DIMENSIONS ARE IN INCHES			
70	70	UNLESS OTHERWISE SPECIFIED			
71	71	CONCRETE SHALL BE 3000 PSI			
72	72	STEEL SHALL BE A36			
73	73	PIPE SHALL BE SCH 40			
74	74	VALVES SHALL BE 1/2" NPT			
75	75	TO AVOID WITHOUT WRITTEN			
76	76	PERMISSION OF THE CITY			
77	77	DO NOT SCALE THIS DRAWING			
78	78	CUSTOMER APPROVAL REQUIRED			
79	79	UNLESS OTHERWISE SPECIFIED			
80	80	DIMENSIONS ARE IN INCHES			
81	81	UNLESS OTHERWISE SPECIFIED			
82	82	CONCRETE SHALL BE 3000 PSI			
83	83	STEEL SHALL BE A36			
84	84	PIPE SHALL BE SCH 40			
85	85	VALVES SHALL BE 1/2" NPT			
86	86	TO AVOID WITHOUT WRITTEN			
87	87	PERMISSION OF THE CITY			
88	88	DO NOT SCALE THIS DRAWING			
89	89	CUSTOMER APPROVAL REQUIRED			
90	90	UNLESS OTHERWISE SPECIFIED			
91	91	DIMENSIONS ARE IN INCHES			
92	92	UNLESS OTHERWISE SPECIFIED			
93	93	CONCRETE SHALL BE 3000 PSI			
94	94	STEEL SHALL BE A36			
95	95	PIPE SHALL BE SCH 40			
96	96	VALVES SHALL BE 1/2" NPT			
97	97	TO AVOID WITHOUT WRITTEN			
98	98	PERMISSION OF THE CITY			
99	99	DO NOT SCALE THIS DRAWING			
100	100	CUSTOMER APPROVAL REQUIRED			

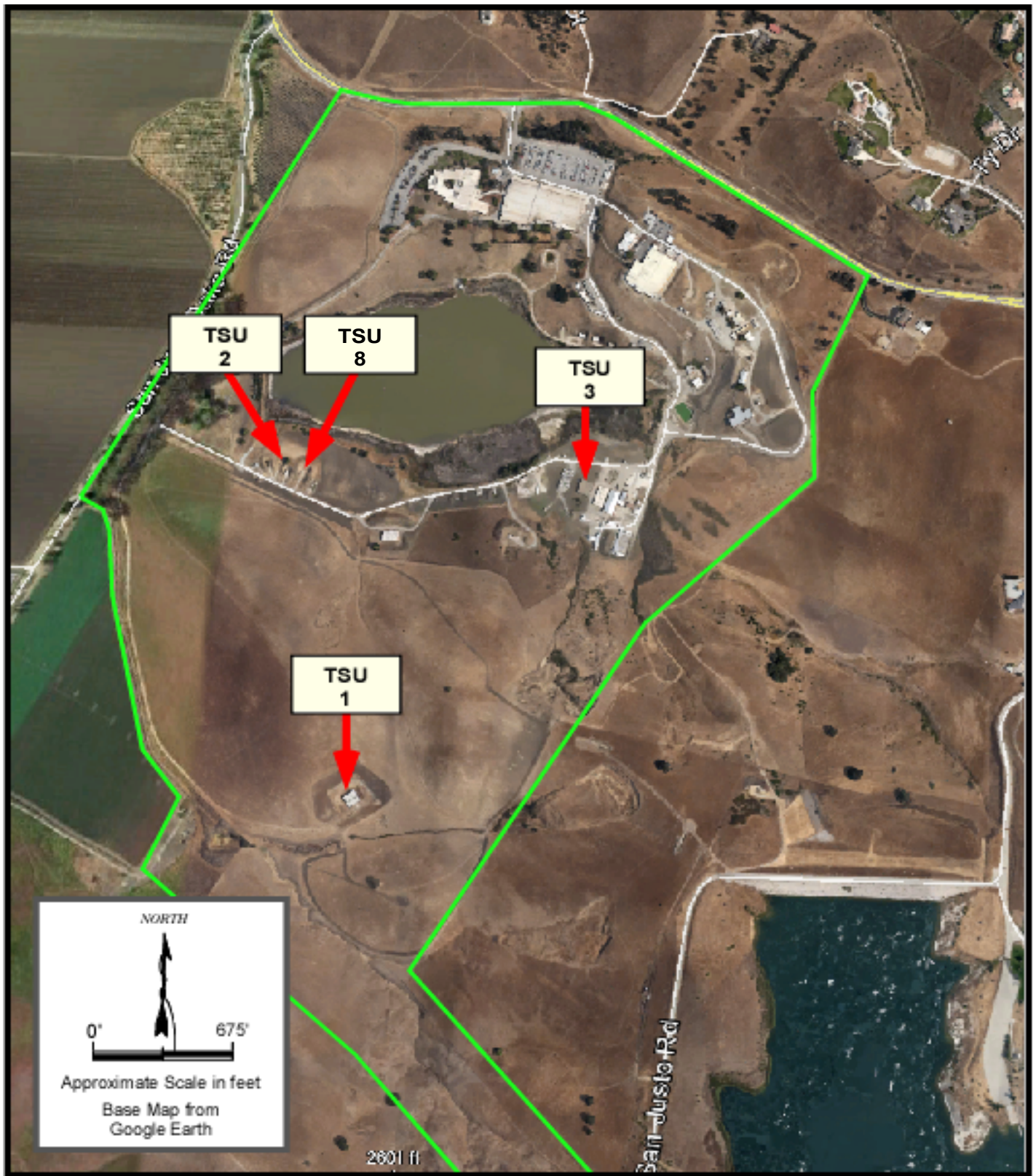
SITE UTILITIES

SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
ADDRESS: 3601 UNION ROAD. HOLLISTER, CA

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
II-3
Project
2X502



\\2x502.Pac-Sci-RCRA Permit\Figures\2-Site Map.cvx



Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

Site Aerial
Pacific Scientific Energetic Materials
3601 Union Road
Hollister, California

FIGURE
II-4
Project
2X502



WEBER, HAYES & ASSOCIATES
Hydrology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

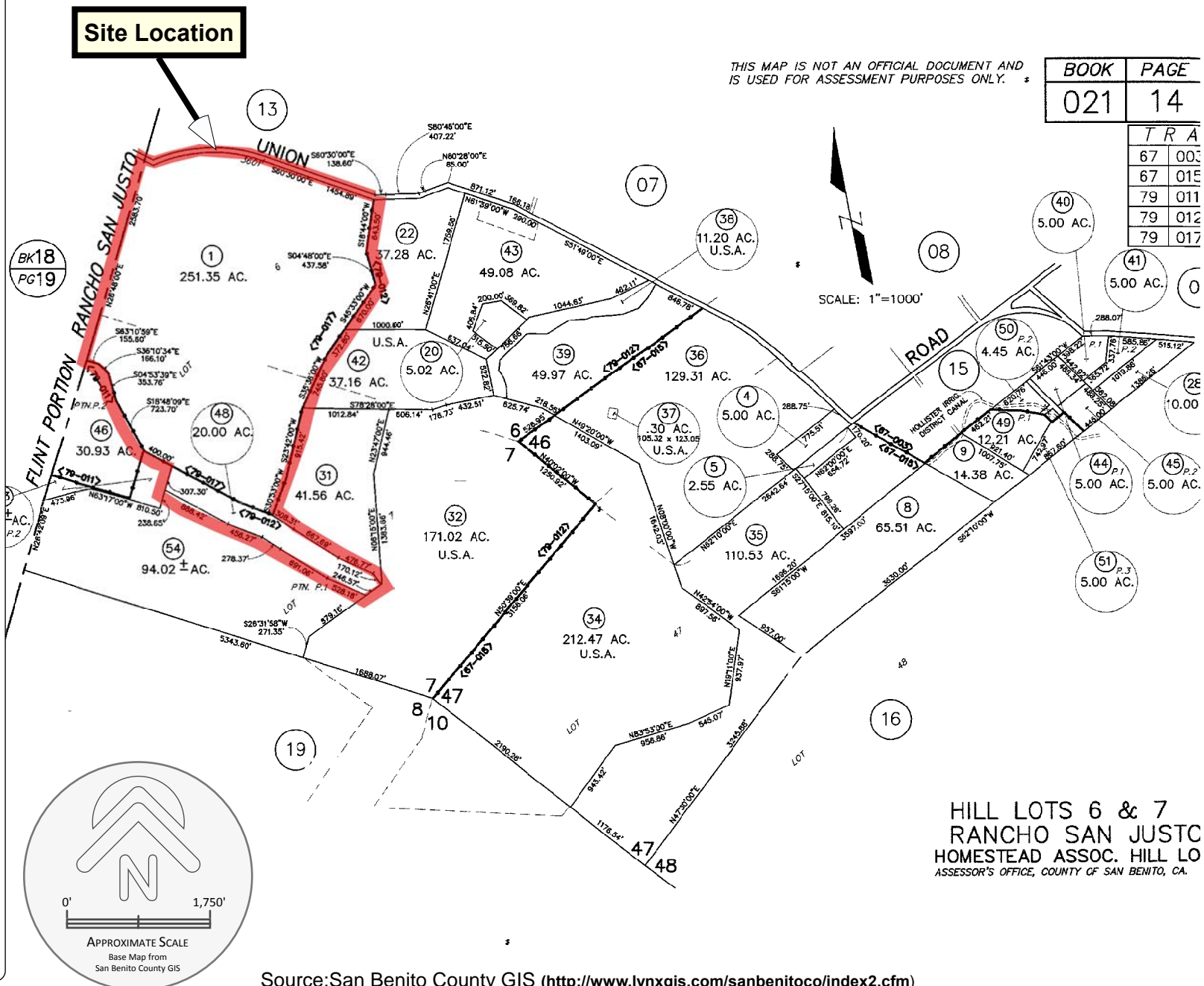
ASSESSOR'S PARCEL MAP

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: DECEMBER 2015

REVISIONS/NOTES:

FIGURE
II-5
Project
2X502



Source: San Benito County GIS (<http://www.lynxgis.com/sanbenitoco/index2.cfm>)



WEBER, HAYES & ASSOCIATES
Hydrology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

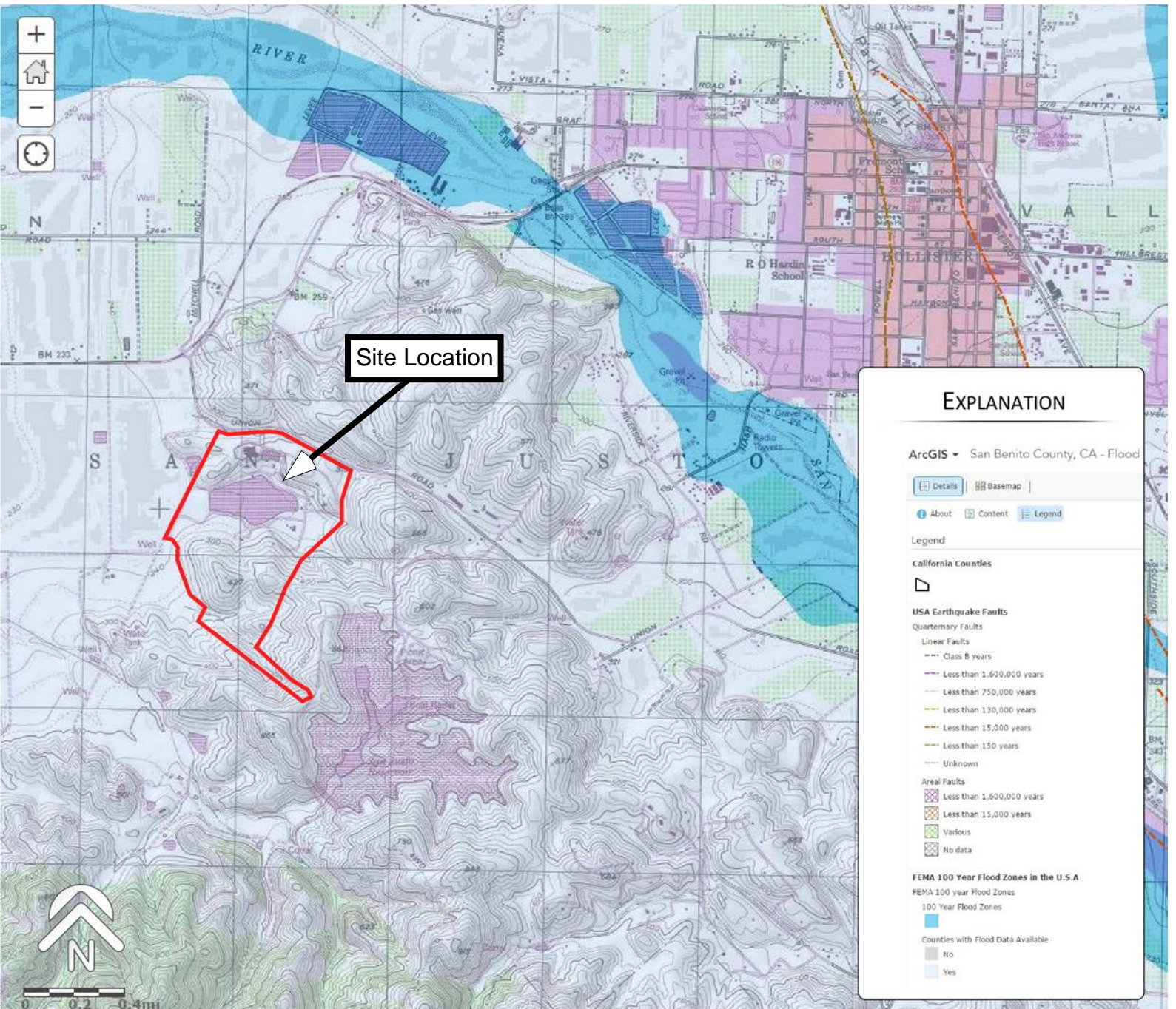
EARTHQUAKE FAULT & FLOOD PLAIN MAP

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

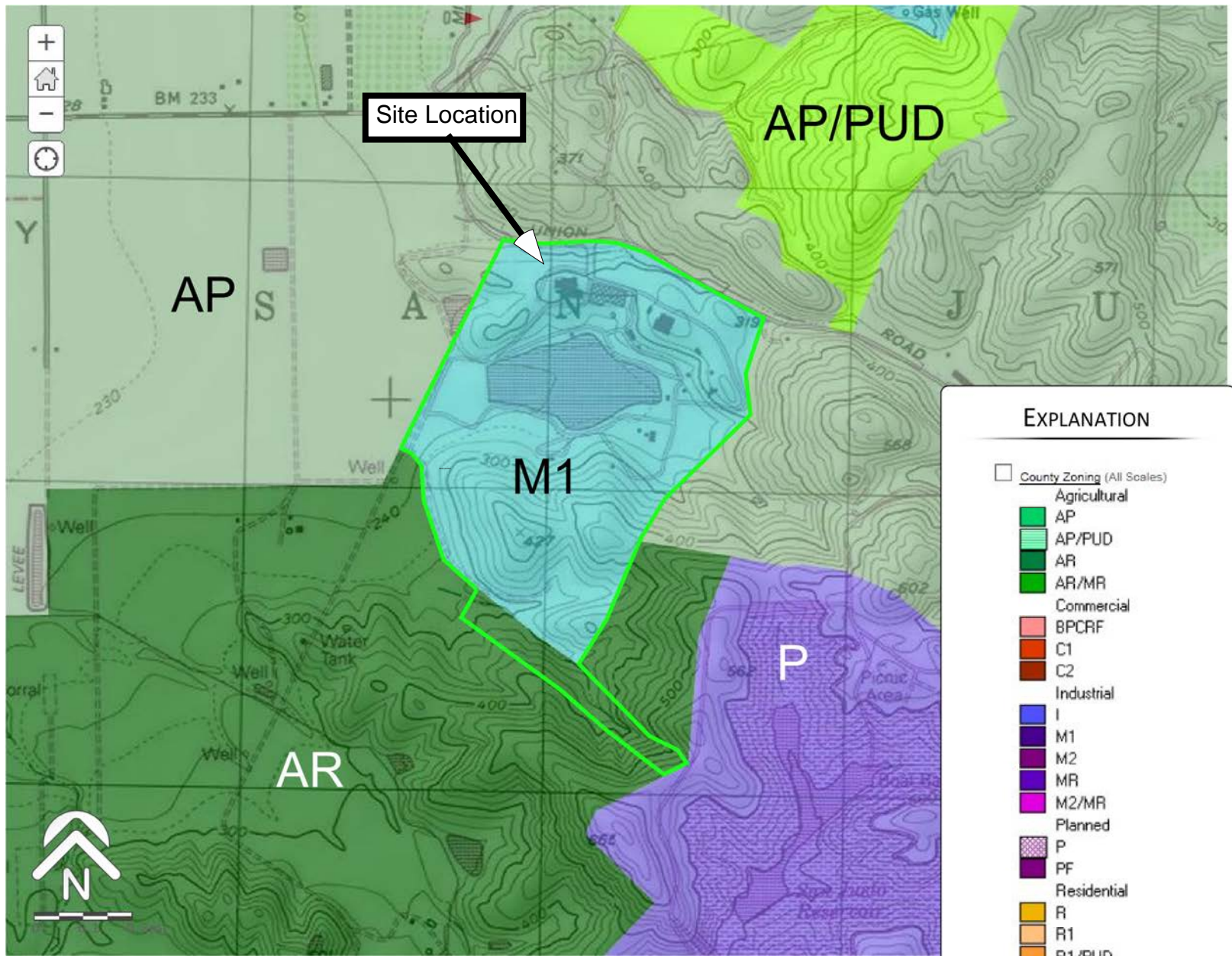
DATE: DECEMBER 2015

REVISIONS/NOTES:

FIGURE
11-6
Project
2X502



Source: San Benito GIS (<https://cosb.maps.arcgis.com/home/webmap/viewer.html?webmap=119fc58254c749ad95c1f1ecd99f7d6c>)



WEBER, HAYES & ASSOCIATES
Hydrology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

ZONING MAP

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: DECEMBER 2015

REVISIONS/NOTES:

FIGURE

II-7
Project
2X502



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

SHALLOW GEOLOGY & GROUNDWATER

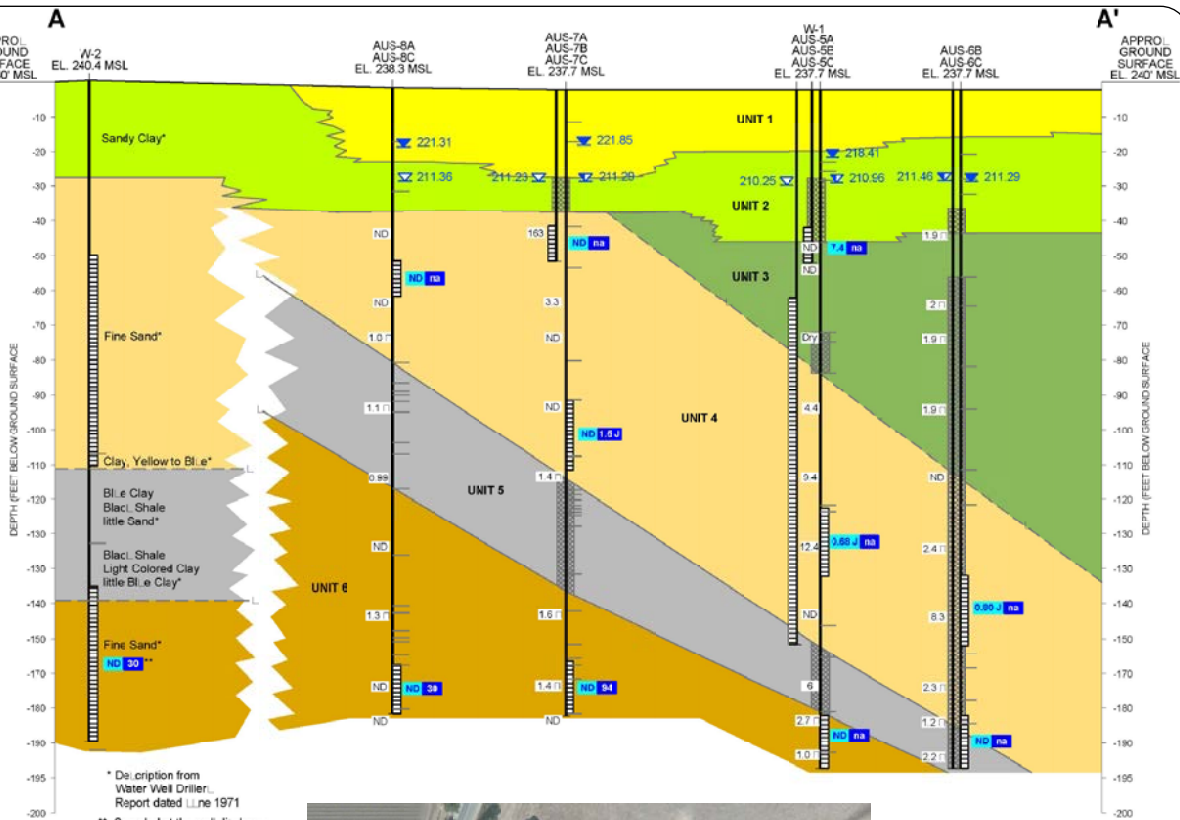
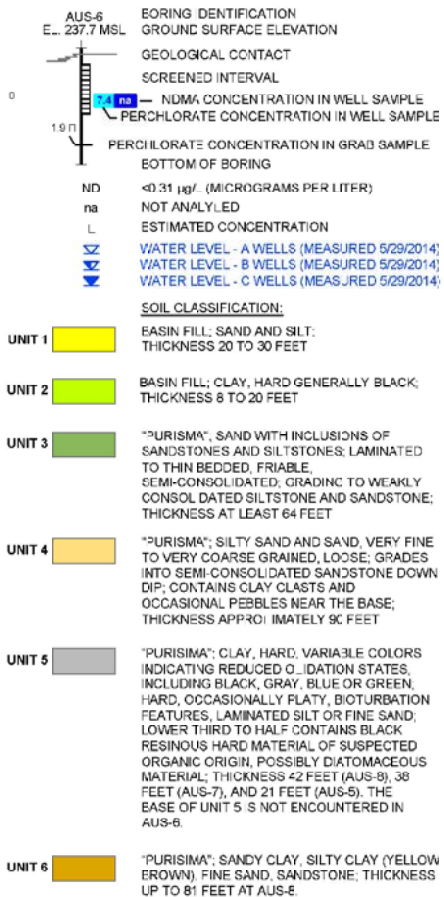
Site: Pacific Scientific Energetic Materials Company
Address: 3601 Union Road, Hollister, California

DATE: DECEMBER 2015

REVISIONS/NOTES:

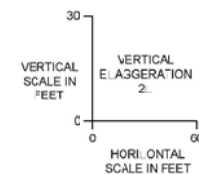
FIGURE
11-8
Project
2X502

EXPLANATION



* Description from Water Well Driller Report dated June 1971

** Sampled at the well discharge, located by both the upper and lower screen.



Source: Water Supply Well Investigation
Area Supplemental Investigation Work Plan
(Arcadis, July 2015)



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

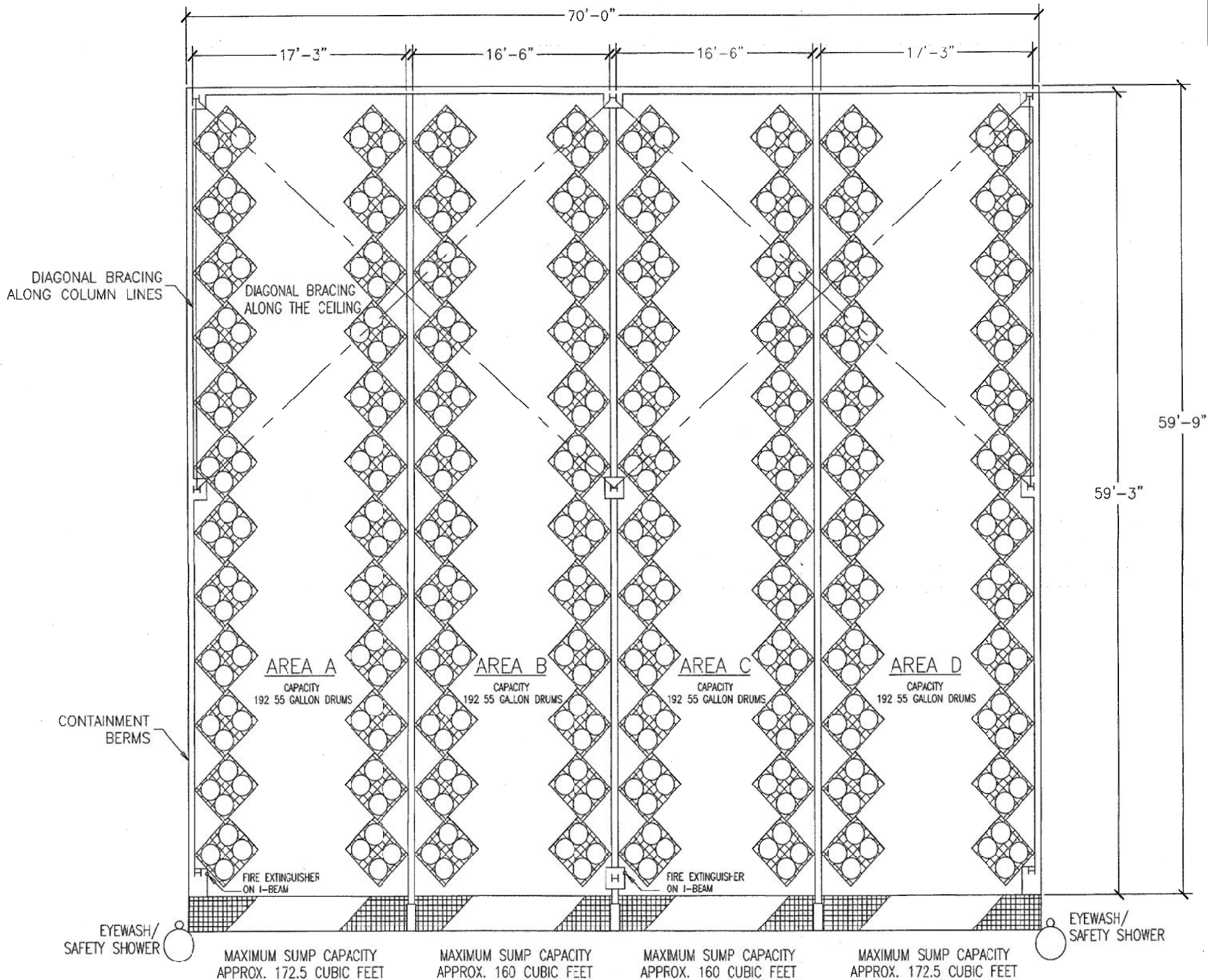
TSU-3 BUILDING LAYOUT

SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
ADDRESS: 3601 UNION ROAD, HOLLISTER, CA

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV-1
Project
2X502

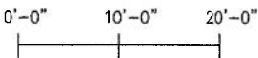
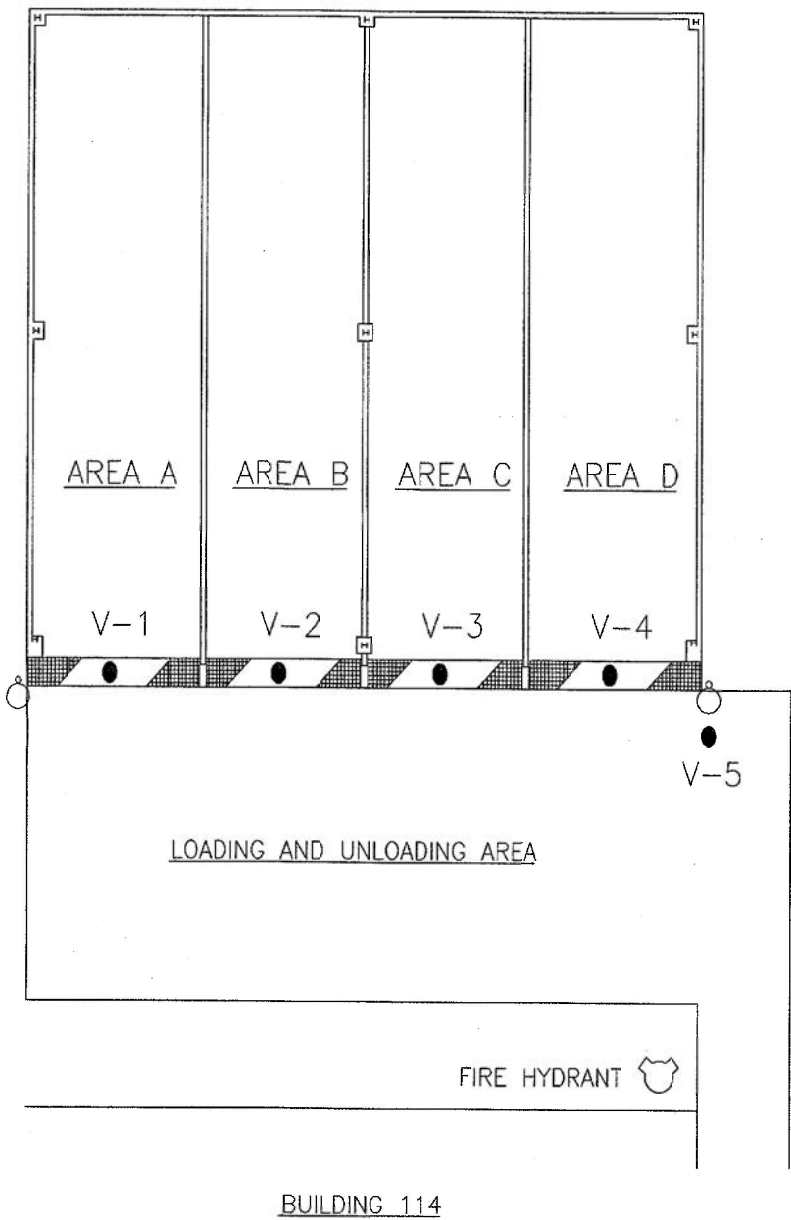


REVISION			
ZONE	LTR	DESCRIPTION	DATE
--	B	REVISED PER DCN305779	071109 SY
			APPROVED <i>LM</i>

0'-0" 5'-0" 10'-0"

PACIFIC SCIENTIFIC PROPRIETARY THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT WRITTEN PERMISSION OF PAC SCI		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DRAWING IAW MIL-1-31000 DIM & TO, IAW ANSI Y14.5M SURF TEXTURE IAW ANSI B46.1		CONTRACT NO. DRAWN BY A. GAREBY 02-05-14 CHECKED ENGINEER		PACIFIC SCIENTIFIC HOLLISTER, CALIFORNIA	
APPLICATION DO NOT SCALE THIS DWG		THIRD ANGLE PROJECTION DECIMALS .XX ± .03 .XXX ± .010 ANGLES ± 5°		DE CONFG MGR APPROVAL C. QUINN 02-06-18 RELEASED		TSU - 3	
NEXT ASSY USED ON		CUSTOMER CONTROLLED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		SITE D 06331		DRAWING NO. 401056	
CUST NAME:				SCALE: 1/4" = 1'-0"		SHEET 1 OF	

REVISION				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
--	B	REVISED PER DCN305779	071109 SY	CM



LEGEND:
V-1: VERIFICATION WIPE SAMPLE

PACIFIC SCIENTIFIC PROPRIETARY THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT WRITTEN PERMISSION OF PAC SCI		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DRAWING IAW MIL-T-31000 DIM & TOL IAW ANSI Y14.5M SURF TEXTURE IAW ANSI B46.1		CONTRACT NO. DRAWN BY A. GARIBAY 02-05-14 CHECKED ENGINEER		PACIFIC SCIENTIFIC HOLLISTER, CALIFORNIA	
NEXT ASSY USED ON		DECIMALS .XX ± .03 .XXX ± .010		DE CONFIC MGR		TSU - 3	
APPLICATION DO NOT SCALE THIS DWG		THIRD ANGLE PROJECTION		APPROVAL C. QUINN 02-06-18		DRAWING NO. 401058	
CUSTOMER CONTROLLED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		ANGLES = 5° 125 ✓		RELEASED		SCALE: 1/8" = 1'-0" CALC WT SHEET 1 OF 1	
CUST NAME:							



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

TSU-3 SURROUNDING AREA LAYOUT

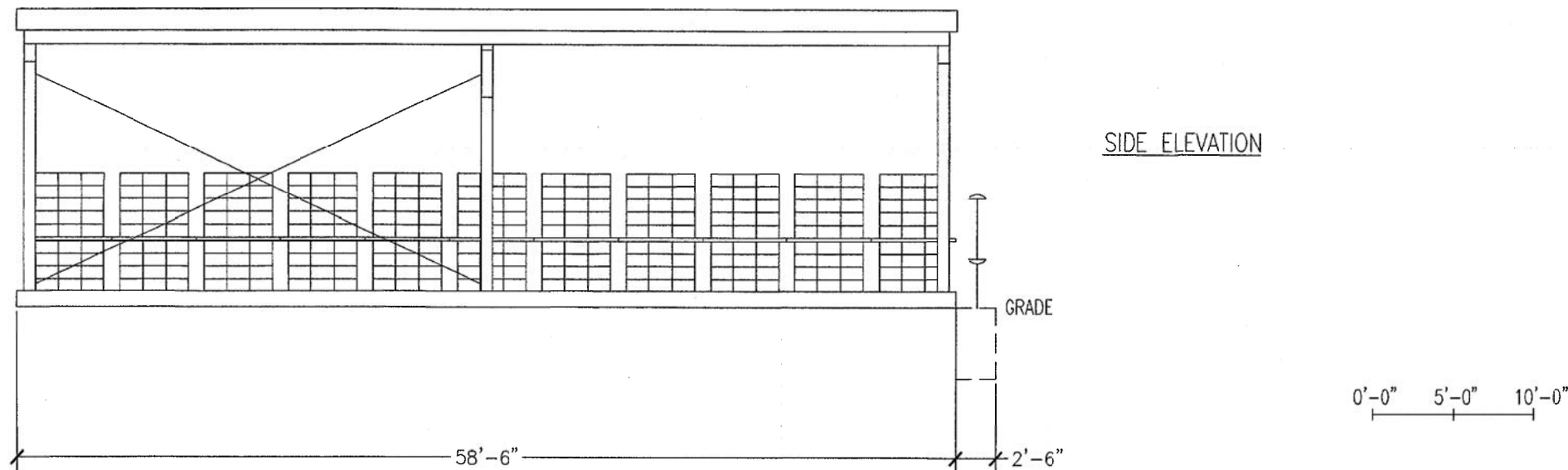
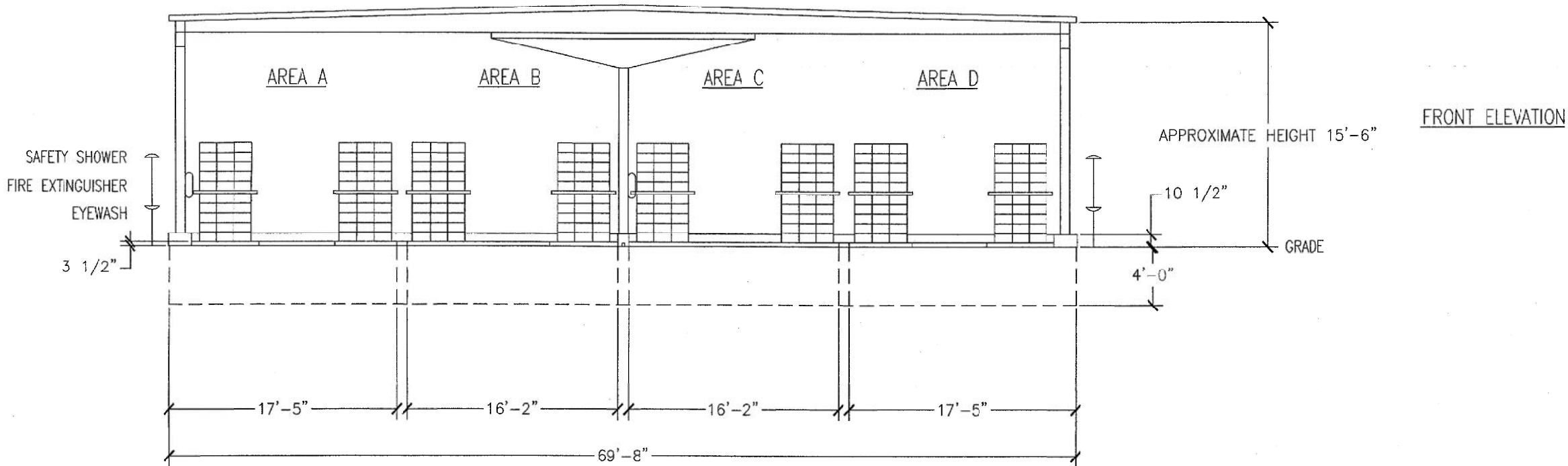
SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
ADDRESS: 3601 UNION ROAD, HOLLISTER, CA

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV-2
Project
2X502

REVISION				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
---	B	REVISED PER DCN305779	07/11/09 SY	<i>CM</i>



NEXT ASSY USED ON APPLICATION DO NOT SCALE THIS DWG CUSTOMER CONTROLLED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		PACIFIC SCIENTIFIC PROPRIETARY THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT WRITTEN PERMISSION OF PAC SCI THIRD ANGLE PROJECTION 	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DRAWING IAW MIL-T-31000 DIM & TOL IAW ANSI Y14.5M SURF TEXTURE IAW ANSI B46.1 DECIMALS .XX ± .03 .XXX ± .010 ANGLES ± 5' 125 ✓	CONTRACT NO. DRAWN BY A. GARETAY 02-05-15 CHECKED ENGINEER IN CHARGE APPROVAL C. QUINN 02-06-15 RELEASED	PACIFIC SCIENTIFIC HOLLISTER, CALIFORNIA ELEVATIONS TSU - 3 SIZE D CASE CODE 06331 DRAWING NO. 401057 SCALE: NONE CALC WT SHEET 1 OF 1
--	--	--	---	--	--



WEBER, HAYES & ASSOCIATES
 Hydrogeology and Environmental Engineering
 120 Westgate Drive, Watsonville, CA
 831.722.3580 / www.weber-hayes.com

TSU-3 FRONT VIEW / ELEVATIONS

SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
 ADDRESS: 3601 UNION ROAD, HOLLISTER, CA

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV-3
 Project
 2X502



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

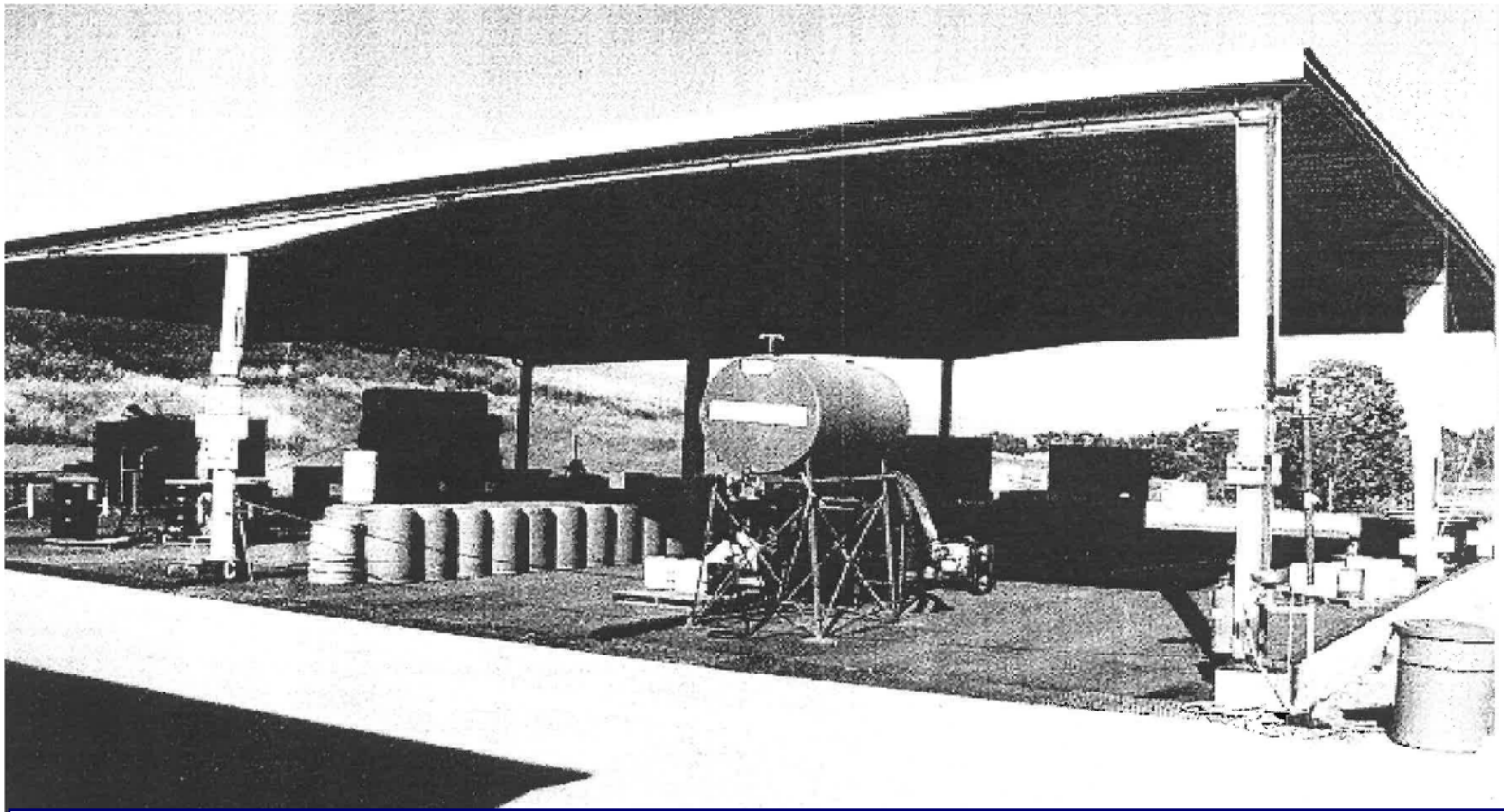
PHOTOGRAPH OF TSU-3

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV-4
Project
2X502



TSU-3 is for the storage of containers of hazardous wastes generated at the Facility. Hazardous wastes are segregated into the Bays at TSU-3 based on chemical compatibility.

- Bay A stores caustics, cyanides, sulfides, and aqueous solutions with pH of 5 to 9.
- Bay B stores halogenated hydrocarbons, non-flammable liquids, and aqueous solutions with pH of 5 to 9.
- Bay C stores acids.
- Bay D is used to store flammable liquids, reducing agents, metal catalysts, carbon, fuels, and combustible liquids.

TSU-3 is a roofed structure with open sides having a 6-inch thick reinforced concrete slab surrounded on three sides by a concrete block berm. The unbermed front side of TSU-3 has individual grated sumps for each of the four Bays which prevent run-on and collect spills and any rain which may blow into the Bays. The Bays are separated from each other by reinforced concrete dikes, which are bolted and epoxy bonded to the coated concrete floor of the Bay. Each Bay has an identical max capacity of 192 ea., 55-gallon drums (four drums per pallet, stacked two pallets high).



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

PHOTOGRAPH OF TSU-1

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV-6
Project
2X502



TSU-1 contains two 10-foot diameter, reinforced concrete pipes (burn tubes) which are enclosed in a reinforced, expanded metal mesh cage (22' W x 28' D x 10'10" H). The mesh cage is surrounded by concrete walls, installed in 2002, and on three sides by an earth bank and earth barricades over 15 feet high.

The pipes rest on a six-inch thick concrete slab reinforced with steel bars. The cage is bolted to the concrete slab and structurally supported by cantilever supports attached to external foundation blocks. The dimensions of the concrete slab are 54-foot W x 50-foot D. There is a 66-foot by 62-foot, corrugated metal roof structure over the mesh cage and concrete slab.

The maximum capacity is 500 pounds gross weight of hazardous waste per day for open burning and 100 pounds Net Explosive Weight (NEW) per day for detonation. Not over six (6) pounds NEW of material, which is expected to mass detonate, is allowed in each burn tube.



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

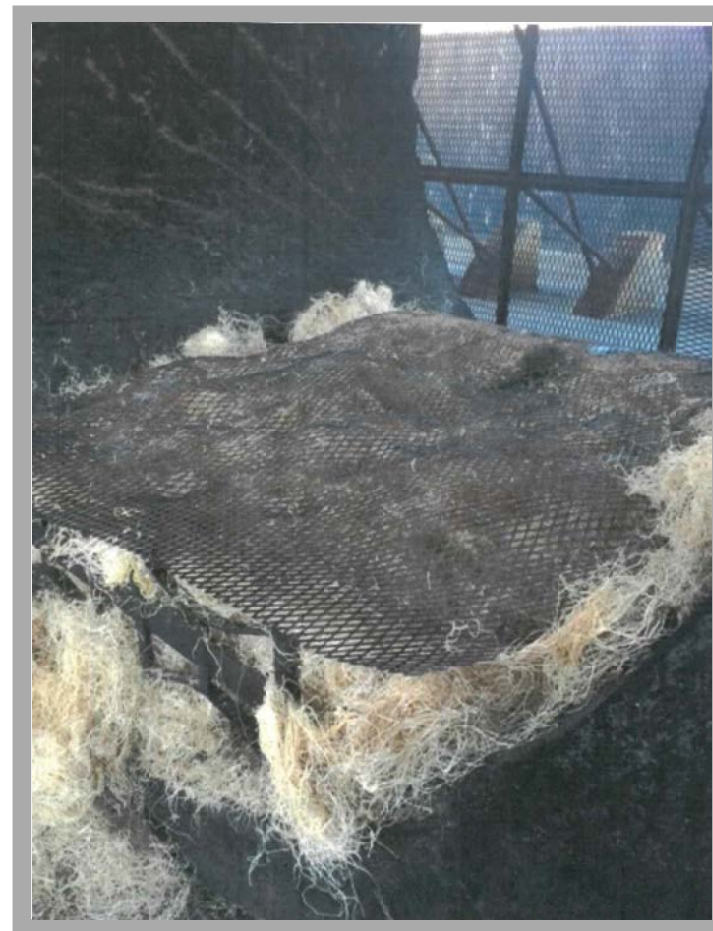
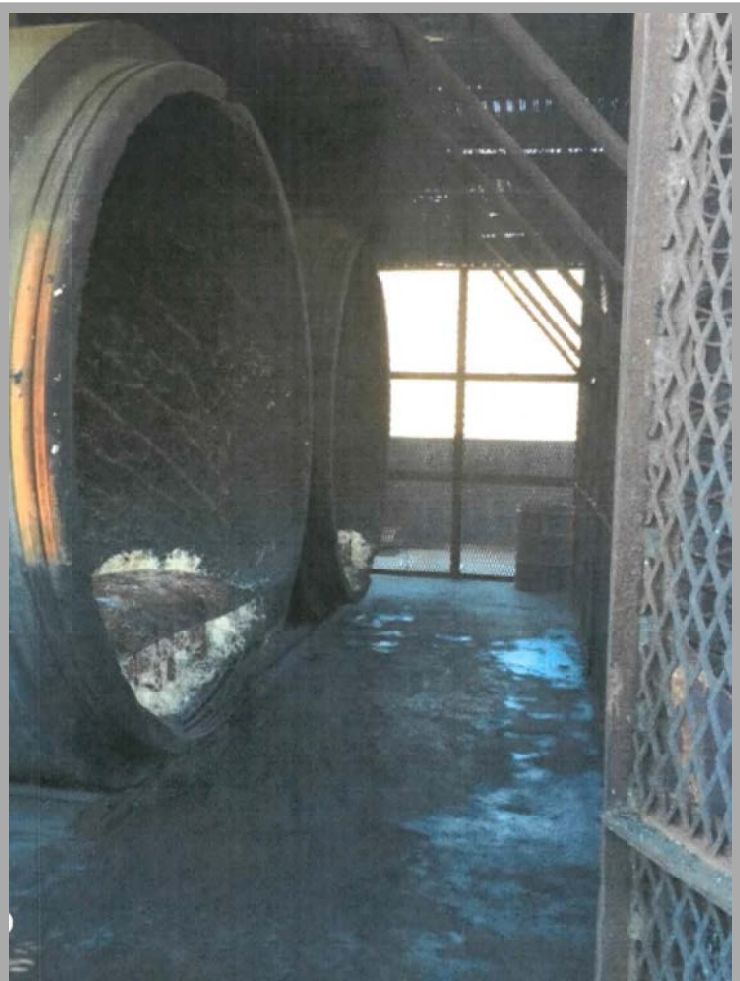
PHOTOGRAPH OF TSU-1

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV - 7
Project
2X502



Explosive hazardous waste (EHW) and EHW contaminated waste is burned/detonated at TSU-1. Subsequent secondary and tertiary burning is conducted as needed to ensure complete treatment of the reactive materials.

- Over 95% of the EHW treated at TSU-1 is contained in explosive devices made of metal.
- The Explosive Hazardous Waste in Solvents (EHWS) residue from TSU-2 makes up about 5% of the waste treated.
- Ash generation is limited to the cellulose fuel used (shown in photo above, right), to small amounts from EHW contaminated organic material, and to loose EHW in the form of granules, pellets, or billets. Ash from TSU-1 with lead content is collected and managed as hazardous waste through TSU-3. Other ash from TSU-1 is managed as non-hazardous waste, as is scrap metal.



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

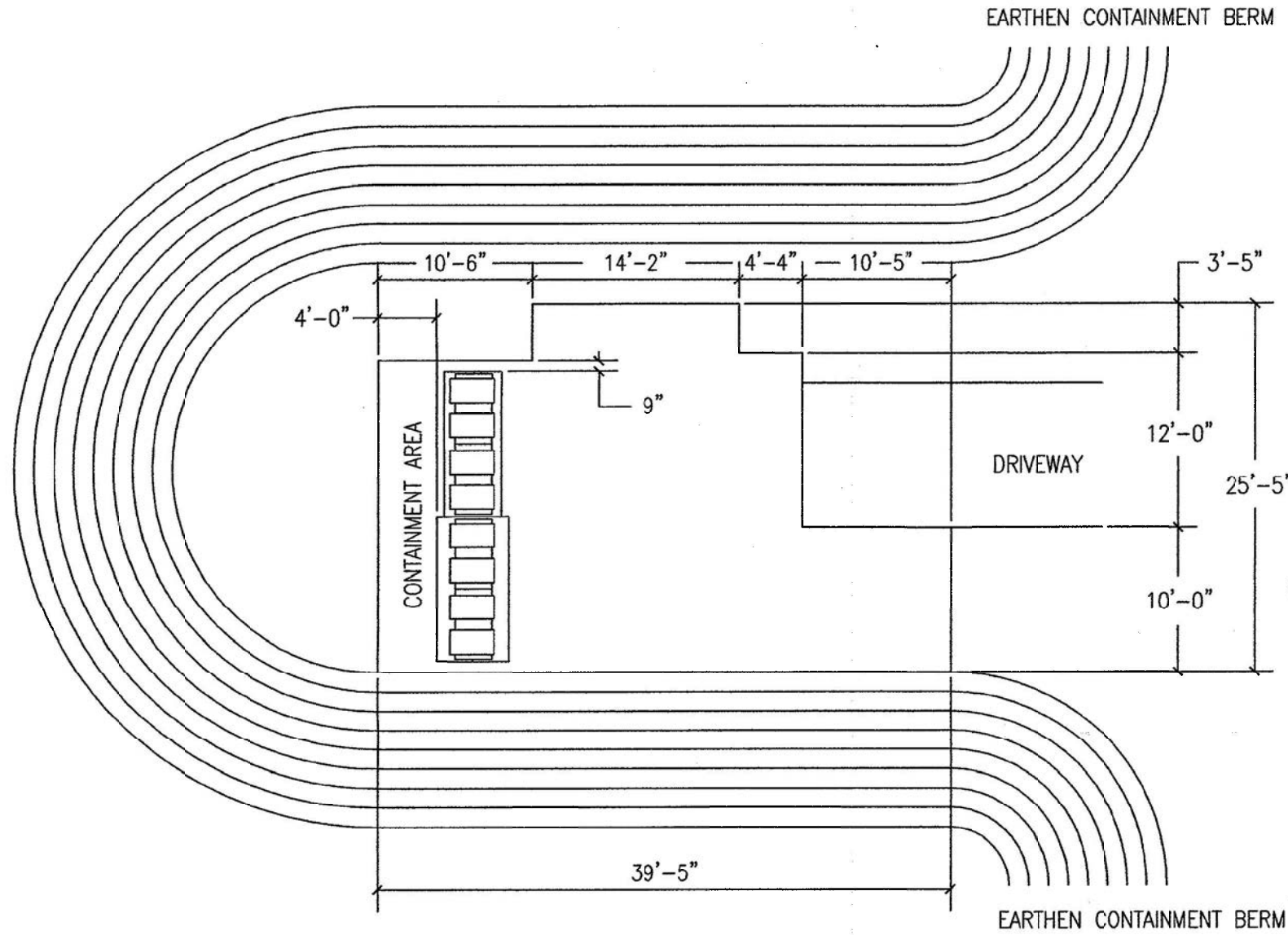
TSU-2 BUILDING DETAILS

SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
ADDRESS: 3601 UNION ROAD, HOLLISTER, CA

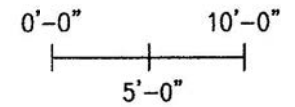
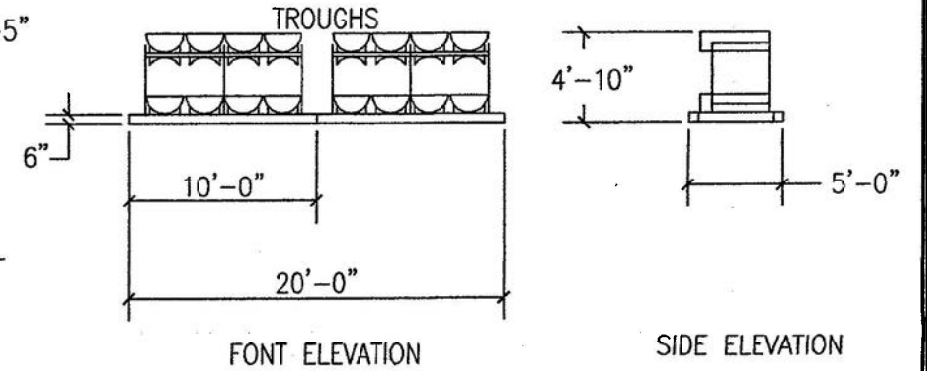
DATE: MARCH 2016

REVISIONS/NOTES:

**FIGURE
IV-8**
Project
2X502



REVISION				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
--	B	REVISED PER DCN305779	071112 SY	



		PACIFIC SCIENTIFIC PROPRIETARY THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT WRITTEN PERMISSION OF PAC SCI	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DRAWING IAW MIL-T-31000 DIM & TOL IAW ANSI Y14.5M SURF TEXTURE IAW ANSI B46.1	CONTRACT NO.		PACIFIC SCIENTIFIC HOLLISTER, CALIFORNIA			
				DRAWN BY	S. YUSTE	02-05-16	TSU-2		
		CHECKED							
NEXT ASSY	USED ON	ENGINEER							
APPLICATION		GC							
DO NOT SCALE THIS DWG		CONFIG MGR			SIZE	PAGE CODE	DRAWING NO.	401065	
CUSTOMER CONTROLLED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		APPROVAL	C. QUINN	02-06-18	C	06331			
CUSTOMER NAME:		RELEASED			SCALE: 1/4"-1'-0"		CALC WT	SHEET 1 OF 1	



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

PHOTOGRAPH OF TSU-2

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV - 9
Project
2X502

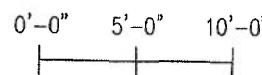
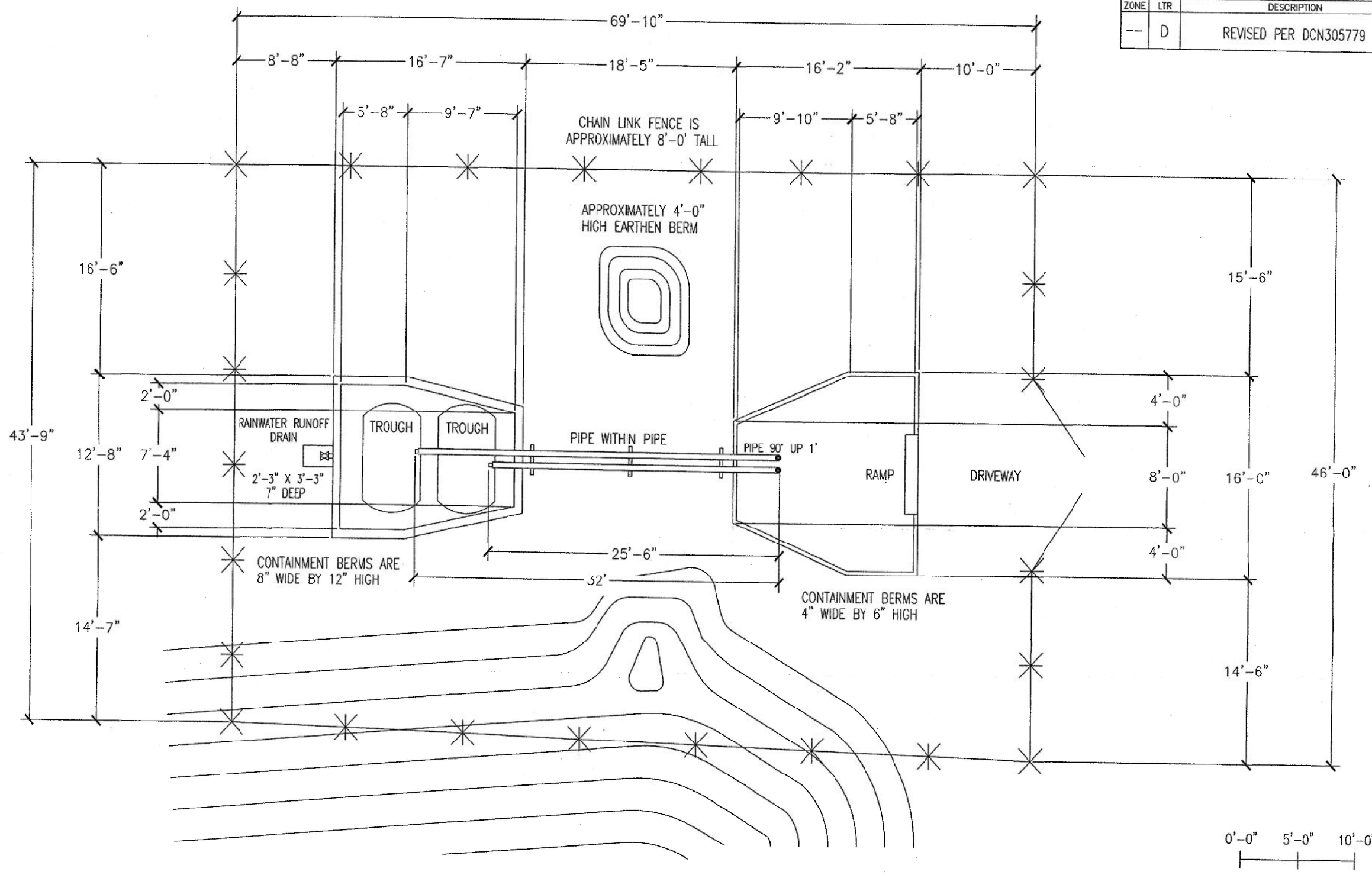


Explosive hazardous waste in solvent (EHWS) is burned in open horizontal, split steel troughs supported by steel racks in a double boiler arrangement. Contaminated solvents containing relatively more water or lower volatility are placed in the upper container. The fire is initiated remotely in the lower container. EHWS is not placed into the unit until just before burning is started. The treatment capacity is 300 gallons per day.

Between treatments, the upper troughs contain less than five gallons of material with free liquid and the lower troughs contain dry ash. Residue from TSU-2 is treated in TSU-1 to ensure complete treatment of its reactivity. If empty, the troughs and secondary containment pans are removed (as pictured above) or inverted during expected periods of rain.

TSU-2 consists of four sets of open, horizontal, split steel troughs supported by steel racks in a double boiler arrangement. The troughs are made from 55-gallon carbon or stainless steel drums cut on the height axis to have a volume for 30 gallons of fluid and a five-inch freeboard. Two racks with eight troughs rest in a 0.1875-inch thick welded, stainless steel secondary containment pan. There are two secondary containment pans. One is four feet by ten feet and 0.489 feet deep (146 gallons). The other secondary containment pan is 4.98 feet wide by ten feet and 0.489 feet deep (183 gallons).

REVISION				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
--	D	REVISED PER DCN305779	07/11/09 SY	LM



WEBER, HAYES & ASSOCIATES
 Hydrogeology and Environmental Engineering
 120 Westgate Drive, Watsonville, CA
 831.722.3580 / www.weber-hayes.com

TSU-8 BUILDING DETAILS

SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
ADDRESS: 3601 UNION ROAD, HOLLISTER, CA
DATE: MARCH 2016

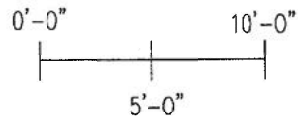
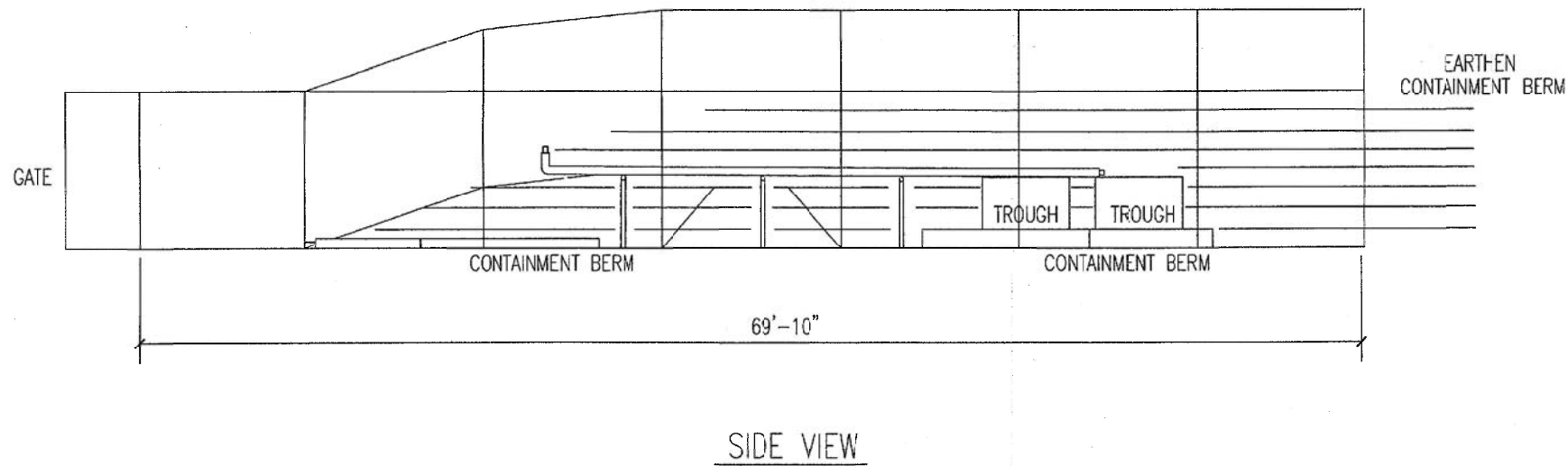
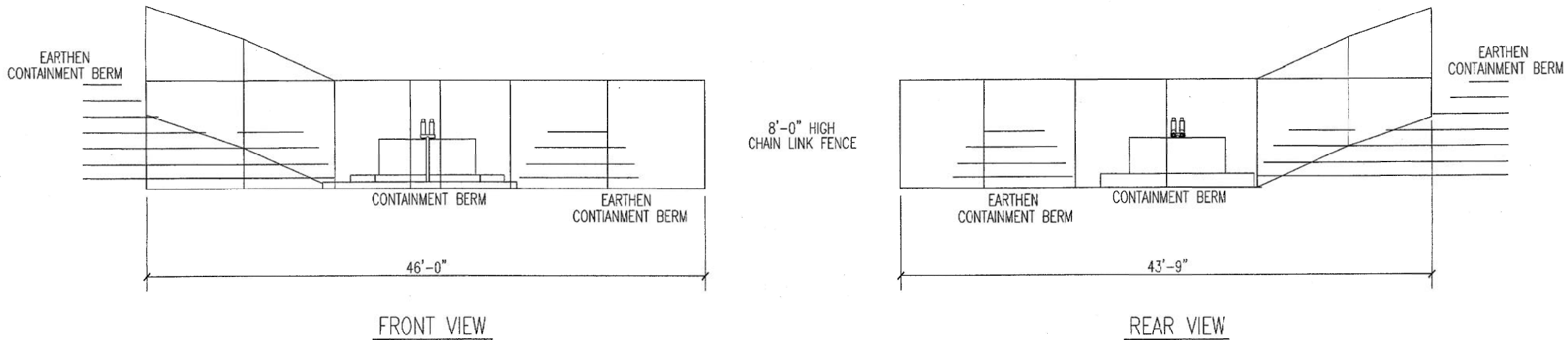
REVISIONS/NOTES:

FIGURE IV-11
 Project 2X502

PACIFIC SCIENTIFIC PROPRIETARY THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT WRITTEN PERMISSION OF PAC SCI		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DRAWING UAW ML-T-31000 DIM & TOL UAW ANSI Y14.5M SURF TEXTURE UAW ANSI B46.1		CONTRACT NO. DRAWN BY A. GARIBAY 02-05-15 CHECKED ENGINEER QC CONFIG MGR APPROVAL C. QUINN 02-06-18 RELEASED		PACIFIC SCIENTIFIC HOLLISTER, CALIFORNIA TSU - 8 SIZE D PAGE CODE 06331 DRAWING NO. 401063	
NEXT ASSY USED ON APPLICATION DO NOT SCALE THIS DWG CUSTOMER CONTROLLED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		THIRD ANGLE PROJECTION 		DECIMALS .XX ± .03 .XXX ± .010 ANGLES ± 5' 125 ✓		CUST NAME	

Facility - TSU8

REVISION				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
--	D	REVISED PER DCN305779	071109 SY	<i>LM</i>



NEXT ASSY USED ON APPLICATION DO NOT SCALE THIS DWG CUSTOMER CONTROLLED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		PACIFIC SCIENTIFIC PROPRIETARY THIS DOCUMENT AND THE DATA DISCLOSED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT WRITTEN PERMISSION OF PAC SCI	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DRAWING INW ML-T-31000 DIM & TOL INW ANSI Y14.5M SURF TEXTURE INW ANSI B46.1	CONTRACT NO. DRAWN BY S. YUSTE 02-05-14 CHECKED ENGINEER GE CONFIG MGR APPROVAL C. QUINN 02-05-18 RELEASED	PACIFIC SCIENTIFIC HOLLISTER, CALIFORNIA TSU-8 SIZE D CAGE CODE 06331 SCALE: 1/4" = 1'-0"	DRAWING NO. 401064 SHEET 1 OF 1
--	--	---	--	---	--	------------------------------------



WEBER, HAYES & ASSOCIATES
 Hydrogeology and Environmental Engineering
 120 Westgate Drive, Watsonville, CA
 831.722.3580 / www.weber-hayes.com

TSU-8 BUILDING DETAILS (SIDE VIEW)

SITE: PACIFIC SCIENCE ENERGETIC MATERIALS COMPANY
 ADDRESS: 3601 UNION ROAD, HOLLISTER, CA

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE IV-12
 Project 2X502



WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA
831.722.3580 / www.weber-hayes.com

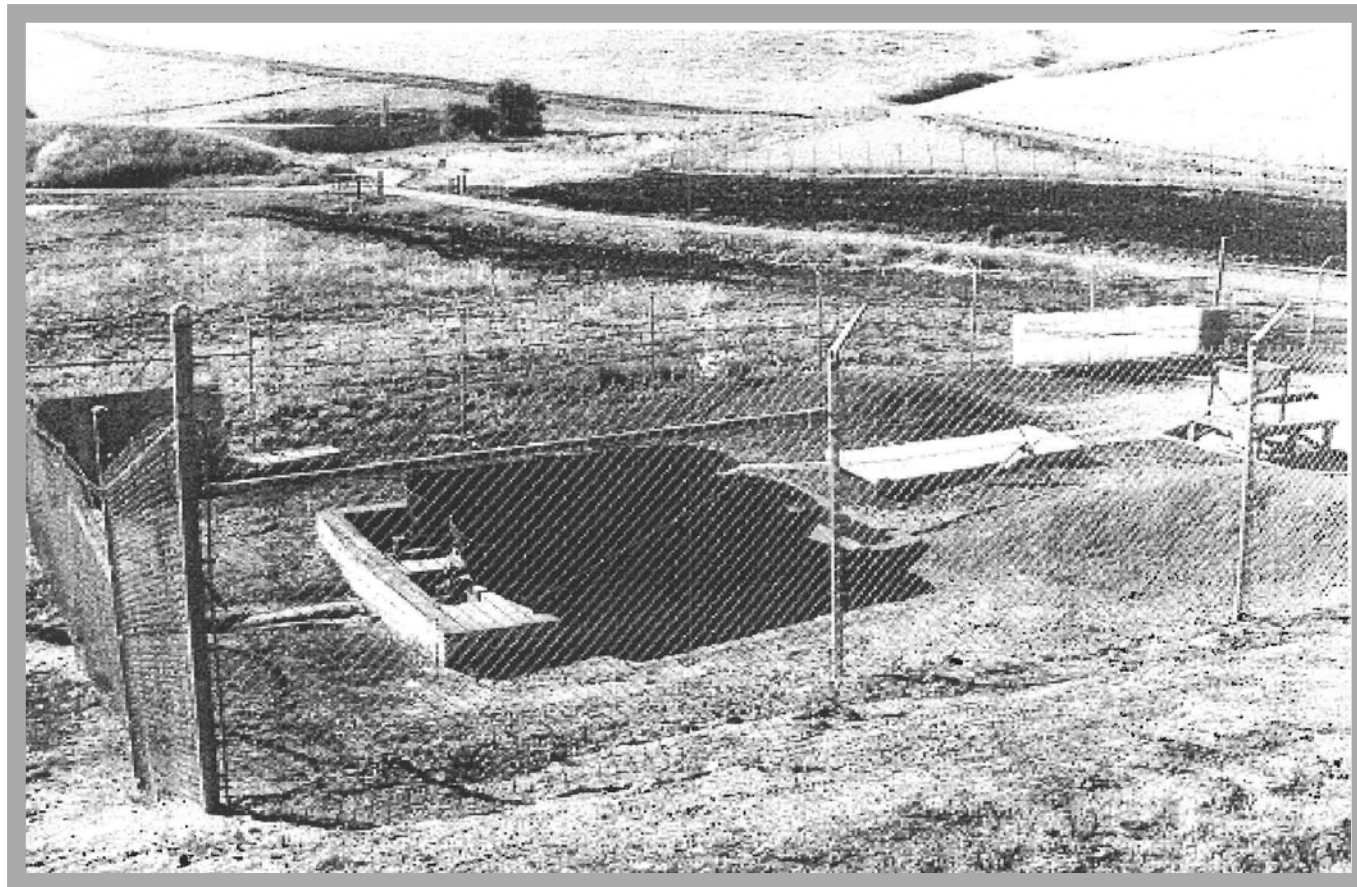
PHOTOGRAPH OF TSU-8

SITE: Pacific Scientific Energetic Materials Company
ADDRESS: 3601 Union Road, Hollister, California

DATE: MARCH 2016

REVISIONS/NOTES:

FIGURE
IV-13
Project
2X502



TSU-8 consists of two open troughs used to naturally evaporate Safety Bucket water (water-containing explosives). When enough water has evaporated to result in a thick turbidity, the concentrated hazardous waste is transferred to TSU-1 or TSU-2, added to other EHWS and burned. No volatile organic compounds are present in the Safety Bucket Water. Daily evaporation varies from near zero during cold rainy weather when precipitation covers are in place, to over ten gallons during hot, dry, windy weather.

The two evaporation troughs are coated with a 100% solids coal tar polyurethane elastomer (Endura-Flex 1947) coating to a minimum thickness of 100 mils and are located within a concrete secondary containment pad filled by a gravity feed pipe from an unloading area. Safety Bucket Water is siphoned or hand-pumped from a container in an environmental support vehicle into the feed pipes in the unloading area which empty into the evaporation troughs. The feed pipes are pipe-in-pipe construction with a 2-inch diameter stainless steel inner pipe and a 4-inch diameter polyvinyl chloride (PVC) outer pipe. The troughs are constructed of three-sixteenths of an inch thick carbon steel with welded heads. The troughs are half cylinders with slightly domed ends. Each trough is approximately 4.32 feet in diameter and 11.3 feet long.

Part A Document Table

Summary of Waste Explosives at TSU-1

Components of Waste Explosives Treated at TSU-1

Summary of Waste Solvents & Explosives at TSU-2

Hazardous Waste Stored in Containers at TSU-3

Table 1. Summary of Waste Explosives at TSU-1

[Source: Human Health and Ecological Risk Assessment Work, Plan ToxStrategies, November 25, 2015]

Totals	2005 - 2009	2010 - 2014	2005 - 2014
Sum if individual explosive component >0.3%	93%	97%	94%

Chemical	2005 - 2009 % of net explosives	2010 - 2014 % of net explosives	2005 - 2014 % of net explosives
134082	0.000%	0.000%	0.000%
134112	0.000%	0.000%	0.000%
510005	0.258%	0.026%	0.131%
510149	0.002%	0.000%	0.001%
510164	0.000%	0.006%	0.003%
510172	0.394%	0.000%	0.179%
510174	0.016%	0.001%	0.008%
510184	0.164%	0.000%	0.074%
510199	0.025%	0.000%	0.011%
510204	0.497%	0.813%	0.670%
510207	0.004%	0.000%	0.002%
510212	0.685%	0.013%	0.318%
510251	0.003%	0.000%	0.002%
510333	0.113%	0.000%	0.051%
510395	0.585%	1.27%	0.958%
510414	0.249%	0.051%	0.141%
510425	0.021%	0.056%	0.040%
510427	0.000%	0.005%	0.003%
510503	0.005%	0.005%	0.005%
510504	0.000%	0.005%	0.003%
510507	0.212%	0.039%	0.117%
510532	2.25%	0.103%	1.07%
510556	0.236%	0.259%	0.249%
510561	0.000%	1.09%	0.598%
510572	1.41%	0.439%	0.879%
510575	0.226%	2.77%	1.62%
510577	0.000%	1.39%	0.758%
510578	0.374%	4.58%	2.67%
518837	0.002%	0.000%	0.001%
660512	0.010%	0.000%	0.005%
1166517	0.010%	0.000%	0.005%
A1A Powder	0.082%	0.000%	0.037%
Ag2B12H12	0.000%	0.016%	0.009%
AIM-57 510563	0.069%	0.118%	0.096%
ALCLO	0.008%	0.000%	0.003%
Aluminum Powder	0.252%	0.097%	0.167%
Ammonium Borane	0.000%	0.023%	0.013%
Ammonium Perchlorate	28.8%	36.9%	33.2%
Apex 92 Propellant	1.03%	1.06%	1.05%
B/BaCrO4 510203	0.436%	0.085%	0.244%

Table 1. Summary of Waste Explosives at TSU-1

Totals	2005 - 2009	2010 - 2014	2005 - 2014
Sum if individual explosive component >0.3%	93%	97%	94%

Chemical	2005 - 2009 % of net explosives	2010 - 2014 % of net explosives	2005 - 2014 % of net explosives
BATW	0.000%	0.000%	0.000%
BF	0.000%	0.061%	0.033%
BKN03	16.6%	8.6%	12.2%
Black Powder	0.231%	0.000%	0.104%
BNCB	0.029%	0.002%	0.015%
CaCrO4	0.328%	0.000%	0.148%
CBK	0.228%	0.000%	0.103%
Cellulose Nitrate	0.230%	1.70%	1.04%
CH-6 510218	3.8%	17.4%	11.2%
DAAB	0.009%	0.000%	0.004%
DAZAB	0.000%	0.000%	0.000%
DCB	0.000%	0.000%	0.000%
DCTNB	0.000%	0.000%	0.000%
DDNP	0.034%	0.000%	0.015%
DNBF	0.000%	0.000%	0.000%
Flash Mix	0.000%	0.009%	0.005%
GN	0.204%	0.000%	0.093%
H2GEN	0.029%	0.000%	0.013%
HACN	0.000%	1.766%	0.966%
HB2	0.008%	0.000%	0.003%
HES 510018	0.015%	0.529%	0.296%
HEXAN	0.009%	0.000%	0.004%
Hi-Temp Smokeless Powder	0.111%	0.401%	0.270%
HIPEL	3.97%	3.02%	3.45%
HMX 510190	2.60%	2.19%	2.38%
HNS 510285	11.0%	5.2%	7.8%
IMR Hi-Temp Smokeless Powder	0.284%	0.000%	0.129%
J2X Propellant	0.000%	0.383%	0.209%
KCL04	0.117%	0.000%	0.053%
KDNBF	0.000%	0.000%	0.000%
KDSB	0.228%	0.000%	0.103%
KP	0.000%	0.000%	0.000%
Lead Azide 510192	0.300%	0.078%	0.179%
Lead Dioxide	0.059%	0.000%	0.027%
Lead Styphnate 510565	0.202%	0.173%	0.187%
M-9 Flakes	0.021%	0.000%	0.009%
Magnesium Oxide	0.292%	0.000%	0.132%
Magnesium Powder	0.840%	0.000%	0.381%
Mg Teflon 510026	0.796%	0.395%	0.577%
N-12 Propellant	0.106%	0.143%	0.126%
NaCe	0.000%	0.000%	0.000%
Nitro Starch	0.166%	0.044%	0.099%
Nitrocellulose	0.059%	0.000%	0.027%
NONA	0.000%	0.003%	0.002%

Table 1. Summary of Waste Explosives at TSU-1

Totals	2005 - 2009	2010 - 2014	2005 - 2014
Sum if individual explosive component >0.3%	93%	97%	94%

Chemical	2005 - 2009 % of net explosives	2010 - 2014 % of net explosives	2005 - 2014 % of net explosives
PBXN-5 510556	0.810%	0.768%	0.787%
PE-130	0.005%	0.000%	0.002%
PE-132	0.007%	0.000%	0.003%
PE-137	0.011%	0.000%	0.005%
PE-151	0.003%	0.000%	0.002%
PE-170	0.000%	0.026%	0.014%
PE-171	0.016%	0.000%	0.007%
PE-172	0.004%	0.000%	0.002%
PE-176	0.019%	0.000%	0.009%
PE-179	0.085%	0.029%	0.054%
PE-181	0.002%	0.000%	0.001%
PE-187	0.035%	0.047%	0.042%
PE-191	0.003%	0.000%	0.002%
PE-194	0.154%	0.000%	0.070%
PE-196	0.217%	0.153%	0.182%
PE-197	0.002%	0.000%	0.001%
PE-198	0.003%	0.000%	0.002%
PE-200	0.019%	0.008%	0.013%
PE-201	0.066%	0.000%	0.030%
PE-208	0.010%	0.000%	0.005%
PE-211	1.36%	0.365%	0.815%
PE-212	0.003%	0.000%	0.002%
PE-217	0.001%	0.000%	0.000%
PE-220	0.035%	0.000%	0.016%
PE-228	0.031%	0.000%	0.014%
PE-230	0.058%	0.000%	0.026%
PE-231	0.059%	0.000%	0.027%
PE-232	0.062%	0.000%	0.028%
PE-236	0.007%	0.000%	0.003%
PE-240	4.08%	0.171%	1.94%
PE-253	0.012%	0.000%	0.005%
PE-255	0.015%	0.000%	0.007%
PE-256	0.003%	0.000%	0.002%
PE-261	0.004%	0.000%	0.002%
PE-270	0.001%	0.000%	0.000%
PE-277	0.292%	0.000%	0.132%
PE-279	0.004%	0.000%	0.002%
PE-280	0.002%	0.000%	0.001%
PE-281	0.012%	0.000%	0.005%
PE-285	0.002%	0.112%	0.062%
PE-9	0.092%	0.000%	0.042%
PE-9	0.015%	0.000%	0.007%
PETN 510193	0.653%	0.014%	0.304%
PICL	0.000%	0.001%	0.001%

Table 1. Summary of Waste Explosives at TSU-1

Totals	2005 - 2009	2010 - 2014	2005 - 2014
Sum if individual explosive component >0.3%	93%	97%	94%

Chemical	2005 - 2009 % of net explosives	2010 - 2014 % of net explosives	2005 - 2014 % of net explosives
Potassium Perchlorate	1.46%	3.09%	2.35%
Prime Mix	0.000%	0.010%	0.005%
PYX	1.23%	0.000%	0.556%
QAZ	0.000%	0.254%	0.139%
QIC1086	0.000%	0.012%	0.007%
QIC1099	0.010%	0.000%	0.005%
QIC1100	0.002%	0.000%	0.001%
QIC1101	0.035%	0.000%	0.016%
QIC948	0.002%	0.000%	0.001%
RDX 510015	3.80%	0.418%	1.95%
Smokeless Powder	0.000%	0.042%	0.023%
TACOT	0.001%	0.000%	0.000%
Tetracine	0.066%	0.000%	0.030%
Tetryl	0.032%	0.000%	0.015%
TIOX	0.016%	0.000%	0.007%
Titanium Powder	0.212%	0.402%	0.316%
TNT	0.328%	0.000%	0.149%
Tungsten Delay Mix	1.67%	0.630%	1.10%
Tungsten Powder	0.348%	0.154%	0.242%
WS7188	0.010%	0.000%	0.005%
Zirconium Metal Powder	1.092%	0.002%	0.496%
ZPP 510010	0.054%	0.052%	0.053%
TOTALS	100%	100%	100%

Notes

Shaded values are greater than 0.3% of total explosives

Table 3. Components of Explosive Materials Treated at TSU-1 Included in HHERA

Explosive Material	Reactive	Oxidizer	Fuel
510204		Barium Chromate	Boron
510395		Teflon	Magnesium
		Barium Chromate	Boron
510561	Ammonium Perchlorate	Ferric Oxide	HTPB
			IDP
			IDPI
510572			Magnesium
			Viton
510575	Ammonium Perchlorate	Ferric Oxide (Anhydrous)	Ammonium Oxalate
			IDPI
			Epon 828
			Polybutadiene/Acrylonitrile Compound
510577	Ammonium Perchlorate	Ferric Oxide (Anhydrous)	Epon 828
			HTPB/Curative
			DOA
510578	Ammonium Perchlorate		IDPI
			Aluminum
			HTPB/Curative
			DOA
Ammonium Perchlorate	Ammonium Perchlorate		IDPI
			N-100
Apex 92 Propellant	Ammonium Perchlorate	Ferric Oxide (Anhydrous)	Ammonium Oxalate
			Polybutadiene/Acrylonitrile Compound
			Epon 828
BKN03 510005		Potassium Nitrate	Laminac
			Boron
Cellulose Nitrate (Nitrocellulose)	Cellulose Nitrate (Nitrocellulose)		

Table 3. Components of Explosive Materials Treated at TSU-1 Included in HHERA

Explosive Material	Reactive	Oxidizer	Fuel
CH-6 (510218)	RDX		Diethyl Adipate
			Ethylacrylate Acrylic Acid
HACN	Hexamine Cobalt Nitrate		
HES (510018)	HMX		Diethyl Adipate
			Ethylacrylate Acrylic Acid
			Polyacrylate
HIPEL	Ammonium Perchlorate	Ferric Oxide (Anhydrous)	HTPB/Curative
Hi-Temp Smokeless Powder	RDX		
HMX 510190	HMX		
HNS 510285	Hexanitrostilbene		
J2X Propellant	Ammonium Perchlorate		Aluminum
			IPDI
			N-100
Mag Teflon (510026)			Magnesium
PBXN-5 (510556)	HMX		Hycar
PE-211		Potassium Perchlorate	Boron
			Viton B
Potassium Perchlorate	Potassium Perchlorate		
RDX	RDX		Polyacrylate
Titanium Powder	Titanium		
Tungsten Delay Mix	Potassium Perchlorate	Barium Chromate	Tungsten
Zirconium	Zirconium		

Table 4. Summary of Waste Solvents and Explosives at TSU-2

[Source: Human Health and Ecological Risk Assessment Work, Plan ToxStrategies, November 25, 2015]

	2005 - 2009	2010 - 2014	2005 - 2014
Sum if individual component >0.1%	99.7%	99.8%	99.4%

Chemical	2005 - 2009 % of total treated	2010 - 2014 % of total treated	2005 - 2014 % of total treated
510172	0.001%	0.002%	0.001%
510532	0.002%	0.002%	0.002%
510556	0.014%	0.016%	0.015%
Acetone	8.187%	68.298%	30.320%
Acetonitrile	11.403%	0.000%	7.205%
Ag2B12H12	0.000%	0.094%	0.035%
AIM-57 510563	0.000%	0.019%	0.007%
BATW	0.068%	0.000%	0.043%
BKN03 510005	0.007%	0.003%	0.005%
Butyl Acetate	0.284%	0.273%	0.280%
DAAB	0.072%	0.000%	0.046%
DAZAB	0.007%	0.000%	0.005%
DCB	0.000%	0.007%	0.003%
DCTNB	0.000%	0.008%	0.003%
Dimethyl -formamide	2.453%	9.868%	5.183%
DNBF	0.030%	0.000%	0.019%
Ethanol	67.032%	8.810%	45.595%
HACN	0.453%	0.002%	0.287%
HMX			
510190	0.023%	0.162%	0.074%
HNS 510285	0.507%	0.229%	0.405%
IPA	3.421%	7.299%	4.849%
KDNBF	0.176%	0.000%	0.111%
KP	0.017%	0.000%	0.011%
Methanol	2.713%	4.660%	3.430%
NaCe	0.140%	0.000%	0.089%
PETN 510193	0.023%	0.140%	0.066%
RDX 510015	0.023%	0.108%	0.054%
Tetrahydrofuran	2.941%	0.000%	1.858%
Totals	100%	100%	100%

Notes

Shaded values are greater than 0.3% of total explosives

**Table III-1.
Hazardous Waste Stored in Containers**

Part A XIV Line No.	EPA Waste Code	Calif. Waste Code	Description of Waste and Physical State	Waste Source	Annual Quantity (lbs)	Storage Location	Container Selection (Table IV-1)	Hazard Class
						Onsite treatment		
1	D001	212	Acetone cont. various explosives (L)	Manufacturing of chemicals/ explosives	2600	TSU-3, Bay D	Line 1	Reactive, Toxic, Ignitable
	D003	214				TSU-2		
	F003	343				TSU-1		
2	D001	212	Acetonitrile cont. various explosives (L)	Manufacturing of chemicals/ explosives	2000	TSU-3, Bay D	Line 1	Reactive, Toxic, Ignitable
	D003	343				TSU-2		
	F003					TSU-1		
3	D001	212	N-butyl alcohol (L)	Chemical & Ordnance Mft.	2000	TSU-3, Bay D	Line 2	Toxic, Ignitable, Irritant
	F003					N/A		
4	D022	211	Chloroform (L)	Chemical maunfacturing	5000	TSU-3, Bay B	Line 3	Toxic
	U044	741				N/A		
5	D001	213	Cyclohexane (L)	Chemical & Ordnance Mft.	2000	TSU-3, Bay D N/A	Line 1	Toxic, Ignitable
6	D003	213	Dinitrotoluene (S)	Chemical & Ordnance Mft.	2000	Magazine storage under 90 days/TSU-3 after treatment	Line 6	Reactive, Toxic, Ignitable
						TSU-1		
7	D001	212	Methanol/ Methanol cont. various explosives (L)	Chemical & Ordnance Mft.	6300	TSU-3, Bay D	Line 1	Reactive, Toxic, Ignitable
	D003	343				TSU-2		
	F003					TSU-1		
8	D035	212	Methyl ethyl ketone (L)	Chemical & Ordnance Mft.	2000	TSU-3, Bay D	Line 1	Toxic, Ignitable
	F005					N/A		
9	D003	214	MEK peroxide (L)	Ordnance Manufacturing	400	Magazine storage under 90 days/TSU-3 after treatment	Line 4	Reactive, Toxic
	U160					TSU-1		
10	F003	212	Methyl iso- butylketone (L)	Chemical & Ordnance Mft.	2000	TSU-3, Bay D N/A	Line 1	Toxic, Ignitable
11	D003	214	Tetrahydro- furan (L)	Chemical & Ordnance Mft.	3300	TSU-3, Bay D	Line 1	Toxic, Ignitable, Irritant
	F001					TSU-2		
12	D001	213	Toluene (L)	Chemical & Ordnance Mft.	4000	TSU-3, Bay D	Line 1	Toxic, Ignitable
	F005					N/A		
13	D003	213	1,3,5 Trinitro- benzene (S)	Ordnance Manufacturing	2000	Magazine storage under 90 days/TSU-3 after treatment	Line 4	Reactive, Toxic
	U234					TSU-1		

**Table III-1.
Hazardous Waste Stored in Containers**

Part A XIV Line No.	EPA Waste Code	Calif. Waste Code	Description of Waste and Physical State	Waste Source	Annual Quantity (lbs)	Storage Location	Container Selection (Table IV-1)	Hazard Class
						Onsite treatment		
29	D001	213 343	N-Butyl acetate (L)	Chemical & Ordnance Mft.	2000	TSU-3, Bay D	Line 1	Reactive, Toxic, Ignitable
	D003					TSU-2		
	D005					TSU-1		
	D007							
	D008							
	F003							
30	D001	213	Cycloheptane (L)	Chemical & Ordnance Mft.	5200	TSU-3, Bay D	Line 1	Ignitable
						N/A		
31	D001	213	Ethyl alcohol (L)	Chemical & Ordnance Mft.	5200	TSU-3, Bay D	Line 3	Ignitable, Reactive
	D003	214				TSU-2		
32	D001	213	Petroleum Hydrocarbon (L)	Chemical & Ordnance Mft.	5200	TSU-3, Bay D	Line 10	Ignitable
		221				N/A		
33	Not listed	343	Polyoxyalkylene (L)	Air Compressor	5200	TSU-3, Bay D	Line 10	Ignitable
						N/A		
34	D001	212 213	Axarel, acetone (L)	Parts cleaning	5200	TSU-3, Bay D	Line 1	Toxic, Ignitable
	D035					N/A		
	F003							
	F005							
35	D001	213	Sedisperse (L)	Parts cleaning	5200	TSU-3, Bay D	Line 1	Ignitable
		343				N/A		
36	D001	213	Off spec. diesel (L)	Contaminated with water	5200	TSU-3, Bay D	Line 1	Ignitable
		343				N/A		
37	D001	213	Heptane/grease (L)	Tube cleaning	5200	TSU-3, Bay D	Line 1	Ignitable
	D008					N/A		
38	D001	213	n-Heptane (L)	Chemical & Ordnance Mft.	6000	TSU-3, Bay D	Line 10	Ignitable
	D008	214				N/A		
39	D001	213	Isopropanol (L)	Chemical & Ordnance Mft.	5200	TSU-3, Bay D	Line 10	Ignitable, Reactive
	D003					TSU-2		
40	D001	213	n-Propyl Alcohol (L)	Chemical & Ordnance Mft.	5200	TSU-3, Bay D	Line 10	Ignitable
						N/A		
41	D001	213	Paint/varnish remover (L)	Chemical & Ordnance Mft.	5200	TSU-3, Bay D	Line 10	Ignitable
						N/A		
42	D001	213	Paint/Thinners (L) (S)	Painting operations	5200	TSU-3, Bay D	Line 11	Ignitable, Toxic
	D006	343						
	D007	352						
	D008	461						
	D035							
	F003							
	F005							

**Table III-1.
Hazardous Waste Stored in Containers**

Part A XIV Line No.	EPA Waste Code	Calif. Waste Code	Description of Waste and Physical State	Waste Source	Annual Quantity (lbs)	Storage Location	Container Selection (Table IV-1)	Hazard Class
						Onsite treatment		
60	D002	122	Potassium hydroxide (S)	Chemical & Ordnance Mft.	50000	TSU-3, Bay A	Line 1	Corrosive
						N/A		
61	D002	122	Sodium hydroxide lye (S)	Chemical & Ordnance Mft.	50000	TSU-3, Bay A	Line 20	Corrosive
						N/A		
62	D002	122	Potassium carbonate (S)	Chemical & Ordnance Mft.	50000	TSU-3, Bay A	Line 1	Corrosive
						N/A		
63	D002	122	Sodium carbonate (S)	Explosives & Ordnance mft.	50000	TSU-3, Bay A	Line 1	Corrosive
						N/A		
64	D002	791**	Sulfuric acid (L)	Explosives & Ordnance mft.	50000	TSU-3, Bay C	Line 21	Corrosive
						N/A		
65	D002	791**	Acid and water (L)	Explosives & Ordnance mft.	50000	TSU-3, Bay C	Line 21	Corrosive
						N/A		
66	D002	122 791**	Alkaline/caustic (L) (S)	Explosives & Ordnance mft.	50000	TSU-3, Bay A	Line 22	Corrosive
						N/A		
67	D002	122 791**	Alkaline/ caustic (L) (S)	Off specification chemicals	50000	TSU-3, Bay A	Line 22	Corrosive
						N/A		
68	D002	791**	Spent acid (L)	Off specification chemicals	50000	TSU-3, Bay C	Line 22	Corrosive
						N/A		
69	D001 D007	343 792	Spent acid (L)	Metal etching	50000	TSU-3, Bay C	Line 22	Corrosive
						N/A		
70	D002 D009	792	Cont. mercury (L) (S)	Cleaning of equipment	500	TSU-3, Bay A	Line 22	Corrosive, Toxic
						N/A		
71	D002	122	Spent caustic (L) (S)	Cleaning of equipment	50000	TSU-3, Bay A	Line 23	Corrosive
						N/A		
72	D003	352	Obsolete or retrograde explosives (S)	Explosives & Ordnance mft.	5000	Magazine storage under 90 days/TSU-3 after treatment	Line 24	Reactive (Explosive)
						TSU-1		
73	D003	352	Benzoyl peroxide (S)	Explosives & Ordnance mft.	5000	Magazine storage under 90 days/TSU-3 after treatment	Line 25	Reactive (Explosive)
						TSU-1		
74	D003	352	Nitrocellulose/ guncotton (S)	Explosives & Ordnance mft.	5000	Magazine storage under 90 days/TSU-3 after treatment	Line 24	Reactive (Explosive)
						TSU-1		
75	D003	352 791**	Picric acid (L)	Explosives & Ordnance mft.	5000	Magazine storage under 90 days/TSU-3 after treatment	Line 26	Reactive (Explosive)
						TSU-1		
76	D003 D008 D011	352	Retrograde/ obsolete ordnance (S)	Explosives & Ordnance mft.	5000	Magazine storage under 90 days/TSU-3 after treatment	Line 24	Reactive (Explosive)
						TSU-1		

**Table III-1.
Hazardous Waste Stored in Containers**

Part A XIV Line No.	EPA Waste Code	Calif. Waste Code	Description of Waste and Physical State	Waste Source	Annual Quantity (lbs)	Storage Location	Container Selection (Table IV-1)	Hazard Class
						Onsite treatment		
94	D003	352	Cellulose cont. with various explosives (S)	Manufacture of ordnance	4000	Accumulation only TSU-1	N/A	Reactive
95	D003	343	Water contam. with explosives (L)	Manufacture of explosives manufacturing	5000	TSU-3, Bay D TSU-2	Line 1	Reactive
96	D003	343	And traces of pyridine, acetone, methanol, acetonitrile, and butyl acetate (L)	Manufacture of explosives	5000	TSU-3, Bay D TSU-2 TSU-1	Line 1	Reactive
97	D003	343	"Safety Bucket Water" water contaminated with explosives (L)	Manufacture of explosives	8000	TSU-3, Bay D TSU-8 TSU-1	Line 1	Reactive
98	D003	343	"Safety Bucket Water" (water contaminated with explosives) residue (S)	Treatment at TSU-8	800	TSU-3, Bay D TSU-1	Line 1	Reactive
99	D008 D011	172 181	Ash and residue from treatment at TSU-1 (S)	Treatment at TSU-1	2000	TSU-3, Bay A or B N/A	Line 1	Toxic
100	D003	172 181 213 214 343 352	Ash and residue from treatment at TSU-2 (L) & (S)	Treatment at TSU-2	500	TSU-3, Bay D TSU-1	Line 1	Reactive, Ignitable

Legend: (L) Liquid
(S) Solid
* Stored in magazines
** CA Restricted Waste

Note 1: Annual quantities are estimates of maximum annual quantity of a particular waste. Wastes generated in a particular year vary according to manufacturing contracts awarded to MSI, and cannot be predicted in advance. In a particular year, wastes generated would be several of the listed wastes, not all the wastes listed. Annual quantity of all wastes is significantly less than the sum of waste quantities in this Table.

Note 2: Storage location includes identification of Bays 1 through 4 at TSU-3

Note 3: N/A--Not applicable (no on-site treatment performed; shipped off-site for treatment and/or disposal).