DOCKETED	
Docket Number:	08-AFC-08A
Project Title:	Hydrogen Energy Center Application for Certification Amendment
TN #:	233603-12
Document Title:	Continuation of Amended AFC Volume III - HECA 12
Description:	*** These documents supersedes TN 65049 which was just the cover letter due to the fact the Amended AFC was too large to docket at the time. *** - Document was on proceeding webpage and is now moved over to the docket log.
Filer:	Raquel Rodriguez
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	6/22/2020 12:59:32 PM
Docketed Date:	6/22/2020

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one Page per material per building or area)

☐ ADD ☐ DELETE ☐ REVISE 2005 Page 12 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
SOUTHEAST OF OFFICE

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # 1

MAP# (optional) 203
1

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
DIESEL

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
DIESEL

EHS* ☐ Yes ☒ No 208

CAS# 209
68476-34-6

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 1000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
500	1000	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds

DAYS ON SITE 222
365

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☒ No 228	229
2 230	231	☐ Yes ☒ No 232	233
3 234	235	☐ Yes ☒ No 236	237
4 238	239	☐ Yes ☒ No 240	241
5 242		☐ Yes ☒ No	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EDCD A, Please Give Hour

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one Page per material per building or area)

☐ ADD ☐ DELETE ☐ REVISE 2005 Page 13 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
SOUTHEAST OF OFFICE

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # 1

MAP# (optional) 203
1

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
DIESEL

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
DIESEL

EHS* ☐ Yes ☒ No 208

CAS# 209
68476-34-6

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 1000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
500	1000	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds

DAYS ON SITE 222
365

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☒ No 228	229
2 230	231	☐ Yes ☒ No 232	233
3 234	235	☐ Yes ☒ No 236	237
4 238	239	☐ Yes ☒ No 240	241
5 242		☐ Yes ☒ No	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EDCD A, Please Give Hour

UPCF (1/99) OES Form 2731

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ADD ☐DELETE ☐REVISE 2005 Page 14 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
SOUTHEAST OF OFFICE

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # 1

MAP# (optional) 203
1

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
DIESEL

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
DIESEL

EHS* ☐ Yes ☒ No 208

CAS# 209
68476-34-6

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 1000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
500	1000	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds

DAYS ON SITE: 222
365

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☒ No 228	229
2 230	231	☐ Yes ☒ No 232	233
3 234	235	☐ Yes ☒ No 236	237
4 238	239	☐ Yes ☒ No 240	241
5 242	243	☐ Yes ☒ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ADD ☐DELETE ☐REVISE 2005 Page 15 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
SOUTH OF BARN

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # 1

MAP# (optional) 203
1

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
GASOLINE

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
GASOLINE

EHS* ☐ Yes ☒ No 208

CAS# 209
N/A

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 500 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
250	500	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds

DAYS ON SITE: 222
365

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 >15 236	TERT-AMYL METHYL ETHER 227	☐ Yes ☒ No 228	994-05-8 229
2 >15 230	ETHER,TERT-BUTYL METHYL 231	☐ Yes ☒ No 232	1634-04-4 233
3 >6 234	TOLUENE 235	☐ Yes ☒ No 236	108-88-3 237
4 8.5<15 238	XYLENE 239	☐ Yes ☒ No 240	1330-20-7 241
5 0.1 - <5% 242	BENZENE 243	☐ Yes ☒ No 244	71-43-2 245

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ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD ☐ DELETE ☐ REVISE 2005 Page 16 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
EAST OF OFFICE

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # 1

MAP# (optional) 203
1

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
PROPANE

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
PROPANE

EHS* ☐ Yes ☒ No 208

CAS# 209
74-98-6

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 1000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☒ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
500	1000	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds.

DAYS ON SITE: 222
365

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☐ a. AMBIENT ☒ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☒ No 228	229
2 230	231	☐ Yes ☒ No 232	233
3 234	235	☐ Yes ☒ No 236	237
4 238	239	☐ Yes ☒ No 240	241
5 242	243	☐ Yes ☒ No 244	245

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ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ ADD ☐ DELETE ☐ REVISE 2005 Page 17 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
NORTH OF HOUSE

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # 1

MAP# (optional) 203
1

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
PROPANE

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
PROPANE

EHS* ☐ Yes ☒ No 208

CAS# 209
74-98-6

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 1000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☒ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
500	1000	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds.

DAYS ON SITE: 222
365

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ e. PLASTIC/NONMETALLIC DRUM ☐ i. FIBER DRUM ☐ m. GLASS BOTTLE ☐ q. RAIL CAR
☐ b. UNDERGROUND TANK ☐ f. CAN ☐ j. BAG ☐ n. PLASTIC BOTTLE ☐ r. OTHER
☐ c. TANK INSIDE BUILDING ☐ g. CARBOY ☐ k. BOX ☐ o. TOTE BIN
☐ d. STEEL DRUM ☐ h. SILO ☐ l. CYLINDER ☐ p. TANK WAGON

STORAGE PRESSURE 224 ☐ a. AMBIENT ☒ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225 ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☒ No 228	229
2 230	231	☐ Yes ☒ No 232	233
3 234	235	☐ Yes ☒ No 236	237
4 238	239	☐ Yes ☒ No 240	241
5 242	243	☐ Yes ☒ No 244	245

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ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

UNIFIED PROGRAM CONSOLIDATED FORM

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS INVENTORY - CHEMICAL DESCRIPTION

(one page per material per building or area)

☐ADD ☐DELETE ☐REVISE 2005 Page 18 of 18

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3
CAUZZA BROTHERS

CHEMICAL LOCATION 201
LABOR CAMP (APPROX. ¼ MILE WEST OISHOP AREA)

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # | MAP# (optional) 203 | GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
PROPANE

TRADE SECRET ☐ Yes ☒ No 206
CAR

COMMON NAME 207
PROPANE

EHS* ☐ Yes ☒ No 208

CAS# 209
74-98-6

*If EHS is "Yes", all amounts below must be in lbs.

FIRE CODE HAZARD CLASSES (Complete if required by CUPA) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211
RADIOACTIVE ☐ Yes ☒ No 212
CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214
LARGEST CONTAINER 1000 215

FED HAZARD CATEGORIES (Check all that apply) ☒ a. FIRE ☐ b. REACTIVE ☒ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
500	1000	0	

UNITS* (Check one item only) ☒ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds
DAYS ON SITE 222
365

STORAGE CONTAINER
☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER 223

STORAGE PRESSURE ☐ a. AMBIENT ☒ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT 224

STORAGE TEMPERATURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC 225

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☒ No 228	229
2 230	231	☐ Yes ☒ No 232	233
3 234	235	☐ Yes ☒ No 236	237
4 238	239	☐ Yes ☒ No 240	241
5 242	243	☐ Yes ☒ No 244	245

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ADDITIONAL LOCALLY COLLECTED INFORMATION 246

IF EPCRA, Please Sign Here

UPCF (1/99) OES Form 2731

+ CAUZZA BROS FARMING-PALM RANCH ========== SiteID: 015-010-001398 +
+= Hazmat Inventory ========== Fixed Containers at Site +
+== Alphabetical Order ========== Scope: All Materials +

Hazmat Common Name...	SpecHaz	EPA Hazards	Frm	DailyMax	Unit	MCP
ACETYLENE	E	F P R IH	G	550.00	FT3	Hi
DIESEL		F IH	L	2500.00	GAL	Low
DIESEL		F IH	L	5000.00	GAL	Low
DIESEL		F IH	L	5000.00	GAL	Low
DIESEL		F IH	L	10000.00	GAL	Low
OXYGEN		P IH	G	550.00	FT3	Low
PROPANE	E	F P IH	L	1000.00	GAL	Ext
PROPANE	E	F P IH	L	500.00	GAL	Ext
PROPANE	E	F P IH	L	500.00	GAL	Ext
WASTE OIL		F IH	L	500.00	GAL	Low

General Information 873-0430

Location: 7361 ADOHR RD Map: 120 Hazard: Unrated
Community: BUTTONWILLOW/TUPMAN-STA 25 Grid: 9 : 1 AOV: 0.0

Contact Name	Title	Business Phone	24-Hour Phone
DAVID HERREN	Dist	(805) ~~324-5555~~ x	(805) 764-6324
JOHN L. BANDUCCI	Dist	(805) ~~327-4633~~ x	(805) 393-6757

Administrative Data

Mail Addrs: PO BX 2656 D&B Number:
City: BAKERSFIELD State: CA Zip: 93303-
Comm Code: 015-250 BUTTONWILLOW/TUPMAN-STA 25 SIC Code: 723

Owner: GOLDEN VALLEY GREEN & FEED INC Phone: (805) 323-8131
Address: PO BX 2656 State: CA
City: BAKERSFIELD Zip: 93303-

Summary

PO Box 96
Bak 933-0

RECEIVED
AUG 9 1993
KCFD HMCU

I, DAVID HERREN (Type or Print Name) Do hereby certify that I have reviewed the attached hazardous m[illegible] management plan for GOLDEN VALLEY GRAIN (Name of Business) along with any corrections, constitutes a complete and correct management plan for my facility.

David Herren 8-6-93
Signature Date

Hazmat Inventory Detail in Reference Number Order

02-001 GUSTAFSON PRO-IZED STD. RED SEED DYE Solid 3120 Moderate
> LBS

CAS #: Trade Secret: Yes

Form: Solid Type: Mixture Days: 365 Use: ADDITIVE

Daily Max LBS	Daily Average LBS	Annual Amount LBS
3,120	1,040.00	3,120.00

Storage	Press	Temp	Location
DRUM/BARREL-NONMETAL	Ambient	Ambient	SEED TREATMENT AREA - S SIDE OF PLANT

Conc	Components	MCP	Guide
50.0%	Acetic Acid, Glacial	Moderate	29
50.0%	RHODAMINE DYE 81-88-9	Unrated	0

02-002 VITAVAX 200 FLOWABLE FUNGICIDE Solid 4800 Low
> LBS

CAS #: 0 Trade Secret: Yes

Form: Solid Type: Pure Days: 365 Use: FUNGICIDE

Daily Max LBS	Daily Average LBS	Annual Amount LBS
4,800	2,000.00	4,800.00

Storage	Press	Temp	Location
PLASTIC CONTAINER	Ambient	Ambient	SEED TREATMENT AREA - S SIDE OF

Conc	Components	MCP	Guide
17.0%	RHODAMINE DYE 81-88-9	Unrated	0
17.0%	Thiram	Low	55

02-003 DIESEL Liquid 500 Low
> Fire, Delay Hlth GAL

CAS #: 68476302 Trade Secret: No

Form: Liquid Type: Pure Days: 365 Use: FUEL

Daily Max GAL	Daily Average GAL	Annual Amount GAL
500	250.00	4,000.00

Storage	Press	Temp	Location
ABOVE GROUND TANK	Ambient	Ambient	W SIDE OF COMPOUND - ALONG FENCE

Conc	Components	MCP	Guide
100.0%	Diesel Fuel No.2	Moderate	27

Hazmat Inventory Detail in Reference Number Order

02-004 GASOLINE — Liquid — 500 GAL — Moderate
> Fire, Delay Hitn

CAS #: 8006619 Trade Secret: No

Form: Liquid Type: Pure Days: 365 Use: FUEL

Daily Max GAL	Daily Average GAL	Annual Amount GAL
500	250.00	2,500.00

Storage	Press	Temp	Location
ABOVE GROUND TANK	Ambient	Ambient	W SIDE OF COMPOUND - ALONG FENCE

Conc	Components	MCP	Guide
100.0%	Gasoline	Moderate	27

02-005 PROPANE — Liquid — 2500 GAL — High
> Fire, Pressure

CAS #: 74986 Trade Secret: No

Form: Liquid Type: Pure Days: 365 Use: FUEL

Daily Max GAL	Daily Average GAL	Annual Amount GAL
2,500	700.00	4,000.00

Storage	Press	Temp	Location
FIXED PRESS. CYLINDER	Above	Ambient	W SIDE OF COMPOUND ALONG FENCE

Conc	Components	MCP	Guide
100.0%	Propane	Extreme	22

SECTION 9: EXPLAIN WHAT PRIVATE FIRE PROTECTION SYSTEMS ARE IN PLACE THAT MAY ASSIST EMERGENCY RESPONDERS.

NONE

SECTION 10: LIST THE LOCATION OF ANY WATER SUPPLIES THAT MAY BE USED BY EMERGENCY RESPONDERS.

Water Outlet - North Side of Plant at Above ground unloading area - Presently 1 1/2" rubber hose

Tailwater Canal - Northeast of Plant - Area also includes 1 1/2" Riser for water distribution

I, John L. Banducci, certify that the information submitted on all the business plan forms is accurate and complete. I understand that this information will be used to fulfill my obligations under California Health and Safety Code Division 20 Chapter 6.95 et seq. and Title 42 U.S.G.C. Section 1100 et seq. and false information may be punishable by fine, imprisonment, or both.

Signature | Corporate Secretary (Title) | 7/15/91 (Date)

Results of 2009 Review of
Kern County Environmental Health Services
Department Records

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
STEVE McCALLEY, R.E.H.S., Director
2700 "M" STREET, SUITE 300
BAKERSFIELD, CA 93301-2370
Voice: (661) 862-8700
Fax: (661) 862-8701
TTY Relay: (800) 735-2929
e-mail: eh@co.kern.ca.us

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community and Economic Development Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

April 19, 2005

Mr. Ken Nelson Jr., Owner
Port Organic Products LTD
P O Box 5203
Buttonwillow, California 93388

SUBJECT: INSPECTION REPORT, REPORT OF VIOLATIONS AND ORDER TO CORRECT FOR PORT ORGANIC PRODUCTS LTD, 7361 ADHOR ROAD, BUTTONWILLOW, CALIFORNIA

Dear Mr. Nelson:

On April 12, 2005, representatives of the Kern County Environmental Health Services Department conducted inspections at Port Organic Products LTD, located at 7361 Adhor Road in Buttonwillow, California. The following inspection report details the observations noted during that inspection. Violations of the California Health and Safety Code (HSC) and the California Code of Regulations (CCR) [Title 22] that were observed during those inspections and the corrective actions necessary to gain compliance are detailed in the attached Inspection Report.

The issuance of this Report of Violations and Order To Correct does not preclude Kern County Environmental Health Services, Hazardous Materials Management Program from taking administrative, civil or criminal action as a result of the violations noted herein. If you have any questions, you may contact me at (661) 862-8757 or Joe Canas at (661) 862-8756. Thank you for your cooperation in this matter.

Sincerely,

Steve McCalley, Director

By: Dan Starkey, R.E.H.S.
Hazardous Materials Specialist III
Unified Hazardous Materials/Waste Program

DS:
ds/PortOrganicsProductsLTD.Cover.Ltr.4.19.05.doc

INSPECTION REPORT

Dates:	April 12, 2005
Facility Name:	Port Organic Products LTD
Facility Address:	7361 Adhor Road, Buttonwillow
Haz Mat Specialists:	Dan STARKEY / Donna FENTON
EPA ID #:	None
Facility I.D. #:	(NEW) FA0005811/ Seed 1074
	Inspection photographs

At approximately 0830 on April 12, 2005, Donna FENTON, and I, met with Jim ZABEN, General Manager of Port Organic Products LTD. Ken NELSON Jr. the owner was scheduled to meet with us but failed to make the appointment. We asked ZABEN for permission to complete an inspection and take photographs. I asked if Port had filed a Business Plan with our Department. ZABEN stated that the business had been at this location for ten years and to his knowledge has never had a business plan. ZABEN gave permission for the inspection. We asked ZABEN to describe his business. He stated that they blend and provide organic fertilizers to their customers.

The inspection started in the tank farm area. I asked FENTON to photograph the facility as we completed the inspection. There were numerous tanks of varying sizes, some were located inside the concrete secondary containment. I noted the secondary containment structure in poor condition. It was in a deteriorating condition and the leaking tanks and chemically etched concrete provided evidence that previous releases had occurred. The aboveground poly tanks contained: Phosphoric Acid, Sulfuric Acid, Aqua Ammonia 20%, Potash, blended fertilizers, and fish liquids. There is processing equipment that consists of mixing tanks, pumps and blending equipment. During the inspection of the tank farm we observed numerous violations. It was evident that the facility should have filed a Business Plan and CalARP with our Department. I advised ZABEN that the amount of chemicals stored exceeded the threshold quantity for both the Business Plan and CalARP regulations. We observed that all tanks lacked labels identifying the chemical contents. I explained to ZABEN the hazards of not knowing what chemicals are in specific tanks. One tank used to store aqua ammonia 20% was labeled "Fire Water". I informed ZABEN that if the aqua ammonia tank was used as fire water by fireman there could be serious consequences. While walking through the tank farm area FENTON, ZABEN and I were exposed to low levels of ammonia gas from the aqua ammonia storage tanks.

We asked about the material dumped in the soil east of the tank farm. ZABEN stated that the dirt area is the location where solid waste residue collected from the batch processing of fertilizer has been dumped. We advised that the waste could be hazardous and asked if they had analytical information for the waste. ZABEN stated that he had analyzed for the constituents of nitrogen, phosphorus & potassium (NPK) and based on that information some farmers have used the waste as fertilizer. I advised that the solid material looks like a waste and appears to be treated as a waste by being dumped on the ground adjacent to a canal. I informed ZABEN that he is required to test the waste material to determine if it is a hazardous waste.

We then inspected the covered warehouse located west of the tank farm which contained numerous pallets of potash, pallets of bat/bird guano, solid fish parts, totes containing fish liquid, diesel fuel, and 55 gallon drums. There are numerous totes around the warehouse some contained fish liquid, and others were empty. There were empty drums, poly tanks, and totes in deteriorated condition. ZABEN stated that he was trying to get the manufacture to take the totes back, and dispose of the damaged tanks and totes. Waste oil was found in two locations in the yard. It was stored in open unlabeled drums that had been cut in half.

I completed the inspection forms and discussed the violations with ZABEN. I informed him that there were serious violations observed during the inspection and that this Department would be seeking fines through the administrative process.

REPORT OF VIOLATIONS

1. The Respondent violated Health and Safety Code (HSC) Chapter 6.95, Section 25503.5 (a) Failure to file a Hazardous Materials Business Plan with this Department.

   (a) Any business that handles a hazardous material or a mixture containing a hazardous material that has a quantity at any one time during the reporting year equal to, or greater than, a total weight of 500 pounds, or a total volume of 55 gallons, or 200 cubic feet at standard temperature and pressure for compressed gas, that is handled in quantities for which an emergency plan is required to be adopted pursuant to Part 30 (commencing with Section 30.1), Part 40 (commencing with Section 40.1), or Part 70 (commencing with Section 70.1), of Chapter 10 of Title 10 of the Code of Federal Regulations (54 Federal Register 14051), or pursuant to any regulations adopted by the state in accordance with those regulations, shall establish and implement a business plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to Section 25503.

   Port Organic Products LTD has stored and processed chemicals at the 7361 Adhor Road facility for 10 years. They failed to file a Hazardous Materials Business Plan for the hazardous materials stored at this facility.

2. The Respondent violated California Code of Regulations (CCR) Title 19, Section 2745.1 (a) (d) failure to file a California Accidental Release Prevention Program (CalARP) Risk Management Plan (RMP).

Facilities shall be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

The chemical storage tanks used at the facility are not labeled properly. A 6000-gallon poly aqua ammonia (20%) tank is labeled "Fire Water". All tanks lack labels identifying the chemical contents. This violation poses a significant risk to human health and the possibility of mixing incompatible chemicals.

CORRECTIVE ACTIONS

1. Complete a hazardous materials business plan as specified in HSC section 25504 within 14 days of receipt of inspection report dated April 12, 2005.

2. All tanks and containers must be labeled. Tanks are required to be labeled with minimum four inch lettering in a contrasting color placed on opposite sides of the tanks. This requirement shall be completed immediately.

3. The CalARP Risk Management Plan (RMP) registration form shall be submitted within 14 days of receipt of the inspection report dated April 12, 2005.

4. The CalARP (RMP) document must be submitted within 90 days of receipt of this Notice of Violation. The RMP Submit format must be used. This requires a hard copy and data disk be submitted to this Department only. All Program 2 prevention documentation shall be included at that time.

5. Properly label, handle and dispose of all hazardous waste stored at 7361 Adhor Road within 14 days.

6. Within six (6) months of receipt of this notice, one (1) employee involved in the management of hazardous waste must attend California Compliance School training for hazardous waste generators. The completion certificates must be provided to this Department by November 1, 2005.

cc: File

(a) The owner or operator of a stationary source, which handles more than a threshold quantity of a regulated substance in a process, shall determine the applicability of this chapter as set forth in Section 2735.4(a) and shall submit a single RMP to the AA. The RMP shall include the information required by Sections 2745.3 through 2745.9.

(b) If a determination is made pursuant to section 2735.4 (a)(2) that an existing stationary source must comply with this chapter, the owner or operator shall submit an RMP to the AA after the owner or operator has received a notice from the AA requesting submission of an RMP. The AA shall, in consultation with the owner or operator of a stationary source, establish an RMP submittal date. The AA shall not require submission of the RMP earlier than 12 months or later than 3 years after the notice has been issued to the owner or operator

This Department set the CalARP Risk Management Plan submittal deadline for all Table 3 Threshold Quantity facilities as January 31, 2002. Port Organic Products failed to register with this Department and submit a CalARP, Risk Management Plan.

3. Respondent violated CCR, Title 19, Division 4, Chapter 4, Article 4, Section 2732, Failure to properly train employees on how to handle hazardous materials.

a) The business plan shall include a training program which is reasonable and appropriate for the size of the business and the nature of the hazardous materials handled. The training program shall take into consideration the responsibilities of the employees to be trained. The training program shall, at a minimum, include:

1) methods for safe handling of hazardous materials;
2) procedures for coordination with local emergency response organizations;
3) use of emergency response equipment and supplies under the control of the handler, and
4) all procedures required by Section 2731 of this Article

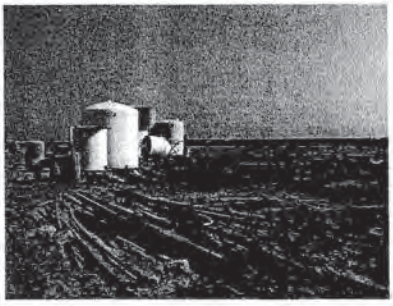
b) The business plan shall include provisions for ensuring that appropriate personnel receive initial and refresher training.

Port Organics Products LTD employees have not been trained how to recognize and handle hazardous materials as evidenced by discussions with Jim Zaben, General Manager.

4. The Respondent violated 22 CCR Section 66265.31, Failure to operate a facility to minimize the possibility of the release of hazardous waste to the environment which could threaten human health.



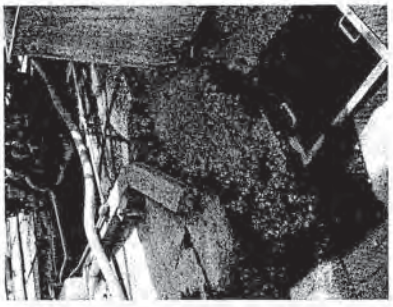
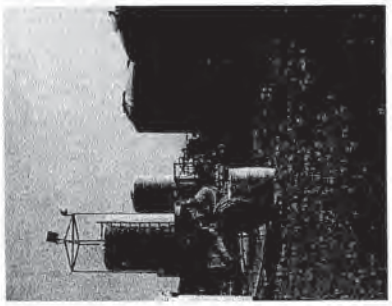


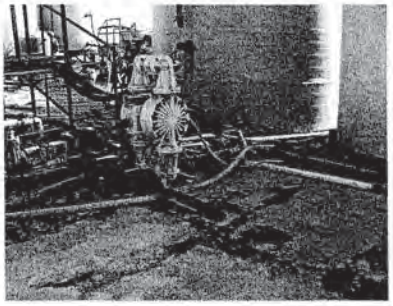



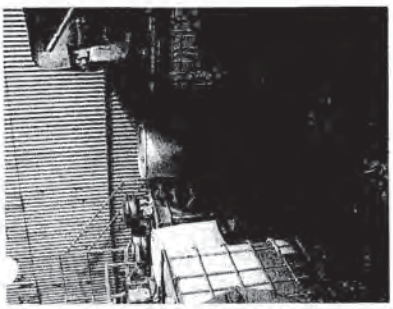


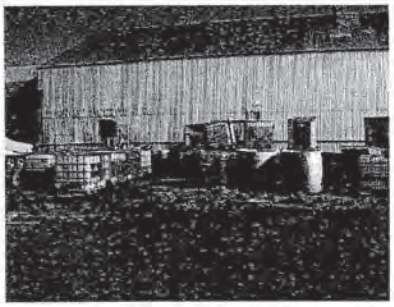























#1074

ENVIRONMENTAL HEALTH SER CES DEPARTMENT
STEVE McCALLEY, R.E.H.S., Director
2700 'M' STREET, SUITE 300
BAKERSFIELD, CA 93301-2370
Voice: (661) 862-8700
Fax: (661) 862-8701
TTY Relay: (800) 735-2929
e-mail: ehi@co.kern.ca.us

RE. JURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community and Economic Development Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

December 7, 2005

Mr. Ken Nelson Jr., Owner
Port Organic Products LTD
P O Box 5203
Bakersfield, California 93388

RE: Port Organic Products LTD Settlement Agreement

Dear Mr. Nelson:

This Department has completed the evaluation of all factors associated with the settlement of the administrative enforcement action being considered. Included with this correspondence is a settlement agreement entitled "Consent Order" which was previously discussed.

You have been provided with two signed Consent Order documents. One document is to be counter signed and mailed back to this office with the agreed settlement amount of $ 7,250. The other document is your copy.

If you have any questions please contact me at (661) 862-8756.

Sincerely,

Steve McCalley, Director

By: Joe Canas, REHS
Hazardous Materials Specialist IV
Hazardous Materials Management Program

DS:

da/PortOrganicProductsLTD.Consent.cover.ltr 11.28.05

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
HAZARDOUS MATERIALS MANAGEMENT PROGRAM

CERTIFIED UNIFIED PROGRAM AGENCY (CUPA)

In the Matter of:	) Docket No. DS00009/10-11) Facility ID No. FA0005811
Port Organic Products LTD 7361 Adhor Road Buttonwillow, CA 93206	))))
Respondent	) Health and Safety Code) Section 25187)

The Kern County Environmental Health Services Department, Certified Unified Program Agency (Agency) and Port Organic Products LTD (Respondent) enter into this Consent Order (Order) and agree as follows:

1. Respondent operated a business that lacked a Hazardous Materials Business Plan (HMBP) and California Accidental Release Prevention Program (CalARP), Risk Management Plan for the Port Organic Products, LTD facility located at 7361 Adhor Road, Buttonwillow, CA.

2. The Agency inspected the Site on April 12, 2005.

4. The Agency provided an Inspection Report and Report of Violations of activities to the Respondent on April 19, 2005.

5. The Agency alleges the following violations:

5.1 Respondent violated Health and Safety Code (HSC) Chapter 6.95, Section 25503.5 (a) in that Respondent failed to complete and submit a HMBP with this Department.

5.2 Respondent violated California Code of Regulations (CCR) Title 19, Section 2745.1 (a) in that Respondent failed to complete and submit a CalARP Risk Management Plan to this Department.

5.4 Respondent violated CCR, Title 19, Division 4, Chapter 4, Article 4, Section 2732 in that Respondent failed to train employees how to handle hazardous materials.

5.5 Respondent violated CCR, Title 22, Section 66265.31 in that Respondent failed to operate a facility to minimize the possibility of a release of hazardous waste to the environment which could threaten human health.

6. Respondent disputes the alleged violations.

7. The parties wish to avoid the expense of litigation and ensure prompt compliance.

8. Jurisdiction exists pursuant to Health and Safety Code (HSC) section 25187.

9. Respondent waives any right to a formal hearing in this matter. Respondent agrees that due process has been provided with respect to this matter.

10. This Consent Order shall constitute full settlement of the violations alleged above but does not limit the Agency from taking appropriate enforcement action concerning other violations.

SCHEDULE FOR COMPLIANCE

11 Respondent shall comply with the following:

11.1 Maintain updated Hazardous Materials Business Plan in accordance with HSC, Section 25503.5. *Business Plan has been submitted and is complete.*

11.2 Maintain current CalARP Risk Management Plan in accordance with CCR, Section 2745.10. *CalARP Risk Management Plan has been submitted and is up to date.*

11.3 Provide proof of completion of the hazardous materials training for management of hazardous materials. *The training must be completed by November 30, 2005. Training was completed prior to November 30, 2005.*

11.4 Submittals: All submittals from Respondent pursuant to this Consent Order shall be sent to:

Mr. Dan Starkey
Kern County Environmental Health Services Department
Certified Unified Program Agency
2700 "M" Street, Suite 300
Bakersfield, CA 93301

11.5 Communications: All communications from Agency shall be communicated to Respondent in writing by the Program Supervisor, of the Kern County Environmental Health Services Department, Certified Unified Program Agency, or his/her designee. No informal advice, guidance, suggestions, or comments by the Agency regarding reports, plans, specifications, schedules, or any other writings by Respondent shall be construed to relieve Respondent of its obligation to obtain such formal approvals as may be required.

11.5 Compliance with Applicable Laws: Respondent shall carry out this Order in compliance with all local, State, and federal requirements, including but not limited to requirements to obtain permits and to assure worker safety.

11.6 Liability: Nothing in this Consent Order shall constitute or be construed as a satisfaction or release from liability for any conditions or claims arising as a result of past, current, or future operations of Respondent, except as provided in this Consent Order. Notwithstanding compliance with the terms of this Consent Order, Respondent may be required to take further actions as are necessary to protect public health or welfare or the environment.

11.7 Government Liabilities: The Kern County Environmental Health Services Department shall not be held liable for injuries or damages to persons or property resulting from acts or omissions by Respondent or related parties specified in paragraph 12.2, in carrying out activities pursuant to this Consent Order, nor shall the County of Kern be held as a party to any contract entered into by Respondent or its agents in carrying out activities pursuant to this Consent Order.

11.8 Extension Requests: If Respondent is unable to perform any activity or submit any document within the time required under this Consent Order, the Respondent may, prior to expiration of the time, request an extension of time in writing. The extension request shall include a justification for the delay.

11.9 Extension Approvals: If the Agency determines that good cause exists for an extension, it will grant the request and specify in writing a new compliance schedule.

PAYMENT

Respondent shall pay the Agency a total of $ 7,250 of which $ 6,100 is penalty, $ 1,150 is reimbursement of this Agency's costs. Payment is due within 30 days from the effective date of this Consent Order. Respondent's check shall be made payable to the Kern County Environmental Health Services Department and shall be delivered to:

Mr. Joe Canas
Kern County Environmental Health Department
2700 "M" Street Suite 300
Bakersfield, CA 93301

If Respondent fails to make payment as provided above, Respondent agrees to pay interest at the rate established pursuant to HSC δ 25360.1 and to pay all costs incurred by the Agency in pursuing collection, including attorney's fees.

OTHER PROVISIONS

12. Additional Enforcement Actions: By agreeing to this Consent Order, the Agency does not waive the right to take further enforcement actions on any other incidents, except to the extent provided in this Consent Order.

12.1 Penalties for Noncompliance: Failure to comply with the terms of this Consent Order may subject Respondent to civil penalties and/or punitive damages for any costs incurred by the Agency or other government agencies as a result of such failure, as provided by HSC section 25188 and other applicable provisions of law.

12.2 Parties Bound: This Consent Order shall apply to and be binding upon Respondent and its officers, directors, agents, receivers, trustees, employees, contractors, consultants, successors, and assignees, including but not limited to individuals, partners, subsidiary and parent corporations, and upon the Agency and any successor Agency that may have responsibility for and jurisdiction over the subject matter of this Consent Order.

12.3 Effective Date: The effective date of this Consent Order is the date it is signed by the Agency.

12.4. Integration: This agreement constitutes the entire agreement between the parties and may not be amended, supplemented, or modified, except as provided in this agreement.

Dated: _____

_____
Signature of Respondent's Representative

_____
Type or Printed Name and Title
Of Respondent's Representative

Dated: 12-6-05

_____
Steve McCalley, Director
Kern County Environmental Health
Services Department

PortOrganicProductsLTD.ConsentOrder.11.28.05

BUSINES OWNER/OPERATOR IDENT ICATION

Kern County Environmental Health Services Department
2700 M Street, Suite 300
Bakersfield, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
FACILITY INFORMATION

Page 1 of 1

☐ NEW BUSINESS ☐ OUT OF BUSINESS ☐ REVISE/UPDATE (EFFECTIVE 12/05/2006)

I. IDENTIFICATION

FACILITY ID#	FA0005811
	1 5 - 0 1 0 - 0 0 1 0 7 4
BEGINNING DATE	02/13/2006
ENDING DATE	02/13/2007
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As)	PORT ORGANIC PRODUCTS LTD
BUSINESS PHONE	(661) 764-9670
BUSINESS SITE ADDRESS	7361 ADHOR RD
CITY	BUTTONWILLOW
	CA
ZIP CODE	93206
DUN & BRADSTREET	
SIC CODE (4 digit #)	2873
COUNTY	Kern County
BUSINESS OPERATOR NAME	SHINAULT BAKER AND CO CPAs
BUSINESS OPERATOR PHONE	

II. BUSINESS OWNER

OWNER NAME	PORT ORGANIC PRODUCTS LTD
OWNER PHONE	(661) 764-9670
OWNER MAILING ADDRESS	5060 CALIFORNIA AVE STE 650
CITY	BAKERSFIELD
STATE	CA
ZIP CODE	93206

III. ENVIRONMENTAL CONTACT

CONTACT NAME	Jim Zaben
CONTACT PHONE	(661) 764-9670
CONTACT MAILING ADDRESS	7361 Adohr Rd.
CITY	Buttonwillow
STATE	CA
ZIP CODE	93206

IV. EMERGENCY CONTACTS

	-PRIMARY-	-SECONDARY-
NAME	Kenneth N. Nelson Jr.	Jim Zaben
TITLE	Owner	General Manager
BUSINESS PHONE	(661) 764-9670	(661) 764-9670
24-HOUR PHONE	(661) 667-3460	(661) 201-9598
PAGER #	() -	() -

ADDITIONAL LOCALLY COLLECTED INFORMATION: APN: 15904018

Environmental Contact E-Mail Address: jzaben@bak.rr.com

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE 12/05/2006	NAME OF DOCUMENT PREPARER
NAME OF SIGNER (print) James Zaben	TITLE OF SIGNER	

Penalty Calculations

Facility Port Organic Products LTD Docket No. DS 0009/7-05 PCA __ Case Code __ WP__ MPC__ Page 1 of 1 Date of Inspection 04-12-05

#	Citation	Violation	Potential for Harm	Extent of Deviation	# of Times Violation Occurred	Statutory Maximum	Initial Penalty	Intent Factor	Economic Benefit	Multi-day	Base Penalty	Coop-eration	Prophylactic	Compliance	Final Payment
1	H&SC Sec. 25503.5 (a)	Failure to file a HMBP	Major	Major	10 years	$2,000/ day	$ 2,000	NA	$ 5,000	$2,400 *	$9,400	- $ 2,350	NA	- $ 2500	$ 4,500
2	T19 [illegible]c. [illegible]45.1 (a) (d)	Failure to file a CalARP RMP	Major	Major	5 years	$ 2,000/ day	$ 2,000	NA	$850	$2,400 *	$5,250	-$ 1,320	NA	- $ 380	$ 3,520
					Continues	$4,000	$ 2,000	NA	$ 5,850	$ 4,800	$ 14,650	- $ 3,670	NA	NA	$ 8,020
													Sub Total Violations		**$ 8,020**

*** Multiday calculated at 2% of $ 2,000 X 60 days**

Departmental Costs +$ 1,150
Compliance School Costs - $ 2,000

TOTAL SETTLEMENT AMOUNT $ 7,250

DS:
H:ds/AEO\PortOrganics.11.28.05.HM73

BUSINES OWNER/OPERATOR IDENT ICATION

Kern County Environmental Health Services Department
2700 M Street, Suite 300
Bakersfield, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
FACILITY INFORMATION

☐ NEW BUSINESS ☐ OUT OF BUSINESS ☐ REVISE/UPDATE (EFFECTIVE 02/13/2007) Page 1 of 1

I. IDENTIFICATION

FACILITY ID# FA0005811	1 5 - 0 1 0 - 0 0 1 0 7 4	BEGINNING DATE 100: 02/13/2006	ENDING DATE 101: 02/13/2007
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3: PORT ORGANIC PRODUCTS LTD			BUSINESS PHONE 102: (661) 764-9670
BUSINESS SITE ADDRESS 103: 7361 ADHOR RD			
CITY 104: BUTTONWILLOW	CA		ZIP CODE 105: 93206
DUN & BRADSTREET 106:			SIC CODE (4 digit #) 107: 2873
COUNTY 108: Kern County			
BUSINESS OPERATOR NAME 109: SHINAULT BAKER AND CO CPAs			BUSINESS OPERATOR PHONE 110:

II. BUSINESS OWNER

OWNER NAME 111: PORT ORGANIC PRODUCTS LTD		OWNER PHONE 112: (661) 764-9670
OWNER MAILING ADDRESS 113: 5060 CALIFORNIA AVE STE 650		
CITY 114: BAKERSFIELD	STATE 115: CA	ZIP CODE 116: 93206

III. ENVIRONMENTAL CONTACT

CONTACT NAME 117: Jim Zaben		CONTACT PHONE 118: (661) 764-9670
CONTACT MAILING ADDRESS 119: 7361 Adohr Rd.		
CITY 120: Buttonwillow	STATE 121: CA	ZIP CODE 122: 93206

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME 123: Kenneth N. Nelson Jr.	NAME 128: Jim Zaben
TITLE 124: Owner	TITLE 129: General Manager
BUSINESS PHONE 125: (661) 764-9670	BUSINESS PHONE 130: (661) 764-9670
24-HOUR PHONE 126: (661) 667-3460	24-HOUR PHONE 131: (661) 201-9598
PAGER # 127: () -	PAGER # 132: () -

ADDITIONAL LOCALLY COLLECTED INFORMATION: 133
APN: 15904018
Environmental Contact E-Mail Address: jzaben@bak.rr.com

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTAT: *Electronic Signature*	DATE 134: 02/13/2007	NAME OF DOCUMENT PREPARER 135:
NAME OF SIGNER (print) 136: James Zaben	TITLE OF SIGNER 137:	

BUSINES OWNER/OPERATOR IDENT ICATION

Kern County Environmental Health Services Department
2700 M Street, Suite 300
Bakersfield, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
FACILITY INFORMATION

☐ NEW BUSINESS ☐ OUT OF BUSINES ☐ REVISE/UPDATE (EFFECTIVE 03/17/2006) Page 1 of 1

I. IDENTIFICATION

FACILITY ID# FA0005811	1 5 - 0 1 0 - 0 0 1 0 7 4	BEGINNING DATE 100: 02/13/2006	ENDING DATE 101: 02/13/2007
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3: PORT ORGANIC PRODUCTS LTD			BUSINESS PHONE 102: (661) 764-9670
BUSINESS SITE ADDRESS 103: 7361 ADHOR RD			
CITY 104: BUTTONWILLOW	CA		ZIP CODE 105: 93206
DUN & BRADSTREET 106:			SIC CODE (4 digit #) 107: 2873
COUNTY 108: Kern County			
BUSINESS OPERATOR NAME 109: SHINAULT BAKER AND CO CPAs			BUSINESS OPERATOR PHONE 110:

II. BUSINESS OWNER

OWNER NAME 111: PORT ORGANIC PRODUCTS LTD		OWNER PHONE 112: (661) 764-9670
OWNER MAILING ADDRESS 113: 5060 CALIFORNIA AVE STE 650		
CITY 114: BAKERSFIELD	STATE 115: CA	ZIP CODE 116: 93206

III. ENVIRONMENTAL CONTACT

CONTACT NAME 117: Jim Zaben		CONTACT PHONE 118: (661) 764-9670
CONTACT MAILING ADDRESS 119: 7361 Adohr Rd.		
CITY 120: Buttonwillow	STATE 121: CA	ZIP CODE 122: 93206

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME 123: Kenneth N. Nelson Jr.	NAME 128: Jim Zaben
TITLE 124: Owner	TITLE 129: General Manager
BUSINESS PHONE 125: (661) 764-9670	BUSINESS PHONE 130: (661) 764-9670
24-HOUR PHONE 126: (661) 667-3460	24-HOUR PHONE 131: (661) 201-9598
PAGER # 127: () -	PAGER # 132: () -

ADDITIONAL LOCALLY COLLECTED INFORMATION: 133
APN: 15904018
Environmental Contact E-Mail Address: jzaben@bak.rr.com

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTAT: *Electronic Signature*	DATE 134: 03/17/2006	NAME OF DOCUMENT PREPARER 135:
NAME OF SIGNER (print) 136: James Zaben	TITLE OF SIGNER 137:	

BUSINESS ACTIVITIES

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
FACILITY INFORMATION

Page 1 of

I. FACILITY IDENTIFICATION

FACILITY ID # FA 0005811 (1) EPA ID # (Hazardous Waste Only) (2)

BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) (3)
Port Organic Products, LTD

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page (KC Form 2730).

Does your facility....		If Yes, please complete these pages of the UPCF....
A. HAZARDOUS MATERIALS		
Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	☒ YES ☐ NO 4	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (KC Form 2731) CONSOLIDATED CONTINGENCY PLAN (KC Form 2733) SITE MAP (KC Form 2734)
B. UNDERGROUND STORAGE TANKS (USTs)		
1. Own or operate underground storage tanks?	☐ YES ☒ NO 5	UST FACILITY (KC Form A) UST TANK (one page per tank) (KC Form B)
2. Intend to upgrade existing or install new USTs?	☐ YES ☒ NO 6	UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (KC Form C)
3. Need to report closing a UST?	☐ YES ☒ NO 7	UST TANK (closure portion –one page per tank)
C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs)		
Own or operate ASTs above a total capacity for the facility of greater than 1,320 gallons?	☐ YES ☒ NO 8	NO FORM REQUIRED TO KCEHSD
D. HAZARDOUS WASTE		
1. Generate hazardous waste?	☐ YES ☒ NO 9	EPA ID NUMBER – provide at the top of this page WASTE GENERATOR FORM (KC Form 2733)
2. Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	☐ YES ☒ NO 10	RECYCLABLE MATERIALS REPORT (one per recycler) (KC Form 2732)
3. Treat hazardous waste on site?	☐ YES ☒ NO 11	ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (KC Form 1772f) ONSITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit) (KC Form 1772u)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	☐ YES ☒ NO 12	CERTIFICATION OF FINANCIAL ASSURANCE (KC Form 1232)
5. Consolidate hazardous waste generated at a remote site?	☐ YES ☒ NO 13	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION (KC Form 1196)
6. Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	☐ YES ☒ NO 14	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (KC Form 1249)
E. LOCAL REQUIREMENTS		(15)
Have Regulated Substances (RS) stored on site at greater than the threshold quantities established by the California Accidental Release Program (Cal ARP)? A RS is any substance listed in Section 2770.5 of CCR Title 19, Division 2, Chapter 4.5.	☒ YES ☐ NO 15	REGULATED SUBSTANCES REGISTRATION (KC Form 2736) RISK MANAGEMENT PLAN (when required)

BUSINESS OWNER/OPERATOR IDENTIFICATION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
FACILITY INFORMATION

☐ NEW BUSINESS ☐ OUT OF BUSINESS ☐ REVISE/UPDATE (EFFECTIVE / /) Page ___ of ___

I. IDENTIFICATION

FACILITY ID# FA 0005811 (1) BEGINNING DATE (100) ENDING DATE (101)

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) (3)
Port Organic Products LTD
BUSINESS PHONE (102)
661-764-9670

BUSINESS SITE ADDRESS (103)
7361 Adohr Rd.

CITY (104) Buttonwillow | CA | ZIP CODE (105) 93206

DUN & BRADSTREET (106) | SIC CODE (4 digit #) (107) 2873

COUNTY (108)
Kern County

BUSINESS OPERATOR NAME (109) | BUSINESS OPERATOR PHONE (110)

II. BUSINESS OWNER

OWNER NAME (111) Ken Nelson, Jr | OWNER PHONE (112) 661-764-9670

OWNER MAILING ADDRESS (113)
PO Box 5203

CITY (114) Bakersfield | STATE (115) CA | ZIP CODE (116) 93388

III. ENVIRONMENTAL CONTACT

CONTACT NAME (117) Jim Zaben | CONTACT PHONE (118) 661-764-9670

CONTACT MAILING ADDRESS (119)
PO Box 5203

CITY (120) Bakersfield | STATE (121) CA | ZIP CODE (122) 93388

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME (123) Ken Nelson, Jr.	NAME (128) Jim Zaben
TITLE (124) Owner	TITLE (129) General Manager
BUSINESS PHONE (125) 661-764-9670	BUSINESS PHONE (130) 661-764-9670
24-HOUR PHONE (126) 661-607-3460	24-HOUR PHONE (131) 661-201-9598
PAGER # (127) —	PAGER # (132) —

ADDITIONAL LOCALLY COLLECTED INFORMATION: (133)
APN: ___-___-___-___-___

Environmental Contact E-Mail Address: jzaben@bak.rr.com

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE	DATE (134)	NAME OF DOCUMENT PREPARER (135)
Jim Zaben	4-16-05	Jim Zaben
NAME OF SIGNER (print) (136) Jim Zaben	TITLE OF SIGNER (137) General Manager	

CONSOLIDATED CONTINGENCY PLAN

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Form
COVER PAGE

Page ___ of ___

I. FACILITY IDENTIFICATION

FACILITY ID # FA 0005811 (1) EPA ID # (Hazardous Waste Only) (2)

BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) (3)
Port Organic Products LTD

The Consolidated Contingency Plan provides businesses a format to comply with the emergency planning requirements of the following two written hazardous materials emergency response plans required in California:

- ◁ Hazardous Materials Business Plan (HSC Chapter 6.95 Section 25504 (b) and 19 CCR Sections 2729-2732),
- ◁ Hazardous Waste Generator Contingency Plan (22 CCR Section 66264.52), and,

This format is designed to reduce duplication in the preparation and use of emergency response plans at the same facility, and to improve the coordination between facility response personnel and local, state and federal emergency responders during an emergency.

A copy of the plan shall be submitted to this Department and at least one copy of the plan shall be maintained at the facility for use in the event of an emergency and for inspection by the local agency. Describe below where a copy of your Contingency Plan, including the hazardous material inventories, Training Records, and Site Map(s), are located at your business:

PLAN CERTIFICATION

I certify under penalty of law that I have personally examined and I am familiar with the information provided by this plan and to the best of my knowledge the information is accurate, complete, and true.

Printed Name of Owner/ Operator	Title of Owner/Operator
Signature of Owner/ Operator	Date

We appreciate the effort of local businesses in completing these plans and are available to assist in any manner. If you have any questions, please contact this Department at (661) 862-8700.

B. Emergency Medical Facility

List the closest emergency medical facility that will be used by your business in the event of an accident of injury caused by a release or threatened release of a hazardous material

HOSPITAL/CLINIC: Southwest Urgent Care — PHONE NO: (661) 322 2273

ADDRESS: 6401 Truxtun Avenue

CITY: Bakersfield — ZIP CODE: 93309

C. Private Emergency Response

DOES YOUR BUSINESS HAVE A PRIVATE ON-SITE EMERGENCY RESPONSE TEAM? ☐ Yes ☒ No

If yes, provide an attachment that describes what policies and procedures your business will follow to notify your on-site emergency response team in the event of a release or threatened release of hazardous materials.

CLEANUP/DISPOSAL CONTRACTOR

List the contractor that will provide cleanup services in the event of a release.

NAME OF CONTRACTOR: — PHONE NO:

ADDRESS:

CITY: — ZIP CODE:

D. Arrangements with Emergency Responders

If you have made special (i.e. contractual) arrangements with any police department, fire department, hospital, contractor, or State or local emergency response team to coordinate emergency services, describe those arrangements in the space below:

E. Evacuation Plan

1. The following alarm signal(s) will be used to begin evacuation of the facility *(check all which apply)*:

☒ Verbal ☐ Telephone *(including cellular)* ☐ Alarm System ☐ Public Address System ☐ Intercom
☐ Pagers ☐ Portable Radio ☐ Other *(specify)*: Two-way radio - Nextel

2. ☐ Evacuation map is prominently displayed throughout the facility.

3. ☐ Name of individual(s) responsible for coordinating evacuation including spreading the alarm and confirming the business has been evacuated: Jim Zaben

F. Earthquake Vulnerability

Identify areas of the facility where releases could occur or would require immediate inspection or isolation because of the vulnerability to earthquake related ground motion.

☐ Hazardous Waste/ Hazardous Materials Storage Areas ☐ Production Floor ☐ Process Lines
☐ Bench/ Lab ☐ Waste Treatment ☒ Other: Poly Tanks

Identify mechanical systems where releases could occur or would require immediate inspection or isolation because of the vulnerability to earthquake related ground motion.

☐ Utilities	☐ Sprinkler Systems	☐ Cabinets	☐ Shelves	
☐ Racks	☐ Pressure Vessels	☐ Gas Cylinders	☒ Tanks	
☒ Process Piping	☒ Shutoff Valves	☐ Other:		

IV. Emergency Equipment

22 CCR, Section 66265.52(e) [as referenced by Section 66262.34(a)(3)] requires that emergency equipment at the facility be listed. Completion of the following Emergency Equipment Inventory Table meets this requirement.

EMERGENCY EQUIPMENT INVENTORY TABLE

1. Equipment Category	2. Equipment Type	3. Location	4. Description*
Personal Protective, Equipment, Safety Equipment, and First Aid Equipment	☒ Cartridge Respirators	Office	NIOSH approved full face
	☐ Chemical Monitoring Equipment *(describe)*		
	☐ Chemical Protective Aprons/Coats		
	☒ Chemical Protective Boots	office	Rubber knee High boots
	☒ Chemical Protective Gloves	office	Poly rubber gloves
	☐ Chemical Protective Suits *(describe)*		
	☐ Face Shields		
	☒ First Aid Kits/Stations *(describe)* 2	office	Complete Osha approved
	☐ Hard Hats		
	☐ Plumbed Eye Wash Stations		
	☐ Portable Eye Wash Kits *(i.e. bottle type)*		
	☐ Respirator Cartridges *(describe)*		
	☒ Safety Glasses/Splash Goggles	office	ANSI approved clear & clear
	☐ Safety Showers		
	☐ Self-Contained Breathing Apparatuses (SCBA)		
	☐ Other *(describe)*		
Fire Extinguishing Systems	☐ Automatic Fire Sptinkler Systems		
	☐ Fire Alarm Boxes/Stations		
	☐ Fire Extinguisher Systems *(describe)*		
	☐ Other *(describe)*		
Spill Control Equipment and Decontamination Equipment	☐ Absorbents (describe)		
	☒ Berms/Dikes (describe)	plant	plant is surrounded by dikes
	☐ Decontamination Equipment (describe)		
	☐ Emergency Tanks (describe)		
	☐ Exhaust Hoods		
	☐ Gas Cylinders Leak Repair Kits (describe)		
	☐ Neutralizers (describe)		
	☐ Overpack Drums		
	☐ Sumps (describe)		
	☐ Other (describe)		
Communications and Alarm Systems	☐ Chemical Alarms (describe)		
	☐ Intercoms/ PA Systems		
	☐ Portable Radios		
	☐ Telephones		
	☐ Underground Tank Leak Detection Monitors		
	☒ Other (describe)	each person	Nextel two-way & phone
Additional Equipment (Use Additional Pages if Needed.)			

* *Describe the equipment and its capabilities. If applicable, specify any testing/maintenance procedures/intervals. Attach additional pages, numbered appropriately, if needed.*

SITE MAP

A site plan and storage map must be included with your Contingency Plan. For relatively small facilities, these documents may be combined into one drawing. Since these drawings are intended for use in emergency response situations, larger facilities *(generally those with complex and/or multiple buildings)* should provide an overall site plan and a separate storage map for each building/storage area. A blank Facility Site Map has been provided on the reverse side of this page. You may complete that page or attach any other drawing(s) which contain(s) the information required below. Drawings are to be no larger than 11" x 17". Blue prints are not acceptable.

1. **Site Plan:** This drawing shall contain, at a minimum, the following information:

   a. Site Orientation (north, south, etc.)
   b. Date the map was drawn
   c. Locations of all buildings and other structures
   d. Parking lots and internal roads
   e. Outside hazardous materials storage or use areas
   f. Storm drain, sanitary sewer drain inlets, and dry wells
   g. All wells (water, monitoring of underground tank systems, etc) if applicable
   h. Evacuation routes, emergency exits, and staging/meeting areas
   i. Adjacent property use
   j. Locations and names of adjacent streets and alleys
   k. Entrance and exit points/roads

2. **Storage Map(s):** The map(s) shall contain, at a minimum, the following information:

   a. General purpose of each section/area within each building (*e.g. "Office Area", "Manufacturing Area", etc)*
   b. Location of each hazardous material/waste storage, dispensing, use, or handling area *(e.g. individual underground tanks, aboveground tanks, storage rooms, etc.)*.
   c. Entrances to and exits from each building and hazardous material/waste room/area
   d. Location of each utility emergency shut-off point *(i.e. gas, water, electric)*
   e. Location of each monitoring system control panel *(e.g. underground tank monitoring, toxic gas monitoring, etc)*

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

☐ADD ☐DELETE ☐REVISE 200 Page __ of __

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
PORT ORGANIC PRODUCTS LTD

CHEMICAL LOCATION 201
7361 Adohr Road

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # FA 000 5811 1

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
Ammonia ≥ 20%

TRADE SECRET ☐ Yes ☐ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207
Aqua Ammonia

EHS* 208
☒ Yes ☐ No
*If EHS if "Yes", all amounts below must be in pounds

CAS# 209
7664-41-7

FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 6000 215

FED HAZARD CATEGORIES (Check all that apply) ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
#6168/6000 gallon	#6168/6000 gallons	none	—

UNITS* (Check one item only) ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds.
6168

DAYS ON SITE 222
7

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER

STORAGE PRESSURE 224
☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225
☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1	226 20	227 Ammonia Solutions	228 ☒ Yes ☐ No	229 7664-41-7
2	230	231	232 ☐ Yes ☐ No	233
3	234	235	236 ☐ Yes ☐ No	237
4	238	239	240 ☐ Yes ☐ No	241
5	242	243	244 ☐ Yes ☐ No	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

☐ADD ☐DELETE ☐REVISE 200 Page __ of __

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3
Port Organic Products LTD

CHEMICAL LOCATION 201
7361 Adohr Road

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # FA 000 5811 1

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
Sulfuric Acid

TRADE SECRET ☐ Yes ☒ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207
Sulfuric Acid

EHS* 208
☒ Yes ☐ No
*If EHS if "Yes", all amounts below must be in pounds

CAS# 209
7664-93-9

FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 6000 gallon 215

FED HAZARD CATEGORIES (Check all that apply) ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
3000/45,300	6000/90,600#	None	—

UNITS* (Check one item only) ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds.

DAYS ON SITE 222

STORAGE CONTAINER 223
☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER

STORAGE PRESSURE 224
☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

STORAGE TEMPERATURE 225
☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1	226 15.1	227 Sulfuric Acid	228 ☒ Yes ☐ No	229
2	230	231	232 ☐ Yes ☐ No	233
3	234	235	236 ☐ Yes ☐ No	237
4	238	239	240 ☐ Yes ☐ No	241
5	242	243	244 ☐ Yes ☐ No	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

☐ADD ☐DELETE ☐REVISE 200 Page ___ of ___

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3

CHEMICAL LOCATION 201 | CHEMICAL LOCATION CONFIDENTIAL EPCRA 202 ☐ YES ☐ NO

FACILITY ID # 1 | MAP# (optional) 203 | GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205 | TRADE SECRET ☐ Yes ☐ No 206 (If Subject to EPCRA, refer to instructions)

COMMON NAME 207 | EHS* ☐ Yes ☐ No 208 (*If EHS if "Yes", all amounts below must be in pounds)

CAS# 209

FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☐ b. MIXTURE ☐ c. WASTE 211 | RADIOACTIVE ☐ Yes ☐ No 212 | CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☐ b. LIQUID ☐ c. GAS 214 | LARGEST CONTAINER 215

FED HAZARD CATEGORIES (Check all that apply) ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217 | MAXIMUM DAILY AMOUNT 218 | ANNUAL WASTE AMOUNT 219 | STATE WASTE CODE 220

UNITS* (Check one item only) ☐ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS ☐ d. TONS 221 (* If EHS, amount must be in pounds) | DAYS ON SITE: 222

STORAGE CONTAINER ☐ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER 223

STORAGE PRESSURE ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT 224

STORAGE TEMPERATURE ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC 225

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 226	227	☐ Yes ☐ No 228	229
2 230	231	☐ Yes ☐ No 232	233
3 234	235	☐ Yes ☐ No 236	237
4 238	239	☐ Yes ☐ No 240	241
5 242	243	☐ Yes ☐ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

HAZARDOUS WASTE GENERATOR

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Form

Page ___ of ___

I. FACILITY INFORMATION

FACILITY ID # 1 | EPA ID # (Hazardous Waste Only) 2

BUSINESS NAME (Same as Facility Name of DBA-Doing Business As) 3 | # OF EMPLOYEES A

II. TYPE OF GENERATOR

PLEASE CHECK THE BOX THAT APPLIES B

	RCRA GENERATOR (FEDERAL WASTE)	NON-RCRA GENERATOR (CALIFORNIA WASTE ONLY)
LARGE QUANTITY GENERATOR (>1000 KG HAZARDOUS WASTE PER MONTH	☐	☐
SMALL QUANTITY GENERATOR (>100 KG BUT <1000 KG HAZARDOUS WASTE PER MONTH)	☐	☐
CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR (<100 KG HAZARDOUS WASTE PER MONTH)	☐	☐

III. WASTE STREAM IDENTIFICATION

PLEASE COMPLETE THE TABLE BELOW. (SEE INSTRUCTIONS ON THE BACK FOR CODES AND EXPLANATIONS)

PROCESS C	WASTE DESCRIPTION D	WASTE ID E	AMOUNT PER YEAR F	UNITS G	STORAGE METHOD H	DISPOSAL METHOD I

I certify that the information provided herein is true and accurate to the best of my knowledge.

OWNER/OPERATOR NAME J | OWNER/OPERATOR TITLE K

OWNER/OPERATOR SIGNATURE | DATE L

1074

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

ENTERED

☒ ADD ☐ DELETE ☐ REVISE 200 Page 1 of 1

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 1
PORT ORGANIC PRODUCTS LTD

CHEMICAL LOCATION 201: 7361 ADOHR ROAD
CHEMICAL LOCATION CONFIDENTIAL EPCRA 202: ☐ YES ☒ NO

FACILITY ID # FA 000 5811 1 | MAP# (optional) 203 | GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205: Ammonia ≥ 20% conc
TRADE SECRET ☐ Yes ☒ No 206 (If Subject to EPCRA, refer to instructions)
COMMON NAME 207: Aqua Ammonia
EHS* ☒ Yes ☐ No 208 (*If EHS if "Yes", all amounts below must be in pounds)
CAS# 209: 7664-41-7
FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211
RADIOACTIVE ☐ Yes ☒ No 212
CURIES 213
PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214
LARGEST CONTAINER 215: 6000
FED HAZARD CATEGORIES (Check all that apply) ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☒ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
12,336	12,336	none	—

UNITS* (Check one item only) ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS 221 (*If EHS, amount must be in pounds)
DAYS ON SITE: 222: 7

STORAGE CONTAINER 223: ☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER

STORAGE PRESSURE 224: ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT
STORAGE TEMPERATURE 225: ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1	20 (226)	Ammonia (227)	☒ Yes ☐ No (228)	7664-41-7 (229)
2	(230)	(231)	☐ Yes ☐ No (232)	(233)
3	(234)	(235)	☐ Yes ☐ No (236)	(237)
4	(238)	(239)	☐ Yes ☐ No (240)	(241)
5	(242)	(243)	☐ Yes ☐ No (244)	(245)

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

(7/02 revised) KC Form 2731

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8709 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

☒ ADD ☐ DELETE ☐ REVISE 200 Page ___ of ___

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 1
PORT ORGANIC PRODUCTS LTD

CHEMICAL LOCATION 201: 7361 ADOHR ROAD
CHEMICAL LOCATION CONFIDENTIAL EPCRA 202: ☐ YES ☒ NO

FACILITY ID # FA 000 5811 1 | MAP# (optional) 203 | GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205: Sulfuric Acid
TRADE SECRET ☐ Yes ☒ No 206 (If Subject to EPCRA, refer to instructions)
COMMON NAME 207: Sulfuric Acid
EHS* ☒ Yes ☐ No 208 (*If EHS if "Yes", all amounts below must be in pounds)
CAS# 209: 7664-93-9
FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211
RADIOACTIVE ☐ Yes ☒ No 212
CURIES 213
PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214
LARGEST CONTAINER 215: 6000 gallon
FED HAZARD CATEGORIES (Check all that apply) ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
45,300	90,600	None	—

UNITS* (Check one item only) ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS 221 (*If EHS, amount must be in pounds)
DAYS ON SITE: 222: 7

STORAGE CONTAINER 223: ☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER

STORAGE PRESSURE 224: ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT
STORAGE TEMPERATURE 225: ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1	93 (226)	Sulfuric Acid (227)	☒ Yes ☐ No (228)	7664-93-9 (229)
2	(230)	(231)	☐ Yes ☐ No (232)	(233)
3	(234)	(235)	☐ Yes ☐ No (236)	(237)
4	(238)	(239)	☐ Yes ☐ No (240)	(241)
5	(242)	(243)	☐ Yes ☐ No (244)	(245)

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

(7/02 revised) KC Form 2731

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

200 ☒ ADD ☐ DELETE ☐ REVISE — Page ___ of ___

I. FACILITY INFORMATION

3 BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As): PORT ORGANIC PRODUCTS LTD

201 CHEMICAL LOCATION: 7361 Adohr Road

202 CHEMICAL LOCATION CONFIDENTIAL EPCRA: ☐ YES ☐ NO

FACILITY ID #: FA 0000 S811

203 MAP# (optional)

204 GRID# (optional)

II. CHEMICAL INFORMATION

205 CHEMICAL NAME: Potassium Hydroxide

206 TRADE SECRET: ☐ Yes ☒ No (If Subject to EPCRA, refer to instructions)

207 COMMON NAME: KOH

208 EHS*: ☒ Yes ☐ No (*If EHS if "Yes", all amounts below must be in pounds)

209 CAS#: 1310-58-3

210 FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD)

211 HAZARDOUS MATERIAL TYPE (Check one item only): ☒ a. PURE ☐ b. MIXTURE ☐ c. WASTE

212 RADIOACTIVE: ☐ Yes ☒ No

213 CURIES

214 PHYSICAL STATE (Check one item only): ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS

215 LARGEST CONTAINER: 1000 gallon

216 FED HAZARD CATEGORIES (Check all that apply): ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH

217 AVERAGE DAILY AMOUNT	218 MAXIMUM DAILY AMOUNT	219 ANNUAL WASTE AMOUNT	220 STATE WASTE CODE
12,800	12,800	None	—

221 UNITS* (Check one item only): ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS (* If EHS, amount must be in pounds.)

222 DAYS ON SITE: 7

223 STORAGE CONTAINER: ☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER

224 STORAGE PRESSURE: ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

225 STORAGE TEMPERATURE: ☐ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 (226)	(227)	☐ Yes ☐ No (228)	(229)
2 (230)	(231)	☐ Yes ☐ No (232)	(233)
3 (234)	(235)	☐ Yes ☐ No (236)	(237)
4 (238)	(239)	☐ Yes ☐ No (240)	(241)
5 (242)	(243)	☐ Yes ☐ No (244)	(245)

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

246 ADDITIONAL LOCALLY COLLECTED INFORMATION

If EPCRA, Please Sign Here

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

200 ☒ ADD ☐ DELETE ☐ REVISE — Page ___ of ___

I. FACILITY INFORMATION

3 BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As): PORT ORGANIC PRODUCTS LTD

201 CHEMICAL LOCATION: 7361 Adohr Road

202 CHEMICAL LOCATION CONFIDENTIAL EPCRA: ☐ YES ☒ NO

FACILITY ID #: FA 0000 S811

203 MAP# (optional)

204 GRID# (optional)

II. CHEMICAL INFORMATION

205 CHEMICAL NAME: Urea Ammonium Nitrate

206 TRADE SECRET: ☐ Yes ☒ No (If Subject to EPCRA, refer to instructions)

207 COMMON NAME: UN 32

208 EHS*: ☒ Yes ☐ No (*If EHS if "Yes", all amounts below must be in pounds)

209 CAS#: 57-13-6

210 FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD)

211 HAZARDOUS MATERIAL TYPE (Check one item only): ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE

212 RADIOACTIVE: ☐ Yes ☒ No

213 CURIES

214 PHYSICAL STATE (Check one item only): ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS

215 LARGEST CONTAINER: ~~1000~~ 1500 gallons

216 FED HAZARD CATEGORIES (Check all that apply): ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH

217 AVERAGE DAILY AMOUNT	218 MAXIMUM DAILY AMOUNT	219 ANNUAL WASTE AMOUNT	220 STATE WASTE CODE
16,605	16,605	None	—

221 UNITS* (Check one item only): ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS (* If EHS, amount must be in pounds.)

222 DAYS ON SITE: 7

223 STORAGE CONTAINER: ☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM ☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO ☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER ☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ o. TOTE BIN ☐ p. TANK WAGON ☐ q. RAIL CAR ☐ r. OTHER

224 STORAGE PRESSURE: ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT

225 STORAGE TEMPERATURE: ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC

%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1 < 1% (226)	Ammonium Nitrate (227)	☐ Yes ☐ No (228)	6484-52-2 (229)
2 (230)	(231)	☐ Yes ☐ No (232)	(233)
3 (234)	(235)	☐ Yes ☐ No (236)	(237)
4 (238)	(239)	☐ Yes ☐ No (240)	(241)
5 (242)	(243)	☐ Yes ☐ No (244)	(245)

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

246 ADDITIONAL LOCALLY COLLECTED INFORMATION

If EPCRA, Please Sign Here

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
2700 M STREET, SUITE 300
BAKERSFIELD, CA 93301
(661) 862-8700 Fax (661) 862-8701

Unified Program Consolidated Form (UPCF)
HAZARDOUS MATERIALS
(one page per material per building or area)

☒ ADD ☐ DELETE ☐ REVISE 200 Page ___ of ___

I. FACILITY INFORMATION

BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 1
PORT Organic Products LTD

CHEMICAL LOCATION 201
7361 Adohr Road

CHEMICAL LOCATION CONFIDENTIAL EPCRA 202
☐ YES ☒ NO

FACILITY ID # FA 0000581111 T

MAP# (optional) 203

GRID# (optional) 204

II. CHEMICAL INFORMATION

CHEMICAL NAME 205
Phosphoric Acid

TRADE SECRET ☐ Yes ☒ No 206
If Subject to EPCRA, refer to instructions

COMMON NAME 207

EHS* ☒ Yes ☐ No 208
*If EHS if "Yes", all amounts below must be in pounds

CAS# 209
7732-18-5

FIRE CODE HAZARD CLASSES (Not currently required by KCEHSD) 210

HAZARDOUS MATERIAL TYPE (Check one item only) ☐ a. PURE ☒ b. MIXTURE ☐ c. WASTE 211

RADIOACTIVE ☐ Yes ☒ No 212

CURIES 213

PHYSICAL STATE (Check one item only) ☐ a. SOLID ☒ b. LIQUID ☐ c. GAS 214

LARGEST CONTAINER 2700 gallons 215

FED HAZARD CATEGORIES (Check all that apply) ☐ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☒ d. ACUTE HEALTH ☐ e. CHRONIC HEALTH 216

AVERAGE DAILY AMOUNT 217	MAXIMUM DAILY AMOUNT 218	ANNUAL WASTE AMOUNT 219	STATE WASTE CODE 220
32,097	32,097	None	—

UNITS* (Check one item only) ☐ a. GALLONS ☐ b. CUBIC FEET ☒ c. POUNDS ☐ d. TONS 221
* If EHS, amount must be in pounds.

DAYS ON SITE: 7 222

STORAGE CONTAINER
☒ a. ABOVE GROUND TANK ☐ b. UNDERGROUND TANK ☐ c. TANK INSIDE BUILDING ☐ d. STEEL DRUM
☐ e. PLASTIC/NONMETALLIC DRUM ☐ f. CAN ☐ g. CARBOY ☐ h. SILO
☐ i. FIBER DRUM ☐ j. BAG ☐ k. BOX ☐ l. CYLINDER
☐ m. GLASS BOTTLE ☐ n. PLASTIC BOTTLE ☐ n. TOTE BIN ☐ p. TANK WAGON
☐ q. RAIL CAR ☐ r. OTHER 223

STORAGE PRESSURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT 224

STORAGE TEMPERATURE ☒ a. AMBIENT ☐ b. ABOVE AMBIENT ☐ c. BELOW AMBIENT ☐ d. CRYOGENIC 225

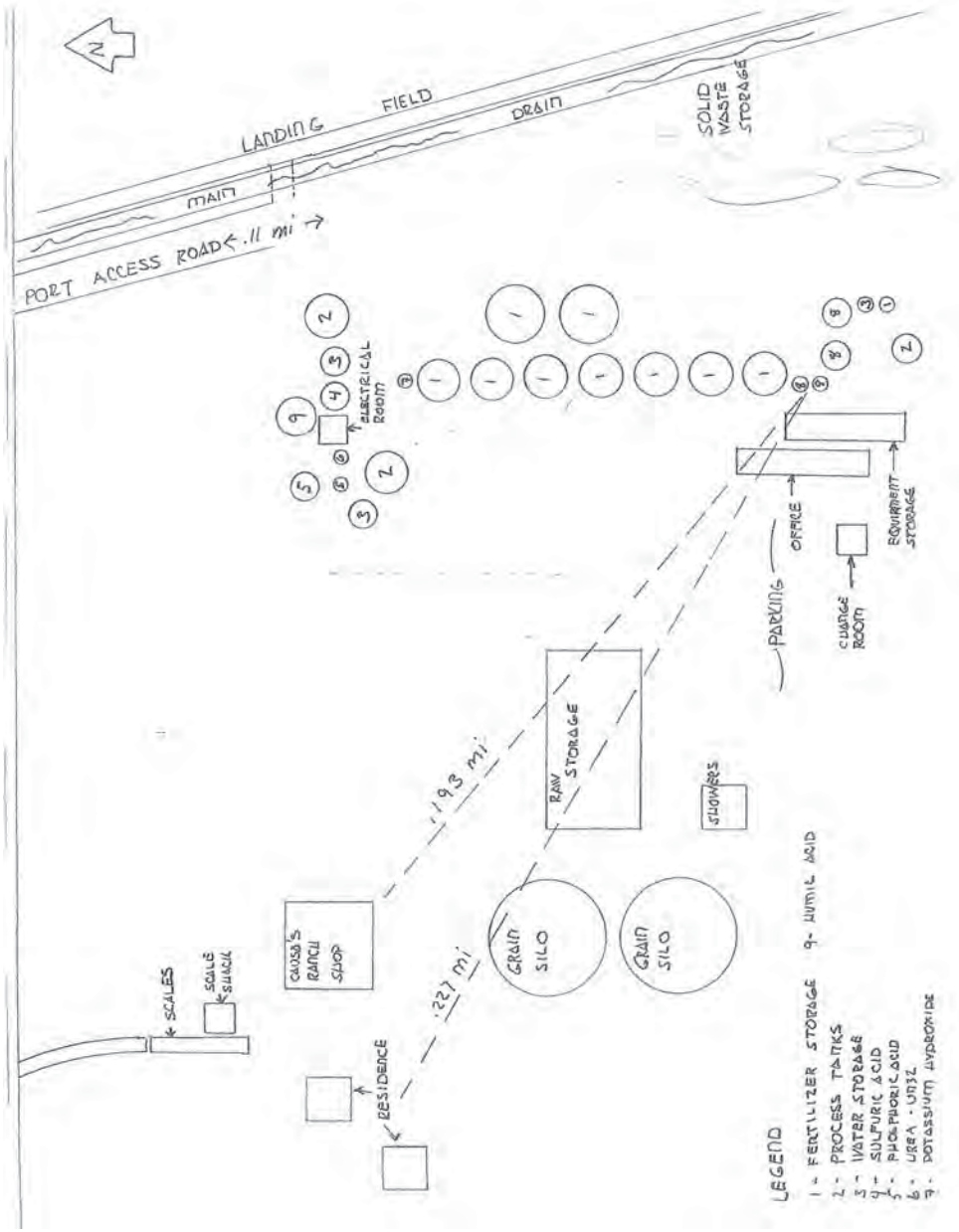
	%WT	HAZARDOUS COMPONENT (For mixture or waste only)	EHS	CAS #
1	226	227	☐ Yes ☐ No 228	229
2	230	231	☐ Yes ☐ No 232	233
3	234	235	☐ Yes ☐ No 236	237
4	238	239	☐ Yes ☐ No 240	241
5	242	243	☐ Yes ☐ No 244	245

If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.

ADDITIONAL LOCALLY COLLECTED INFORMATION 246

If EPCRA, Please Sign Here

(7/02 revised) KC Form 2731



FA0005811

PORT ORGANIC PRODUCTS LTD

Environmental & Emergency Contacts

Owner & Business Information

Ba

	Chemical Name	Location	Max Daily Amount	Unit of M
View	AMMONIA AQUA		12336.0000	Pounds
View	PHOSPHORIC ACID		32097.0000	Pounds
View	POTASSIUM HYDROXIDE		12800.0000	Pounds
View	SULFURIC ACID		90600.0000	Pounds
View	UN 32		16605.0000	Pounds

file # 001074

RMP Report for Port Organic Products Ltd.

Section 1. Registration Information

1.1 Source Identification: **Facility ID:** 74 There were no reportable accidents in the last 5 years.

a. Facility Name: Port Organic Products Ltd.

b. Parent Company #1 Name:

c. Parent Company #2 Name:

1.2 EPA Facility Identifier:

1.3 Other EPA Systems Facility ID: FA0005811

1.4 Dun and Bradstreet Numbers (DUNS):

a. Facility DUNS:

b. Parent Company #1 DUNS:

c. Parent Company #2 DUNS:

1.5 Facility Location Address:

a. Street 1: 7361 Adohr Road

b. Street 2:

c. City: Buttonwillow **d. State:** CA **e. Zip:** 93206 -

f. County: Kern

Facility Latitude and Longitude:

g. Lat. (dd.dddddd): 35.203410 **h. Long. (ddd.dddddd):** -119.235540

i. Lat/Long Method: P2 Public Land Survey - Quarter Section

j. Lat/Long Description: FC Facility Centroid

k. Horizontal accuracy measure (m): 1000

l. Horizontal Reference Datum Code: 001 North American Datum of 1927

m. Source Map Scale Number:

1.6 Owner or Operator:

a. Name: Kenneth N. Nelson Jr.

b. Phone: (661) 764-9670

Mailing address:

c. Street 1: PO Box 5203 **d. Street 2:**

e. City: Buttonwillow **f. State:** CA **g. Zip:** 93388 -

1.7 Name and title of person or position responsible for part 68 (RMP) implementation:

a. Name of person: James J. Zaben

b. Title of person or position: General Manager

c. Email address: jzaben@bak.rr.com

1.8 Emergency contact:

a. Name: Jim Zaben

b. Title: General Manager

c. Phone: (661) 764-9670

d. 24-hour phone: (661) 201-9598

e. Ext. or PIN:

f. Email address: jzaben@bak.rr.com

1.9 Other points of contact:

a. Facility or Parent Company E-Mail Address:

b. Facility Public Contact Phone:

c. Facility or Parent Company WWW Homepage Address:

1.10 LEPC: Region 5 LEPC Inland South

1.11 Number of full time employees on site: 7

1.12 Covered by:

a. OSHA PSM: Yes

b. EPCRA 302: No

c. CAA Title V: No **Air operating permit ID:**

1.13 OSHA Star or Merit Ranking: No

1.14 Last Safety Inspection (by an External Agency) Date:

1.15 Last Safety Inspection Performed by an External Agency: OSHA

1.16 Will this RMP involve predictive filing?: No

1.18 RMP Preparer Information:

a. Name: James J. Zaben

b. Telephone: (661) 764-9670

c. Street1: 7361 Adohr Road

d. Street2:

e. City: Buttonwillow

f. State: CA g. ZIP: 93206 -

Section 1.17 Process(es)

a. Process ID: 145 **Program Level** 2 liquid organic fertilizer

b. NAICS Code

325314 Fertilizer (Mixing Only) Manufacturing

c. Process Chemicals

c.1 Process Chemical (ID / Name)	c.2 CAS Nr.	c.3 Qty (lbs.)
159 Ammonia (conc 20% or greater)	7664-41-7	12,336

Section 2. Toxics: Worst Case

Toxics: Worst Case ID 75

2.1 a. Chemical Name: Ammonia (conc 20% or greater)

b. Percent Weight of Chemical (if in a mixture):

2.2 Physical State: Liquid

2.3 Model used: EPA's RMP*Comp(TM)

2.4 Scenario: Liquid spill & Vaporization

2.5 Quantity released: 6,168 lbs

2.6 Release rate: 616.8 lbs/min

2.7 Release duration: 10.0 mins

2.8 Wind speed: 1.5 m/sec

2.9 Atmospheric Stability Class: F

2.10 Topography: Rural

2.11 Distance to Endpoint: 0.60 mi

2.12 Estimated Residential population within distance to endpoint: 7

2.13 Public receptors within distance to endpoint:

a. Schools:	No	d. Prisons/Correction facilities:	No
b. Residences:	Yes	e. Recreation areas:	No
c. Hospitals:	No	f. Major commercial, office or, industrial areas:	No

g. Other (Specify):

2.14 Environmental receptors within distance to endpoint:

a. National or state parks, forests, or monuments: No

b. Officially designated wildlife sanctuaries, preserves, or refuges: No

c. Federal wilderness areas: No

d. Other (Specify):

2.15 Passive mitigation considered:

a. Dikes:	No	d. Drains:	Yes
b. Enclosures:	No	e. Sumps:	No
c. Berms:	No	f. Other (Specify):	

2.16 Graphic file name:

Section 3. Toxics: Alternative Release

Toxics: Alternative Release ID: 70

3.1 a. Chemical Name: Ammonia (conc 20% or greater)

b. Percent Weight of Chemical (if in a mixture):

3.2 Physical State: Liquid

3.3 Model: EPA's RMP*Comp(TM)

3.4 Scenario: Vessel leak

3.5 Quantity released: 6,168 lbs

3.6 Release rate: 616.8 lbs/min

3.7 Release duration: 10.0 mins

3.8 Wind speed: 3.0 m/sec

3.9 Atmospheric Stability Class: D

3.10 Topography: Rural

3.11 Distance to Endpoint: 0.20 mi

3.12 Estimated Residential population within distance to endpoint: 7

3.13 Public receptors within distance to endpoint:

a. Schools:	No	d. Prisons/Correction facilities:	No
b. Residences:	Yes	e. Recreation areas:	No
c. Hospitals:	No	f. Major commercial, office, or industrial areas:	No

g. Other (Specify):

3.14 Environmental receptors within distance to endpoint:

a. National or state parks, forests, or monuments: No

b. Officially designated wildlife sanctuaries, preserves, or refuges: No

c. Federal wilderness areas: No

d. Other (Specify):

3.15 Passive mitigation considered:

a. Dikes:	No	d. Drains:	Yes
b. Enclosures:	No	e. Sumps:	Yes
c. Berms:	No	f. Other (Specify):	

3.16 Active mitigation considered:

a. Sprinkler systems:	No	f. Flares:	No
b. Deluge system:	No	g. Scrubbers:	No
c. Water curtain:	No	h. Emergency shutdown systems:	No
d. Neutralization:	No	i. Other (Specify):	
e. Excess flow valve:	No		

3.17 Graphic file name:

Section 4. Flammables: Worst Case --- No Data To Report

Section 5. Flammables: Alternative Release --- No Data To Report

Section 6. Accident History --- No Data To Report

Section 7. Prevention Program 3 --- No Data To Report

Section 8. Prevention Program 2

Process ID: 145 liquid organic fertilizer

Prevention Program ID: 27

Prevention Program Description: manufacturer of liquid organic fertilizer

8.1 NAICS Code: 325314

8.2 Chemicals: Chemical Name
Ammonia (conc 20% or greater)

8.3 Safety Information:

a. The date of the most recent review or revision of the safety information: 04/12/2005

b. Select all Federal or state regulations or industry-specific design codes and standards used to demonstrate compliance with the safety information requirement:

NFPA 58 (or state law based on NFPA 58):	No	ANSI Standards:	No
OSHA (29 CFR 1910.111):	Yes	ASME Standards:	No
ASTM Standards:	No	None:	No

Other (Specify):

Comments:

8.4 Hazard review:

a. The date of completion of most recent hazard review or update: 04/12/2005

b. The expected or actual date of completion of all changes resulting from the hazard review: 07/12/2005

c. Major hazards identified:

Toxic release:	Yes	Overpressurization:	No	Earthquake:	Yes
Fire:	No	Corrosion:	No	Floods (flood plain):	No
Explosion:	No	Overfilling:	No	Tornado:	No
Runaway reaction:	No	Contamination:	No	Hurricanes:	No
Polymerization:	No	Equipment failure:	No	Other (Specify):	
		Loss of cooling, heating, electricity, instrument air:	No		

d. Process controls in use:

Vents:	No	Emergency air supply:	No	Other (Specify):
Relief valves:	No	Emergency power:	No	
Check valves:	No	Backup pump:	No	
Scrubbers:	No	Grounding equipment:	No	
Flares:	No	Inhibitor addition:	No	
Manual shutoffs:	No	Rupture disks:	No	
Automatic shutoffs:	No	Excess flow device:	No	
Interlocks:	No	Quench system:	Yes	
Alarms and procedures:	No	Purge system:	No	
Keyed bypass:	No	None:	No	

e. Mitigation systems in use:

Sprinkler system:	No	Water Curtain:	No
Dikes:	No	Enclosure:	No
Fire walls:	No	Neutralization:	No
Blast walls:	No	None:	Yes
Deluge system:	No	Other (Specify):	

f. Monitoring/detection systems in use:

Process area detectors:	No	None:	Yes
Perimeter monitors:	No	Other (specify):	

g. Changes since last hazard review or hazard review update:

Reduction in chemical inventory:	No	Installation of perimeter monitoring systems:	No
Increase in chemical inventory:	No	Installation of mitigation systems:	No
Change process parameters:	No	None recommended:	No
Installation of process controls:	No	None:	Yes
Installation of process detection systems:	No	Other (Specify):	

8.5 The date of the most recent review or revision of operating procedures: 04/12/2005

8.6 Training:

a. The date of the most recent review or revision of training programs: 05/11/2005

b. The type of training provided: Classroom: Yes On the job: No

Other training (Specify):

c. The type of competency testing used:

Written tests:	Yes	Observation:	No
Oral tests:	No	Other (Specify):	
Demonstration:	No		

8.7 Maintenance:

a. The date of the most recent review or revision of maintenance procedures: 04/12/2005

b. The date of the most recent equipment inspection or test: 04/12/2005

c. Equipment most recently inspected or tested: Pumps, hoses, and valves

8.8 Compliance audits:

a. The date of the most recent compliance audit: 01/25/2007

b. Expected or actual date of completion of all changes resulting from the compliance audit: 07/12/2005

8.9 Incident investigation:

a. The date of the most recent incident investigation (if any):

b. Expected or actual date of completion of all changes resulting from the investigation:

8.10 The date of the most recent change that triggered a review or revision of safety information, the hazard review, operating or maintenance procedures, or training:

Section 9. Emergency Response

9.1 Written Emergency Response (ER) Plan:

a. Is facility included in written community emergency response plan? Yes

b. Does facility have its own written emergency response plan? Yes

9.2 Does facility's ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)? Yes

9.3 Does facility's ER plan include procedures for informing the public and local agencies responding to accidental releases? Yes

9.4 Does facility's ER plan include information on emergency heath care? Yes

9.5 Date of most recent review or update of facility's ER plan: 01/05/2005

9.6 Date of most recent ER training for facility's employees: 01/05/2005

9.7 Local agency with which facility's ER plan or response activities are coordinated:

a. Name of agency: Kern County Fire Department

b. Telephone number: (661) 324-6551

9.8 Subject to:

a. OSHA Regulations at 29 CFR 1910.36: Yes

b. OSHA Regulations at 29 CFR 1910.120: No

c. Clean Water Act Regulations at 40 CFR 112: No

d. RCRA Regulations at 40 CFR 264, 265, and 279.52: No

e. OPA-90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254: No

f. State EPCRA Rules/Law: No

g. Other (Specify):

Executive Summary

Excutive Summary
Port Organic Products, Ltd.

EHS Procedure

NH3 Emergency Procedures
Emergency Procedures

Any accidental or unintentional release of ammonia to the atmosphere is an emergency. The seriousness depends on the amount release and the number of persons, animals or crops in the danger zone. Every bulk plant must have an emergency plan or procedure. EPA's Risk Management Program requires that local emergency responders be familiar with the plant's facilities and the methods for handling an ammonia emergency. Each employee must also be familiar with the emergency procedures. Most ammonia emergencies can be avoided. They are primarily caused by carelessness, error, or just plain negligence in maintaining or using equipment. Studies show the principle causes of ammonia emergencies are:
1. Broken riser pipes caused by driving off without disconnecting the hose.
2. Ruptured hoses caused by using faulty or damaged hoses.
3. Ruptured hoses caused by hydrostatic relief valves not operating properly.
4. Defective valves or inoperative excess flow valves. A defective valve can mean the difference between a minor release and the loss of an entire tank of ammonia.
5. Collision or upset of truck or nurse trailer.

Emergency Equipment

Self Contained Breathing Apparatus (SCBA) - Positive-pressure open-circuit until that has a full face-piece and

breathing air cylinder that will last up to 30 minutes.
These respirators must be used when entering or re-entering atmospheres of unknown ammonia concentrations or high concentrations that are known or suspected to be immediately dangerous to life and health. Sue of this equipment should be limited to trained personnel only. The face-piece for this equipment must be fitted to the wearer.

Gas Masks -These full face-piece respirators utilize canisters that absorb the ammonia before it reaches the wearer. Canisters cannot be used in a high ammonia concentration; therefore, they should be used only for escape purposes in an emergency. At 300 ppm concentration in the atmosphere only a self-contained breathing apparatus (SCBA) will provide adequate protection.
Gloves, Boots, Raincoats, Jackets, and Pants - These should be made of rubber or other ammonia-proof material to prevent burns to the skin.
Detection Equipment - Various ammonia and oxygen detection equipment may be necessary to determine the safety of the atmosphere at or approaching the site of an ammonia release.

What to do in an Emergency
Remain calm, assess the situation and use extreme caution. (Note: All employees must be familiar with a facility's emergency response procedures.)
Call the police and fire departments.

1. Remove injured persons only if this can be done without injury to yourself.
2. Block off all other accesses to the emergency area.
3. Evacuate people from areas that may be affected by the emergency.
4. Detour motorists from downwind areas.
>>>The following should be attempted ONLY by trained personnel<<<
1. Approach the accident from upwind and shut off the valves if possible.
2. Apply a fog of water to the ammonia plume before it leaves the property.
3. Close the valves between the tank and the leak. This must be done by a trained person wearing a self-contained breathing apparatus and protective clothing.
Attach a life line (rope) that leads to a second person away from the leak. This person must also have an air-supplied respirator available in case the fist respirator fails or for an additional rescue or emergency assistance.
If the leak cannot be shut off by valves, continue spraying with water and transfer the product to other tanks.
4. Notify National Response Center immediately if the release of anhydrous ammonia is greater than 100 pounds at 800-424-8802. (Delay in reporting may result in substantial penalties.)
5. Notify state agencies as soon as possible.

What to do in case of Accident or Injury

Water and plenty of it is the only first aid treatment. If a person comes in contact with a spray of ammonia liquid or vapor, flushing with large quantities of clean water is essential. This is the reason why 5-gallon containers of water are carried on nurse trailers and applicators and large tanks of water or emergency showers are located at the bulk plant. These tanks must be large enough to completely submerge someone.

Contact with Skin and Mucous Membrane

Get the victim to clean water in a hurry. Put the injured part of the body under water of if necessary get the victim into the tank or under the shower. Remove clothing and shoes while in the water as clothing may be frozen to body. Continue flushing with water for at least 15 minutes. Under no conditions should salves or ointments be applied for at least 24 hours.

Contact with the Eyes

If even a small quantity of ammonia enters the eyes, flush with a large amount of clean water for at least 15 minutes. Hold the eyelids apart. Call a doctor. After the first 15-minute period of flushing, if a physician is not available, continue flushing for a second 15-minute period. Do not apply oils or oily ointments. Get the victim to a physician, preferably an eye specialist, as soon as possible.

Inhalation

Take the victim to an uncontaminated area. If the exposure has been slight concentrations for a short time, usually no treatment is required. When there is severe exposure to higher concentrations, oxygen can be administered, but only by qualified personnel or a physician. If the patient is not breathing, begin artificial

respiration immediately and call the nearest hospital or doctor. Never attempt to give anything by mouth to an unconscious patient. Keep the victim warm (not hot), and have them rest.

Taken Internally

If liquid anhydrous ammonia has been swallowed, call a physician immediately. If the patient is conscious and able, he should drink large amounts of water to dilute the chemical. Do not induce vomiting if the patient is in shock, extreme pain or is unconscious. If vomiting begins, place the patient face down with head lower than hips. (This prevents vomit from entering the lungs and causing further injury or death.)

RMP Validation Errors/Warnings --- No Data To Report

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
MATTHEW CONSTANTINE, R.E.H.S., Director
2700 "M" STREET, SUITE 300
BAKERSFIELD, CA 93301-2370
Voice: (661) 862-8700
Fax: (661) 862-8701
TTY Relay: (800) 735-2929
e-mail: eh@co.kern.ca.us

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community and Economic Development Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

January 25, 2007

CERTIFIED UNIFIED PROGRAM AGENCY (CUPA)
HAZARDOUS MATERIAL INSPECTION FORM

Date: 01/25/2007 Facility ID: FA0005811 File #: 001074

Facility Name: PORT ORGANIC PRODUCTS LTD						**Inspection Type** ☒ Routine ☐ Reinspection ☐ Complaint
Site Address: 7361 ADHOR RD BUTTONWILLOW, CA 93206						
Phone: (661)764-9670						
PROGRAMS INSPECTED:	☒ Business Plan	☒ HW Generator	☐ UST	☐ AGT	☒ CalARP	
REINSPECTION REQUIRED:	☐ Business Plan	☐ HW Generator	☐ UST	☐ AGT	☐ CalARP	

VIOLATION

YES	NO/NA	VIOL. #	BUSINESS PLAN REQUIREMENTS
☐	☒	BP01	Inventory of hazardous materials is accurate, up to date, and complete [HSC 6.95, 25504, Title 19 CCR 2729].
☐	☒	BP02	Site layout/facility maps are accurate [HSC 6.95,25504; Title 19 CCR 2729].
☐	☒	BP03	Hazardous materials are stored in properly labeled and non-detoriated containers [HSC 25124(b)(3)(A & B)].
☐	☒	ER01	Contingency Plan is complete, updated, and maintained on site [HSC 6.95, 25504;Title 19 CCR 2731 Title 22 CCR 66265.53-54].
☐	☒	ER02	Facility is operated and maintained to prevent/mitigate fire, explosion, or releases of hazardous material or waste which could threaten human health or the environment [Title 22 CCR 66265.31; Title 19 CCR 2731].
☐	☒	ER03	Business has equipment required to, or appropriate for, safely handling hazardous materials [Title 22 CCR 66265.32 & .34].
☐	☒	TR01	Facility has a training program appropriate for the size and complexity of business and nature of hazardous materials handled [Title 19 CCR 2732; Title 22 CCR 66265.16].
☐	☒	TR02	Training documentation is maintained on site for current personnel. [Title 19 CCR 2732;22 CCR 66265.16].

COMMENTS: Go to http://www.co.kern.ca.us/eh/cupaprogram.asp for forms and information.
GPS Coordinates: Latitude: **Longtitude:**

INSPECTOR: KEVIN E BEAHM **DATE:** 01/25/2007

HAZARDOUS WASTE GENERATOR

EPA ID NUMBER:

VIOLATIONS YES	VIOLATIONS NO/NA	VIOL. #	GENERATOR REQUIREMENTS
☐	☒	GR01	Generator has an EPA Identification number to treat, store, dispose, transport, or transfer hazardous waste [Title 22, CCR 66262.12].
☐	☒	GR02	The facility has made an appropriate waste determination for hazardous based on own knowledge or analysis or other [Title 22, CCR 66262.11]
☐	☒	GR03	Facility Personnel demonstrate awareness of proper(legal) hazardous-waste handling procedures. [Title 22, CCR, 66262.34(d)(2)].
☐	☒	GA01	Hazardous waste has not accumulated for more than 90/180/270 days(depending upon volume/circumstances) without the facility having a hazardous waste storage permit [Title 22,CCR, 66262.34(a).]
☐	☒	GA02	Empty containers or inner liners greater than 5 gallons have dates when emptied and are managed properly within one year of date emptied [Title 22, CCR, 66261.7(f)].
☐	☒	GA03	Universal waste is not accumulated at facility for more than one year [Title 22, CCR, 66273.15(a);66273.35(a)].
☐	☒	GA04	The facility disposes used oil filters within 180 days of generation (or one year if less than 1 ton are accumulated) [Title 22, CCR, 66266.130(c)(4)].
☐	☒	GA05	The facility disposes lead-acid batteries within 180 days of generation (or one year if less than 1 ton are accumulated) [Title 22, CCR, 66268.81(a)(6)]
☐	☒	GC01	Hazardous waste storage containers are in good condition [Title 22, CCR, 66262.34(a)(1)(A)].
☐	☒	GC02	Containers holding hazardous waste are closed/sealed except when adding/removing waste [Title 22, CCR, 66262.34(a)(1)(A)].]
☐	☒	GC03	The facility documents weekly inspections of hazardous waste storage area/containers [Title 22, CCR, 66265.15(d) and 66262.34(a)(1)(A)].
☐	☒	GC04	The facility documents daily inspections of tanks where hazardous waste is stored [Title 22, CCR 66262.34(a)(1)(A)].
☐	☒	GC05	The facility has adequate secondary containment for hazardous waste tank systems [Title 22, CCR 66262.34(a)(1)(A)].
☐	☒	GC06	Containers utilizing satellite accumulation rules are at or near the point of generation [Title 22, CCR 66262.34(e)(1)(A)].
☐	☒	GC07	Satellite wastes are managed according to the regulations (complete labeling, accumulation times, 55-gallon or 1 quart volume limits, etc.). [Title 22, CCR, 66262.34(e)].
☐	☒	GR04	Manifests or LDRs are properly completed and/or retained by generator for 3 years [Title 22, CCR 66262.23(a)(1); 66263.42;66263.24;66262.34(a)(4)].
☐	☒	GR05	The facility filed an exception report to DTSC after not receiving the signed TSDF copy of a manifest within 35 days [Title 22, CCR, 66262.42].
☐	☒	GR06	The facility has copies of bills of lading or receipts for removal of hazardous wastes [HSC 25160.2-Consolidated manifests/ 66266.81(a)(6)(B)-lead acid batteries/66266.130- oil filters]. The facility shall maintain copies of receipts for at least three years.
☐	☒	GR07	The facility submitted a hazardous waste recycling report [HSC 25143.10]
☐	☒	GT01	The facility is conducting on-site treatment of hazardous waste with a tiered permit [HSC 25189.5(d)]
☐	☒	GT02	Authorized, licensed, and certified hazardous waste haulers are used to transport hazardous waste to appropriate facilities [H&S Code Chapter 6.5 Section 25163].
☐	☒	GT03	Hazardous wastes are sent to authorized disposal facilities [HSC 25189.5].
☐	☒	GT04	Hazardous waste is not disposed to ground, water, or air [HSC 25189.5].

INSPECTOR: KEVIN E BEAHM **DATE:** 01/25/2007

VIOLATIONS YES	VIOLATIONS NO/NA	VIOL. #	GENERATOR REQUIREMENTS
☐	☒	GL01	Containers of hazardous waste are properly labeled (includes appropriate accumulation date, the words "HAZARDOUS WASTE," the waste composition/physical state, the hazardous properties, and name/address of generator) [Title 22, CCR, 66262.34(f)].
☐	☒	GL02	Containers of excluded recyclable materials are properly labeled [HSC 25143.9(a)].
☐	☒	GL03	Containers of universal waste are properly labeled. [Title 22, CCR, 66273.14 for SQH or 66273.34 for LQH].
☐	☒	GL04	Containers of drained used oil filters are labeled with the words "DRAINED USED OIL FILTERS" [Title 22, CCR, 66266.130(c)(3)].
☐	☒	GL05	Accumulation dates are marked on spent lead-acid batteries [22CCR 66266.81]
☐	☒	GL06	Tanks/containers of used oil destined for recycling are clearly marked with the words "USED OIL" [HSC 25143.9(a)].
☐	☒	GL07	Empty contaminated containers are clearly marked with the date they were emptied [Title 22, CCR, 66261.7(f)].

INSPECTOR: KEVIN E BEAHM **DATE:** 01/25/2007

FACILITY NAME: PORT ORGA PRODUCTS LTD **ADDRESS:** 7361 ADHC D BUTTONWILLOW, CA 93206 **FA ID:** FA0005811 **FILE ID:** 001074

SUMMARY OF OBSERVATIONS/VIOLATIONS

☒ No violations of underground storage tank, hazardous materials, or hazardous waste laws/regulations were discovered. KERN CUPA greatly appreciates your efforts to comply with all the laws and regulations

☐ Violations were observed/discovered as listed below. All violations must be corrected by implementing the corrective action listed by each violation. If you disagree with any of the violations or corrective actions required, please inform the CUPA in writing.

ALL VIOLATIONS MUST BE CORRECTED WITHIN 30 DAYS OR AS SPECIFIED. CUPA must be informed in writing with a certification that compliance has been achieved. A false statement that compliance has been achieved is a violation of the law and punishable by a fine of not less than $2,000 or more than $25,000 for each violation. Your facility may be reinspected any time during normal business hours. If a second reinspection becomes necessary due to non compliance, a reinspection charge of $85.00 per hour may be charged to the facility.

You may request a meeting with the Program Manager to discuss the inspection findings and/or the proposed corrective actions. The issuance of this Summary of Violations does not preclude the CUPA from taking administrative, civil, or criminal action.

FACILITY NAME: PORT ORGANIC PRODUCTS LTD **ADDRESS:** 7361 ADHOR RD BUTTONWILLOW, CA 93206 **FA ID:** FA0005811 **FILE ID:** 001074

VIOLATIONS

VIOL. NO	VIOL. TYPE	CORRECTIVE ACTION REQUIRED

INSPECTION COMMENTS:

INSPECTOR: KEVIN E BEAHM **SIGNATURE OF FACILITY REP:**
DATE: 01/25/2007

Certification: I certify under penalty of perjury that this facility has complied with the corrective actions listed on this inspection form.
Signature of Owner/Operator: _____ **Title:** Manager 3/29/07 **Date:**

Kern County Environmental Health Services Department
HAZARDOUS MATERIALS MANAGEMENT PROGRAM
CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM
2700 M Street, Suite 300, Bakersfield, CA 93301 • (661) 862-8700, Fax (661) 862-8701

CALARP INSPECTION REPORT

Facility ID: FA0005811 **File #: 001074**

Facility Name: PORT ORGANIC PRODUCTS LTD Inspection Date: 1-25-2007
Street Address: 7361 ADOHR RD EPA ID No:
City: BUTTONWILLOW, CA Zip Code: 93206 Number of Employees:
Facility Contact: JIM ZABEN Phone No. (661) 764-9670 E-Mail:

Refer to Title 19 of the California Code of Regulations (CCR) and Chapter 6.95 of the Health and Safety Code (CHSC), Section 112(r) of the Clean Air Act. The following risk factors are either present (Y), not present (N), or not addressed/unknown (N/A)

SURROUNDING POPULATIONS	Y	N	N/A	DOCUMENT REVIEW	Y	N	N/A
On-site Vulnerable Populations		x		Business Plan Current and Accurate:	x		
School within 1 mile		x		Emergency Response Plan	x		
Non-Industrial Neighboring Uses: Farming							
				Process Hazard Analysis			
				Process Safety Management Elements: Safety Information, Hazard Review	x		
Immediate Neighbors: Farming				Operating Procedures			
				Training Records			
DETECTION AND MONITORING	**Y**	**N**	**N/A**	**MITIGATION EQUIPMENT**	**Y**	**N**	**N/A**
				Site Security: Fenced, Gated			

Inspection Narrative:

Process Description:
Port Organic Products is involved in the manufacture of liquid organic fertilizers. Liquid fish, phosphoric and sulfuric acids, UN32, potassium hydroxide, aqua ammonia and molasses are stored in tanks at ambient temperature. Fish, sulfate of potash, ammonia sulfate, xantham gum, are stored in a covered warehouse. During the manufacturing the temperatures range from 110' F to 135' F in the batch tanks. All materials are utilized without any waste except for undigested fish solids which is transferred to a waste area for sale as compost.

Recommendations
Recalculate the quantity released and the release rate for the Worst Case Scenario and the Alternate Release Scenario in your RMP Submit. The correct data does not significantly alter the distance to endpoint.

Deficiencies / Violations
Operating Procedures must be more detailed outlining the specific valves and switches that are involved for each procedure.

☐ NOTICE OF VIOLATION: THE VIOLATIONS NOTED ABOVE MUST BE CORRECTED WITHIN _____ DAYS. FAILURE TO COMPLY MAY RESULT IN LEGAL ACTION. THE CERTIFICATE OF COMPLIANCE SHALL BE SUBMITTED WITHIN THE TIME PERIOD NOTED ABOVE.

Inspector: KEVIN BEAHM Report Date: 1-25-2007 Received by: MAILED Title: _____

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
MATTHEW CONSTANTINE, R.E.H.S., Director
2700 "M" STREET, SUITE 300
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RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Community and Economic Development Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

November 14, 2007

Kenneth Nelson
PORT ORGANIC PRODUCTS LTD
7361 Adhor Road
Buttonwillow, CA 93206

SUBJECT: INSPECTION REPORT AND REPORT OF VIOLATIONS
FOR PORT ORGANIC PRODUCTS LTD
7361 ADHOR ROAD, BUTTONWILLOW, CA 93206

On September 25, 2007 the Kern County Environmental Health Services Department (KCEHSD) conducted a complaint inspections/investigations at 7361 Adhor Rd, Buttonwillow, CA, at PORT ORGANIC PRODUCTS LTD. The enclosed inspection report details the observations and violations noted during the inspection/investigation. Violations of the California Health and Safety Code (HSC) noted during the inspection and corrective actions necessary to gain compliance are detailed in the enclosed report as well.

Please feel free to contact me at (661) 862-8725 with any questions or concerns you may have regarding this matter.

Sincerely,

Michael Aranda

Environmental Health Specialist
Unified Hazardous Materials/Waste Program

MA:Enclosure

INSPECTION REPORT

Date:	09-25-2007		
Facility Name:	PORT ORGANIC PRODUCTS LTD		
Facility Address:	7361 Adhor Rd, Buttonwillow, CA 93206	EPA ID #:	none
Specialist/Inspector:	Michael Aranda	Facility ID#:	FA0005811

INVESTIGATION/INSPECTION NARRATION

On September 25, 2007 at approximately 1300 hours Barbara HOUGHTON and I visited Port Organic Products, located at 7361 Adhor Rd in Buttonwillow, to conduct a complaint investigation concerning mismanagement of hazardous waste generated at the facility, lack of Personal Protective Equipment (PPE) for employees, and the allegation of an unpermitted 10,000 gallon underground storage tank (UST) containing aqueous ammonia.

HOUGHTON and I entered the facility's office and spoke with Becky PULLEN, Shane AMES, and Isaac NELSON. HOUGHTON explained the reason for our visit and the allegations of the complaint. PULLEN stated that the allegations were probably provided by a disgruntled employee, John FAUBUS, who was recently terminated by Port Organic. I.NELSON stated that FAUBUS was escorted from the premises by Sheriff deputies on 9/24/07 for refusing to leave the facility grounds. I asked I.NELSON if HOUGHTON and I would be permitted to perform an inspection of the site to investigate the allegations. I.NELSON said he had no objection to us performing the inspection, but would need to obtain permission to consent to the inspection from Ken NELSON, owner/operator of Port Organic. I.NELSON also inquired as to what the inspection would entail. HOUGHTON explained to I.NELSON that we would conduct a routine inspection of the site and would consist of a review of the facility's records, a walk through of the facility, taking photographs, and possibly obtaining samples for analytical testing. I.NELSON asked what specific records we would need to review. I told him we would need to see their Business Plan documents, employee training records, Material Safety Data Sheets, Policy and Procedures manuals (for hazardous material), California Accidental Release Prevention Program (CalARPP) documents, and their Site/Facility Layout map. I.NELSON and AMES explained that Jim ZABEN, former Plant Manager of Port Organic, was the individual responsible for maintaining those documents, but ZABEN had ended his employment with Port Organic earlier in the month. I informed I.NELSON that ZABEN is listed as an emergency contact for Port Organic for our Department, and if ZABEN is no longer employed with Port Organic, the facility would need to update their emergency contact information. I.NELSON left the office to attempt to contact K.NELSON via cell phone. He returned shortly thereafter and stated K.NELSON had consented to allow HOUGHTON and I to perform the inspection, but K.NELSON requested to be present during the facility walk through. We agreed to wait for K.NELSON, I.NELSON and

AMES attempted to retrieve the requested documents.

When the documents were provided HOUGHTON and I reviewed the facility's MSDSs, Employee Policy and Procedure manual, Environmental Health and Safety manual, and laboratory analytical documents. While reviewing the documents, I.NELSON said Roy CARROL, Port Organic's environmental consultant, was en route to the facility to assist HOUGHTON and I with any questions or concerns we had while performing the inspection.

K.NELSON arrived at the facility and inquired as to the reason for our visit to Port Organic. I explained to him that HOUGHTON and I were investigating allegations of possible mismanagement of hazardous waste generated at the facility, lack of PPE for employees, and the allegation of an unpermitted 10,000 gallon underground storage tank containing aqueous ammonia. K.NELSON said that Port Organic does not generate any hazardous waste and has analytical records to support his coment. Additionally, K.NELSON stated there were no USTs at the site. K.NELSON informed me that occasionally employees do not follow the facility's safety protocols, but when that does occur the employee is penalized with reprimands, including leave without pay.

K.NELSON, HOUGHTON, and I began our site inspection at a barn just west of the facility's fertilizer processing yard. K.NELSON explained to us that fish meal is stored in the barn and is transferred from the barn to one of the facility's reactors, where the protein in the fish meal is enzymatically digested to release nitrogen and the by-product is used as an organic fertilizer. Along the west wall of the barn I observed four 55 gallon poly drums, labeled "ALCALASE" that were full. I asked K.NELSON what the Alcalase product was used for. He stated it is an ingredient used for their organic fertilizer, which assists with the breakdown of proteins. Along the east wall of the barn, next to the barn door, I observed an unlabeled white 55 gallon poly drum and two 55 gallon drums labeled hydraulic oil. I asked K.NELSON about the contents of the white poly drum and he informed me it contained waste oil. Along the north wall of the barn I observed two large compressed gas cylinders, one labeled "OXYGEN" and the other labeled "ACETYLENE". A review of the facility's most recent Hazardous Material Business Plan inventory, updated on February 13, 2007 by ZABAN, does not list Alcalase, waste oil, hydraulic oil, oxygen, or acetylene.

We exited the barn and walked back toward the fertilizer processing yard. Roy CARROL arrived at the facility shortly thereafter. K.NELSON explained to us how Port Organic's organic fertilizer is processed from raw materials such as fish meal and bat guano and mixed with specific enzymes and other ingredients. The breakdown of the raw materials results in an organic fertilizer that Port Organic sells to farming industries. K.NELSON explained that the processed product leaves the reactors and is fed through a screen, which separates the large undigested material from the finished product. The finished product is then plumbed into one of the aboveground storage tanks, located just south of the reactor and east of the office trailer. Directly east of the reactor were two aboveground tanks, one containing sulfuric acid and the other containing phosphoric acid. HOUGHTON asked what the acids were used for. K.NELSON

explained that the acids are used as stabilizers, which lower the pH of the processing material in the reactor. I asked K.NELSON if Port Organic had a written policy and procedure detailing how and when acid is added to the reactor. K.NELSON stated he was unaware of any such document on file at Port Organic, but that CARROL would look into the matter further and if necessary would develop and generate such protocols. K.NELSON said the process of when to add the acids "has not yet been perfected yet" and "we almost got it down". I asked K.NELSON to elaborate, and he stated that strong caustics and strong acids do not "mix well" and occasionally the acid is added to the process at the wrong time. K.NELSON also informed me that this had not happened in a long time.

Southeast of the reactor I observed waste water run-off pooling around a square drainage sump, with etched concrete around it. I asked K.NELSON where the sump leads to. He told me it is plumbed to an irrigation canal, located to the northeast of the processing plant. I asked K.NELSON if he could show me where the effluent drained to and he obliged. Along the irrigation canal I observed a metal drain pipe which K.NELSON indicated to be the drainage for his waste water run-off. The drain pipe was approximately two to two and half inches in diameter, designed to allow effluent to drain directly into the irrigation canal. K.NELSON stated he has an agreement with the neighboring farmers, to allow them to use his run-off, which according to K.NELSON contains "fertilizer". I informed K.NELSON that the run-off from his facility is considered industrial wastewater and that the current method of disposal does not comply with wastewater discharge requirements. I told K.NELSON he may need to explore the idea of implementing a wastewater reclamation system for the facility.

When returned to the processing area I asked K.NELSON where aqueous ammonia is stored at the facility. K.NELSON informed me there was no ammonia currently being stored at the facility. I asked K.NELSON if Port Organic was to store ammonia, where would it be stored. K.NELSON told me the ammonia would be stored in a tank directly south of the organic fertilizer tank farm. K.NELSON then told me the tanks which were used to store aqueous ammonia were not in use at this time, the former ammonia tank area was now being occupied by organic fertilizer tanks. I informed K.NELSON the change in the facility's operation may constitute a change in their process and would require Port Organic to notify KCEHSD of the change. I then asked K.NELSON if Port Organic had planned on storing aqueous ammonia in the near future, and he responded saying they would. I asked K.NELSON what he uses the ammonia for and he said "it's used for testing" of a "home & garden" product Port Organic plans to mass produce and sell commercially to the public. I then asked K.NELSON "is there any ammonia currently being stored on site?". K.NELSON said there was no ammonia being stored at the facility. CARROLL stated "there are no underground tanks anywhere on site."

We walked to the east of the processing area where I observed several large empty poly containers along the east fence line. One of the containers had a crack approximately three feet from the bottom of the tank. I asked I.NELSON about the crack and he stated the tank was hit with a forklift. I.NELSON then stated the tank was empty when it was struck by the forklift. I asked I.NELSON if he knew what type of substance the tank had previously stored, and he

informed me he believed it was used to store organic fertilizer. South of the office building I observed a two hundred and fifty (250) gallon tote labeled "DIESEL". I asked I.NELSON if the container did contain diesel and he replied "yes". ". A review of the facility's most recent Hazardous Material Business Plan inventory, updated on February 13, 2007 by ZABAN, does not list diesel.

I observed a scrubber system along the east fence line and asked K.NELSON what it was used for. He told me it was used to minimize the odor produced when organic fertilizers are put into holding tanks. I asked K.NELSON to further explain the process, but I was unable to understand his explanation.

I walked to the north, toward a red plywood structure, and asked K.NELSON what was in the structure. K.NELSON told me "it's a container." I asked K.NELSON if there was anything in the container, and in turn he asked I.NELSON if there was anything in the container. K.NELSON then said he believed the container was empty, but was not sure. K.NELSON then stated there might be product in the container. I asked K.NELSON what he meant by "product" and he stated there may be "aqua ammonia" in the tank. I then asked K.NELSON how much aqua ammonia was in the tank and he stated "about a thousand gallons". I asked K.NELSON about the containers capacity and the duration of time the container has been in the ground. K.NELSON said the container has a capacity of ten thousand gallons and had been placed in the ground approximately one month. I informed K.NELSON that the container in the ground constituted an underground storage tank and would therefore have to comply with applicable UST laws and regulations. I asked K.NELSON if he informed KCEHSD of the change in his process and he stated he had not. I asked K.NELSON if he had obtained permits and oversight by KCEHSD to place the tank in the ground and he stated he had not. CARROL exclaimed "this is not an underground storage tank". I informed CARROL and K.NELSON that if ten percent or more of the tank's capacity is below grade, it is considered to be an underground storage tank. CARROL stated he was unaware that the placing of the tank in the ground constituted the tank as being an underground storage tank. I again explained to CARROL and K.NELSON that based on UST laws and regulations, the placing of the tank into the ground meets the criteria of a UST. I asked K.NELSON why he placed the tank in the ground and he explained he had it put in the ground to reduce the amount of vapors produced. I asked K.NELSON if he could elaborate and he told me "the ground keeps it cool" thus decreasing the amount of vapors produced by the aqua ammonia in the tank. K.NELSON then said the ammonia was needed for the testing of his home and garden product,and as soon as the testing was complete they would not be using aqua ammonia.

I asked K.NELSON if he could remove the plywood on top of the plywood structure so that HOUGHTON and I could view the tank. K.NELSON agreed, and removed a section of the plywood at the northwest corner of the structure. Immediately after the removal of the plywood section I detected a noticeable odor of ammonia and experienced irritation of the eyes, mucus membrane linings of the nasal passages, airway and lungs. HOUGHTON asked K.NELSON if the tank was "product tight" and he responded in a manner to suggest he was unsure. I looked into the structure and observed a ten-thousand gallon fiberglass tank with fabricated metal

secondary containment. The dimensions of the tank measured approximately 10' in diameter with a 30' depth. HOUGHTON asked K.NELSON if the tank was properly sealed in order to prevent the release of contents. K.NELSON stated Port Organic had used sealant to ensure the port openings and valve connections were properly sealed and secured. I observed at the top of the tank a port opening lid secured with expansion foam. The expansion foam was used in an effort to minimize the potential for exposure resulting in human harm or release to the environment, I asked K.NELSON and CARROL to place the plywood back on the top of the structure and to not attempt to remove the UST. I informed K.NELSON that although the UST was placed in the ground without obtaining a Permit to Construct an Underground Storage Tank from KCEHSD, the UST was still under the permitting authority of KCEHSD. I told K.NELSON the tank would eventually have to be removed from the ground, because KCEHSD would not grant a UST permit to Port Organic for operation their UST. A permit would not be issued since the tank was installed without KCEHSD oversight and did not meet the requirements of Title 23 of the California Code of Regulations, governing the storage of hazardous substances in underground storage tanks . K.NELSON stated he would remove the tank from the ground, but would not do so until directed by KCEHSD. I told K.NELSON I did not want Port Organic to remove the tank from the ground until Port Organic provided me with a written procedure for the removal of the UST. I told K.NELSON and CARROL the procedures would need to include all hazards associated with the tank's removal, methods for inerting the tank, equipment to be used for its removal, applicable air monitoring, and policies and procedures addressing the removal process as well as workers' safety.

I then asked K.NELSON what his plans were for the aqua ammonia. He told me he was using it for testing of his home and garden fertilizer. I asked K.NELSON if he had done any recent testing. He told me he had. I asked K.NELSON what the testing process entails. He told me aqua ammonia is taken from the UST and transferred into a smaller aboveground tank (while pointing to a blue 100 gallon poly tank adjacent to the northeast reactor) and then injected into the reactor during the fertilizer production process. I asked K.NELSON if Port Organic had any written policy and procedure for the transfer and injection of the aqua ammonia into the reactor. K.NELSON stated Port Organic had no such written policy that he was aware of. I asked K.NELSON if Port Organic had any respiratory protection devices to be worn by the workers during the transfer and injection process. I.NELSON stated that Port Organic has a mask that the workers use. He and AMES led me to a container at the northwest corner of the office building and showed me an air purifying respirator (APR) with ammonia cartridges. I asked I.NELSON "how do the workers know when the cartridges are saturated and need to be replaced?" I.NELSON did not answer. I asked if there were any additional cartridges for the APR. AMES went into the office and retrieved two packaged ammonia cartridges. I informed I.NELSON that Port Organic may need to develop a respiratory protection plan for their employees.

HOUGHTON and I performed an exit interview with I. and K. NELSON, CARROL, AMES, and other Port Organic personnel.

REPORT OF VIOLATIONS

1. Violation of HSC 6.7, §25284 (a)(1). Failure to obtain a permit to own or operate an underground storage tank.

> *(a)(1) Except as provided in subdivision (c), no person may own or operate an underground storage tank unless a permit for its operation has been issued by the local agency to the owner or operator of the tank, or a unified program facility permit has been issued by the local agency to the owner or operator of the unified program facility on which the tank is located.*

It was determined during the inspection that PORT ORGANIC PRODUCTS. LTD was operating a ten thousand (10,000) gallon fiberglass underground storage tank, containing approximately one thousand (1,000) gallons of aqueous ammonia without a permit from this Department.

2. Violation of HSC 6.95 §25503.5 (a)(1). Failure to provide an accurate, up to date, and complete hazardous materials inventory.

> *(a) (1) A business, except as provided in subdivisions (b), (c), and (d), shall establish and implement a business plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to Section 25503, if the business handles a hazardous material or a mixture containing a hazardous material that has a quantity at any one time during the reporting year that is any of the following:*
>
> *(A) Equal to, or greater than, a total weight of 500 pounds or a total volume of 55 gallons.*
> *(B) Equal to, or greater than, 200 cubic feet at standard temperature and pressure, if the substance is compressed gas.*

At the time of the inspections PORT ORGANIC PRODUCTS. LTD had not listed Alcalase, waste oil, hydraulic oil, oxygen, acetylene, or diesel on its Business Plan chemical inventory as required.

3. Violation of HSC §25509 (a)(5). Failure to provide an accurate site layout/facility map.

> *(a) The annual inventory form shall include, but shall not be limited to, information on all of the following which are handled in quantities equal to or greater than the quantities specified in subdivision (a) of Section 25503.5:...*
>
> *(5) Sufficient information on how and where the hazardous materials disclosed in paragraphs (1), (2), and (3) are handled by the business to allow fire, safety, health, and other appropriate personnel to prepare adequate emergency responses to potential releases of the hazardous materials.*

PORT ORGANIC PRODUCTS. LTD intentionally relocated a ten thousand (10,000) gallon capacity aboveground tank formerly used to store aqueous ammonia aboveground, to an underground location on the facility. By performing this act Port Organic potentially endangered emergency response personnel by failing to supply sufficient information concerning where the aqueous ammonia was being stored at the site. Additionally, K.NELSON was reluctance to disclose the location of the aqueous ammonia tank. He initially stated Port Organic was not storing aqueous ammonia, that the aboveground tanks which had previously held aqueous ammonia were now being used to store organic fertilizer. Only after some probing did Port Organic Products LTD reveal the location of the underground tank containing aqueous ammonia.

CORRECTIVE ACTIONS

1. Immediately discontinue the operation of the ten thousand gallon fiberglass underground storage tank containing aqueous ammonia.

2. Immediately submit to this Department a written work plan which outlines procedures for the removal of the underground storage tank system.

3. Within thirty days update the hazardous material business plan inventory to include all chemicals, above threshold quantities, stored on site.

4. Within thirty days provide an accurate site map which provides sufficient information as to where Port Organic Products LTD stores and/or handles hazardous materials at 7361 Adhor Rd.

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
MATTHEW CONSTANTINE, R.E.H.S., Director
2700 "M" STREET, SUITE 300
BAKERSFIELD, CA 93301-2370
Voice: (661) 862-8700
Fax: (661) 862-8701
TTY Relay: (800) 735-2929
Web: www.co.kern.ca.us/eh
E-mail: eh@co.kern.ca.us

RESOURCE MANAGEMENT AGENCY
DAVID PRICE III, RMA DIRECTOR
Animal Control Department
Community and Economic Development Department
Engineering and Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

April 18, 2008

Mr. Kenneth Nelson
Port Organic Products LTD
c/o SHINAULT BAKER AND CO CPAs
5060 California Avenue, Suite 650
Bakersfield, CA 93309

SUBJECT: SETTLEMENT AGREEMENT FOR PORT ORGANIC PRODUCTS, LTD (BH 001-03-08)

Dear Mr. Nelson:

This Department has completed the evaluation of all factors associated with the settlement of the administrative enforcement action being considered. Included with this correspondence is a settlement agreement entitled "Consent Order," which was previously discussed.

Enclosed you will find Revision 1 of the agreement that addresses the updated payment schedule that was recently discussed. You have again been provided with two signed Consent Order documents. One document is to be countersigned and returned to this office with the first payment of $3,079.50. The other document is your copy.

If you have any questions, please contact the undersigned at (661) 862-8756.

Sincerely,

Joe Cañas, R.E.H.S.
Hazardous Materials Specialist IV
Unified Hazardous Materials/Waste Program

Enclosures

cc: File

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
HAZARDOUS MATERIALS MANAGEMENT PROGRAM

CERTIFIED UNIFIED PROGRAM AGENCY (CUPA)

In the Matter of: Port Organic Products LTD 7361 Adhor Rd Buttonwillow CA 93206 Facility ID No. FA0005811 Respondent	) Docket No. BH 001-03-08)) **CONSENT ORDER – Revision 1**)))) Health and Safety Code) Section 25404.1.1)

The Kern County Environmental Health Services Department, Certified Unified Program Agency (Agency), and Port Organic Products LTD (Respondent) enter into this Consent Order (Order) and agree as follows:

1.0 Respondent handles and/or stores hazardous materials and operates and/or operated an Underground Storage Tank (UST) at 7361 Adhor Rd in Buttonwillow, California (Site).

2.0 The Agency inspected and/or investigated the Site on September 25, 2007.

3.0 The Agency alleges the following violations:

3.1 Respondent violated Health and Safety Code (HSC) Section 25284 (a)(1), failure to obtain a permit from the Agency to own or operate an underground storage tank.

3.2 The Respondent violated HSC Section 25503.5 (a)(1), failure to provide an accurate, up to date, and complete hazardous materials inventory.

3.3 The Respondent violated HSC Section 25509, failure to provide an accurate site layout/facility map.

4.0 A dispute exists regarding the alleged violations.

5.0 The parties wish to avoid the expense of litigation and to ensure prompt compliance.

6.0 Jurisdiction exists pursuant to HSC Section 25404.1.1.

7.0 Respondent waives any right to additional hearings in this matter.

8.0 This Consent Order shall constitute full settlement of the violations alleged above but does not limit the Agency from taking appropriate enforcement action concerning other violations.

SCHEDULE FOR COMPLIANCE

9.0 The following summarizes the schedule for compliance with this Consent Order:

9.1 The following items must be in compliance within the time frame specified:

9.1.2 Immediately discontinue the use of the unpermitted underground storage tank and arrange for proper removal.

9.1.2 Within 30 days update Port Organic Products LTD hazardous materials inventory to reflect all hazardous materials above regulatory threshold quantities stored at the Site. The Department acknowledges receipt of the updated chemical inventory within the prescribed deadline.

9.1.3 Within 10 days provide an accurate site layout/facility map which discloses where hazardous materials are stored and handled at the Site. The Department acknowledges receipt of the site map within the prescribed compliance deadline.

9. 2 All submittals pursuant to this Consent Order shall be sent to:

Mrs. Barbara Houghton
Kern County Environmental Health Services Department
Certified Unified Program Agency
2700 "M" Street, Suite 300
Bakersfield, CA 93301

9.3 Communications: All communications from Agency shall be communicated to Respondent in writing by the Manager of the Kern County Environmental Health Services Department, Certified Unified Program Agency, or his/her designee. No informal advice, guidance, suggestions, or comments by the Agency regarding reports, plans, specifications, schedules, or any other writings by Respondent shall be construed to relieve Respondent of its obligation to obtain such formal approvals as may be required.

9.4 Compliance with Applicable Laws: Respondent shall carry out this Order in compliance with all local, State, and federal requirements, including but not limited to requirements to obtain permits and to assure worker safety.

9.5 Liability: Nothing in this Consent Order shall constitute or be construed as a satisfaction or release from liability for any conditions or claims arising as a result of past, current, or future operations of Respondent, except as provided in this Consent Order. Notwithstanding compliance with the terms of this Consent Order, Respondent may be required to take further actions as are necessary to protect public health or welfare or the environment.

9.6 Government Liabilities: The Kern County Environmental Health Services Department shall not be held liable for injuries or damages to persons or property resulting from acts or omissions by Respondent or related parties in carrying out activities pursuant to this Consent Order, nor shall the County of Kern be held as a party to any contract entered into by Respondent or its agents in carrying out activities pursuant to this Consent Order.

9.7 Extension Requests: If Respondent is unable to perform any activity or submit any document within the time required under this Consent Order, the Respondent may, prior to expiration of the time, request an extension of time in writing. The extension request shall include a justification for the delay.

9.8 Extension Approvals: If the Agency determines that good cause exists for an extension, it will grant the request and specify in writing a new compliance schedule.

PAYMENT

10.0 Respondent shall pay the Agency a total of $9238.50*, of which $5,200 is penalty, $4,037.50 is reimbursement of this Agency's costs. The penalty must be paid in three equal payments of $3079.50 per month beginning in April 2008; the final payment is due by June 30, 2008. Respondent's checks shall be made payable to the Kern County Environmental Health Services Department and be delivered to:

Kern County Environmental Health Services Department
2700 "M" Street, Suite 300
Bakersfield, CA 93301

If Respondent fails to make payment as provided above, Respondent agrees to pay interest at the rate established pursuant to HSC Section 25360.1 and to pay all costs incurred by the Agency in pursuing collection, including attorney's fees.

* Amount reflects previous payment by RP of $297.50

OTHER PROVISIONS

11.0 Additional Enforcement Actions: By agreeing to this Consent Order, the Agency does not waive the right to take further enforcement actions, except to the extent provided in this Consent Order.

11.1 Penalties for Noncompliance: Failure to comply with the terms of this Consent Order may subject Respondent to civil penalties and/or punitive damages for any costs incurred by the Agency or other government agencies as a result of such failure, as provided by HSC Section 25188 and other applicable provisions of law.

11.2 Parties Bound: This Consent Order shall apply to and be binding upon Respondent and its officers, directors, agents, receivers, trustees, employees, contractors, consultants, successors, and assignees, including, but not limited to, individuals, partners, subsidiary and parent corporations, and upon the Agency and any successor Agency that may have responsibility for and jurisdiction over the subject matter of this Consent Order.

11.3 Effective Date: The effective date of this Consent Order is the date it is signed by the Agency.

11.4. Integration: This agreement constitutes the entire agreement between the parties and may not be amended, supplemented, or modified, except as provided in this agreement.

11.5 Compliance with Waste Discharge Requirements: Respondent shall comply with all applicable waste discharge requirements issued by the State Water Resources Control Board or the California Regional Water Quality Control Board.

Dated: _____

_____
Signature of Respondent's Representative

_____
Typed or Printed Name and Title
of Respondent's Representative

Dated: _____

_____
Matthew Constantine, Director
Kern County Environmental Health
Services Department

Attention: Mike Aranda
Environmental Heath Services Department
2700 "M" Street
Bakersfield, CA 93301

December 23, 2007

Immediately after Kern County Environmental Heath Services Department Inspection, on September 25, 2007 @ Port Organic Products LTD. 7361 Adhor Road, Port Organic Products (POP), discontinued the operation of the ten thousand gallon fiberglass underground storage tank containing less than 300 gallons aqua ammonia.

Upon receiving verbal permission from Mike Aranda and requiring no UST removal permit for recent 10,000 gallon tank project partially expose and mostly buried, we started the following procedure.

Tank Closure Procedures Overview
POP personnel followed a health and safety plan specific to the hazards associated with the tank closure project.

The following procedures were used during our removal project: OSHA 2226 - Excavations, OSHA, 29 CFR Part 1926, Occupational Safety and Health Standards - Excavations, OSHA, 29 CFR Part 1910, Occupational Safety and Health Standards and NIOSH "Criteria for a Recommended Standard - Working in Confined Space."

Aqua Ammonia was removed from tank prior to tank removal and properly managed and converted into fertilizer by Ken Nelson. The tank was triple washed and inspected. After the tank had been exposed and all the liquids removed, monitoring of the atmosphere in the tank was performed for potentially dangerous conditions such as a gas, high vapor level and a low Oxygen content. No vapors were present. Tank cleaning consisted of wiping, squeegeeing, and removing all liquids to the last drop from the tank. All liquids generated as a result of the tank cleaning process were used in fertilizer mixture.

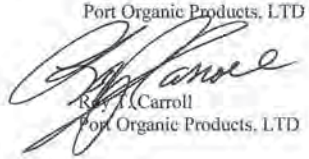
After tank cleaning, the tank was lifted via Eagle Trucking and Crane Service, Inc. in its entirety from the excavation and inspected aboveground. At this time no holes were noted in the tank, evidence of a release was not observed in the tanks steel secondary, the steel secondary was removed a few days later and no evidence of release were observed at this time. Also, a gas and fume detector was used and showed no reading of any detectable problems. The excavation was backfilled to original grade via backhoe rented from United Rental and 6 Truckloads of clean dirt purchased from Mashburn Transportation Services, Inc.

Our initial and immediate cost for removing tank and secondary has been $ 5100.07 in equipment rental, BW Gas Alert Micro Multi-4 Gas Detector for future and dirt (see attached receipts) labor approximately $ 3,500.00 to $ 4,000.00. Our anticipated cost for labor & cutting up and salvaging steel secondary is estimated to be around $ 3,000.00 to $ 4,000.00.

We have tried our very best to address this violation head-on. It is important to us to maintain our livelihood and the livelihood of our many employees and customers who depend on us.
A fine or penalty of any kind would be a detriment to our monthly operating budget and us. We would like to ask that the money and the tremendous amount of effort we have put into this tank violation is a lesson well learned and one we will not repeat.

Sincerely,

Ken Nelson
Port Organic Products, LTD



R. J. Carroll
Port Organic Products, LTD

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT

HAZARDOUS MATERIALS BUSINESS PLAN CERTIFICATION

FACILITY INFORMATION: Site ID: 001074

Facility Name:	PORT ORGANIC PRODUCTS LTD, FA0005811
Physical Location:	7361 ADHOR RD
City:	BUTTONWILLOW, CA
Facility Phone:	(661) 764-9670

OWNER INFORMATION FOR MAILING CORRESPONDENCE ONLY:

Name:	PORT ORGANIC PRODUCTS LTD
In Care of:	SHINAULT BAKER AND CO CPAs
Address:	5060 CALIFORNIA AVE #650
City, State, Zip:	BAKERSFIELD, CA 93309
Contact's Phone:	(661) 764-9670
Environmental Contact's E-Mail Address:	izaben@bak.rr.com

BILLING INFORMATION ONLY:

Name:	PORT ORGANIC PRODUCTS LTD
In Care of:	SHINAULT BAKER AND CO CPAs
Address:	5060 CALIFORNIA AVE STE 650
City, State, Zip:	BAKERSFIELD, CA 93309
Contact's Phone:	_____

EMERGENCY CONTACT INFORMATION:

NAME:	TITLE:	NAME:	TITLE:
Day Phone:		Day Phone:	
24 hr Phone:		24 hr Phone:	

REGULATED ACTIVITIES AT THIS FACILITY:

Hazardous Material Business Plan

Hazardous Waste Generator, Less than 5,000 #/year EPA ID #: _____

CAL-ARP COMPLEX SINGLE CATEGORY MODERATE RISK

CERTIFICATION:

PLEASE CHECK ALL THAT APPLY:

☐ The most recently submitted hazardous materials business plan and inventory are complete, accurate, and current. There have been no changes in the quantity of any hazardous materials as previously reported. No hazardous materials subject to the inventory requirements are being handled that are not currently listed.

☐ I have enclosed a business plan and inventory for the facility described above.

☐ Other: _____

I certify, under penalty of perjury, that the information provided above is correct.

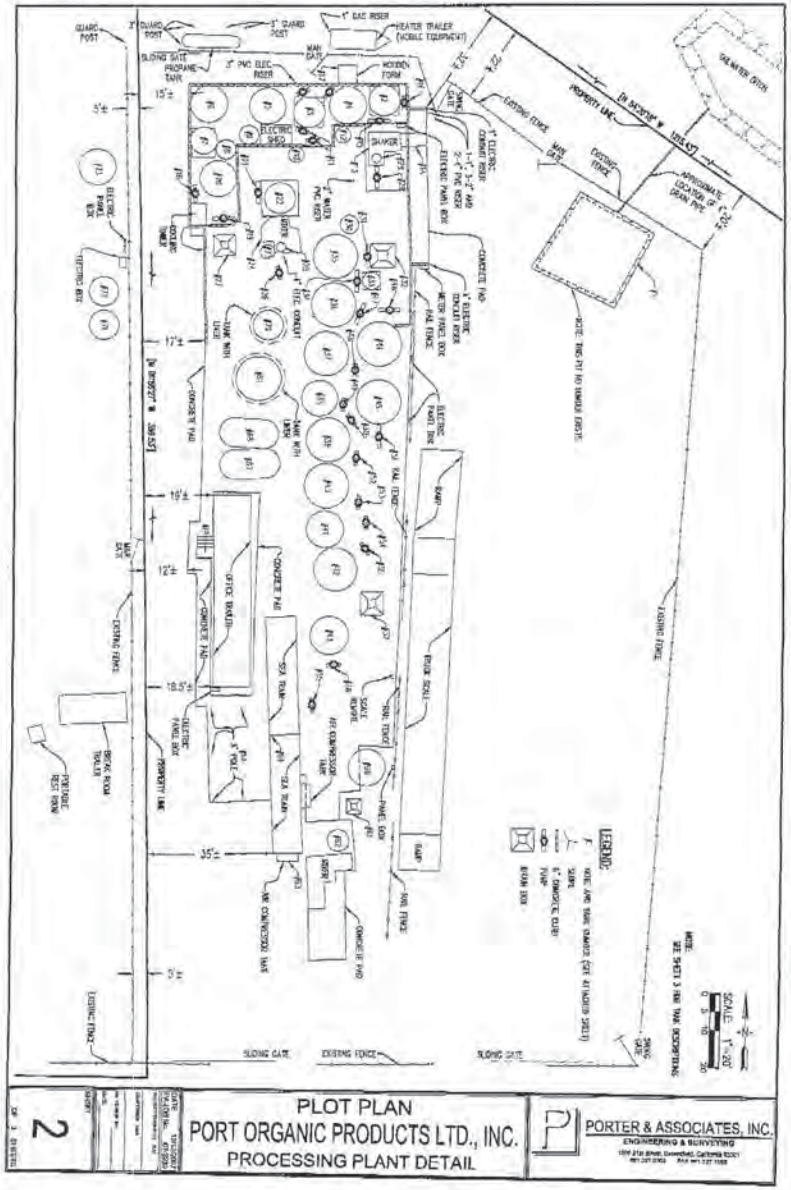
Printed Name _____ Title _____

Signature _____ Date _____

KERN COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT

HAZARDOUS MATERIALS BUSINESS PLAN CERTIFICATION

AMMONIA AQUA	12,336.00	LBS (POUNDS)	L
SULFURIC ACID	90,600.00	LBS (POUNDS)	L
POTASSIUM HYDROXIDE	12,800.00	LBS (POUNDS)	L
UN 32	16,605.00	LBS (POUNDS)	L
PHOSPHORIC ACID	32,097.00	LBS (POUNDS)	L
Ammonium Sulfate 21-0-0-24	100,000.00	LBS (POUNDS)	S
Sulfate of Potash	200,000.00	LBS (POUNDS)	S
Jenner 8 (Humic Substance)	6,000.00	GALLONS	L
Agrolizer (6-2-0) Liquid Organic Fertilizer	10,000.00	GALLONS	L
Marizyme Fishilizer (4-2-2) Liquid Organic Fertilizer	12,000.00	GALLONS	L
Marizyme Fishilizer (7-1-1) Liquid Organic Fertilizer	6,500.00	GALLONS	L
Marizyme Fishilizer (8-5-2) Liquid Organic Fertilizer	10,000.00	GALLONS	L
Liquid Fish Base	40,000.00	GALLONS	L


PLOT PLAN
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Appendix M

Public Health and Safety

Hydrogen Energy California (HECA) Project
4/11/2012
Emissions Summary

Compound	CAS #	Annual Rate (TPY)	CTG/HRSG Stack (lb/yr)	Coal Dryer Stack (lb/yr)	Cooling Tower (Power Block) (lb/yr)	Cooling Tower (Process Area) (lb/yr)	Cooling Tower (ASU) (lb/yr)	Auxiliary Boiler (lb/yr)	Ammonia Plant Startup Heater (lb/yr)	Emergency Generators (lb/yr)	Fire Water Pump (lb/yr)	Gasification Flare (lb/yr)	SRU Flare (lb/yr)	Rectisol Flare (lb/yr)	TG Thermal Oxidizer (lb/yr)	CO_2 Vent (lb/yr)	Manufacturing Complex (lb/yr)	Onsite Truck (lb/yr)	Onsite Train (lb/yr)	Fugitives (lb/yr)
Acetaldehyde	75-07-0	2.15E-02	3.66E+01	6.46E+00																
Ammonia*	7664-41-7	1.57E+02	1.56E+05	2.75E+04				1.03E+03									1.18E+05			1.14E+04
Antimony	7440-36-0	1.32E-02	2.24E+01	3.95E+00																
Arsenic	7440-38-2	2.88E-02	4.88E+01	8.61E+00	5.33E-02	8.70E-02	2.40E-02	8.89E-02	1.47E-03			1.43E-02	7.75E-04	3.78E-03	2.13E-02					
Benzene	71-43-2	2.94E-02	4.88E+01	8.61E+00				9.33E-01	1.54E-02			1.50E-01	8.14E-03	3.97E-02	2.24E-01					
Beryllium	7440-41-7	3.11E-03	5.28E+00	9.33E-01				5.33E-03	8.80E-05			8.56E-04	4.65E-05	2.27E-04	1.28E-03					
Cadmium	7440-43-9	1.15E-01	1.95E+02	3.44E+01				4.89E-01	8.07E-03			7.85E-02	4.26E-03	2.08E-02	1.17E-01					
Carbon Disulfide	75-15-0	5.50E-01	9.35E+02	1.65E+02																
Carbonyl Sulfide	463-58-1	2.69E+00														5.32E+03				5.94E+01
Chromium	7440-47-3	6.55E-03	1.04E+01	1.83E+00				6.22E-01	1.03E-02			9.99E-02	5.42E-03	2.64E-02	1.49E-01					
Chromium (hexavalent)	18540-29-9	1.83E-03	3.11E+00	5.49E-01																
Cobalt	7440-48-4	3.14E-03	5.28E+00	9.33E-01				3.73E-02	6.16E-04			5.99E-03	3.25E-04	1.59E-03	8.95E-03					
Copper*	7440-50-8	2.93E-04			1.03E-02	1.69E-02	4.66E-03	3.78E-01	6.23E-03			6.06E-02	3.29E-03	1.61E-02	9.06E-02					
Cyanides	57-12-5	6.87E-02	1.16E+02	2.04E+01																1.15E+00
Fluoride*	1101	1.44E-03			9.31E-01	1.52E+00	4.20E-01													
Formaldehyde	50-00-0	2.28E-01	3.46E+02	6.10E+01				3.33E+01	5.50E-01			5.35E+00	2.91E-01	1.42E+00	7.99E+00					
Hexane	110-54-3	5.87E-01						8.00E+02	1.32E+01			1.28E+02	6.97E+00	3.40E+01	1.92E+02					
Hydrochloric Acid	7647-01-0	1.55E-01	2.64E+02	4.66E+01																
Hydrogen Fluoride (hydrofluoric acid)	7664-39-3	5.98E-01	1.02E+03	1.79E+02																
Hydrogen Sulfide	7783-06-4	2.64E+00														3.01E+03				2.28E+03
Lead	7439-92-1	6.70E-03	1.14E+01	2.01E+00																
Manganese	7439-96-5	1.67E-02	2.11E+01	3.73E+00	2.66E+00	4.35E+00	1.20E+00	1.69E-01	2.79E-03			2.71E-02	1.47E-03	7.18E-03	4.05E-02					
Mercury	7439-97-6	7.71E-03	1.03E+01	4.98E+00				1.16E-01	1.91E-03			1.85E-02	1.01E-03	4.91E-03	2.77E-02					
Methanol	67-56-1	7.09E+00																		1.42E+04
Methyl Bromide (Bromomethane)	74-83-9	5.70E-01	9.70E+02	1.71E+02																
Methylene Chloride (Dichloromethane)	75-09-2	2.63E-02	4.47E+01	7.89E+00																
Naphthalene	91-20-3	3.01E-02	5.08E+01	8.97E+00				2.71E-01	4.47E-03			4.35E-02	2.36E-03	1.15E-02	6.50E-02					
Nickel	7440-02-0	5.35E-03	7.93E+00	1.40E+00				9.33E-01	1.54E-02			1.50E-01	8.14E-03	3.97E-02	2.24E-01					
Nitric Acid*	7697-37-2	8.19E-01																		1.64E+03
Phenol	108-95-2	4.40E-01	7.48E+02	1.32E+02																
Propylene*	115-07-1	6.33E+00																		1.27E+04
Selenium	7782-49-2	6.77E-03	1.14E+01	2.01E+00	4.43E-02	7.23E-02	2.00E-02	1.07E-02	1.76E-04			1.71E-03	9.30E-05	4.53E-04	2.56E-03					
Sulfuric Acid and Sulfates*	7664-93-9	1.14E+00	1.93E+03	3.41E+02																
Toluene	108-88-3	1.50E-03	6.71E-01	1.18E-01				1.51E+00	2.49E-02			2.43E-01	1.32E-02	6.42E-02	3.62E-01					
Vanadium*	7440-62-2	7.50E-04						1.02E+00	1.69E-02			1.64E-01	8.91E-03	4.34E-02	2.45E-01					
Diesel Particulate Matter*	DPM	7.72E-02								4.51E+01	1.84E+00							1.48E+01	9.26E+01	
2-Methylnaphthalene	91-57-6	7.83E-06						1.07E-02	1.76E-04			1.71E-03	9.30E-05	4.53E-04	2.56E-03					
3-Methylchloranthrene	56-49-5	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
7,12-Dimethylbenz(a)anthracene	57-97-6	5.22E-06						7.11E-03	1.17E-04			1.14E-03	6.20E-05	3.02E-04	1.71E-03					
Acenaphthene	83-32-9	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Acenaphthylene	208-96-8	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Anthracene	120-12-7	7.83E-07						1.07E-03	1.76E-05			1.71E-04	9.30E-06	4.53E-05	2.56E-04					
Benz(a)anthracene	56-55-3	2.81E-05	4.68E-02	8.25E-03				8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Benzo(a)pyrene	50-32-8	3.91E-07						5.33E-04	8.80E-06			8.56E-05	4.65E-06	2.27E-05	1.28E-04					
Benzo(b)fluoranthene	205-99-2	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Benzo(g,h,i)perylene	191-24-2	3.91E-07						5.33E-04	8.80E-06			8.56E-05	4.65E-06	2.27E-05	1.28E-04					
Benzo(k)fluoranthene	207-08-9	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Chrysene	218-01-9	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Dibenzo(a,h)anthracene	53-70-3	3.91E-07						5.33E-04	8.80E-06			8.56E-05	4.65E-06	2.27E-05	1.28E-04					
Dichlorobenzene	106-46-7	3.91E-04						5.33E-01	8.80E-03			8.56E-02	4.65E-03	2.27E-02	1.28E-01					
Fluoranthene	206-44-0	9.78E-07						1.33E-03	2.20E-05			2.14E-04	1.16E-05	5.67E-05	3.20E-04					
Fluorene	86-73-7	9.13E-07						1.24E-03	2.05E-05			2.00E-04	1.08E-05	5.29E-05	2.98E-04					
Indeno(1,2,3-cd)pyrene	193-39-5	5.87E-07						8.00E-04	1.32E-05			1.28E-04	6.97E-06	3.40E-05	1.92E-04					
Phenanathrene	85-01-8	5.54E-06						7.55E-03	1.25E-04			1.21E-03	6.59E-05	3.21E-04	1.81E-03					
Pyrene	129-00-0	1.63E-06						2.22E-03	3.67E-05			3.57E-04	1.94E-05	9.44E-05	5.33E-04					
Total Combined HAPs and TACs (tpy)		**181.47**	**81.44**	**14.37**	**0.00**	**0.00**	**0.00**	**0.93**	**0.01**	**0.02**	**0.00**	**0.07**	**0.00**	**0.02**	**0.10**	**4.17**	**59.17**	**0.01**	**0.05**	**2.11E+01**
Total HAPs* (tpy)		**15.94**	**2.46**	**0.44**	**0.00**	**0.00**	**0.00**	**0.42**	**0.01**	**0.00**	**0.00**	**0.07**	**0.00**	**0.02**	**0.10**	**4.17**	**0.00**	**0.00**	**0.00**	**8.25E+00**

Note:
* Denotes pollutants that are not listed as Federal HAPs. These pollutants are not included in the HAP total provided. As shown, combined annual HAP emissions are less than 25 tons per year. Additionally, individual HAP emissions are below 10 tons per year.

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Annual emissions based on 100 percent load at annual average temperature (65°F)

CT Fuel Input (Yearly Average - 65°F) =	2,537	10^6 Btu/hr (higher heating value)
Duct Burner Heat Input (Yearly Average - 65°F) =	290	10^6 Btu/hr (higher heating value)
Total HRSG Heat Input (Yearly Average - 65°F) =	2,827	10^6 Btu/hr (higher heating value)

Hourly emissions based on 100 percent load at average high ambient temperature (97°F)

CT Fuel Input (Avg. High Ambient - 97°F) =	2,583	10^6 Btu/hr (higher heating value)
Duct Burner Heat Input (97°F) =	278	10^6 Btu/hr (higher heating value)
Total HRSG Heat Input (97°F) =	2,861	10^6 Btu/hr (higher heating value)

HRSG

HRSG (Firing Syngas) Normal Operating Hours =	8000	hr/yr
HRSG (Firing Natural Gas) Normal Operating Hours =	336	hr/yr
HRSG Startup Hours =	105	hr/yr
HRSG Shutdown Hours =	18	hr/yr
Total HRSG Operating Hours	**8,459**	**hr/yr**

Coal Dryer

Coal Dryer Normal Operating Hours =	8000	hr/yr
Coal Dryer Startup Hours =	102	hr/yr
Coal Dryer Shutdown Hours =	8	hr/yr
Total Coal Dryer Operating Hours	**8,110**	**hr/yr**

Exhaust from HRSG normal operation would be splitted into	**85%**	**to HRSG stack**
	15%	**to coal dryer stack**

			HRSG + Coal Dryer					
			Toal Hourly Combined Emission	**Total Annual Combined Emissions**	**CTG/HRSG Stack**		**Coal Dryer Stack**	
Compound	**CAS #**	**Emission Factor** ($lb/10^{12}$ Btu coal)	**Hourly** (lb/hr)	**Annual** (lb/yr)	**Hourly** (lb/hr)	**Annual** (lb/yr)	**Hourly** (lb/hr)	**Annual** (lb/yr)
Acetaldehyde	75-07-0	1.8	5.15E-03	4.30E+01	4.38E-03	3.66E+01	7.72E-04	6.46E+00
Ammonia	7664-41-7	5 ppm	2.17E+01	1.84E+05	1.85E+01	1.56E+05	3.20E+00	2.75E+04
Antimony	7440-36-0	1.1	3.15E-03	2.63E+01	2.68E-03	2.24E+01	4.72E-04	3.95E+00
Arsenic	7440-38-2	2.4	6.87E-03	5.74E+01	5.84E-03	4.88E+01	1.03E-03	8.61E+00
Benz(a)anthracene	56-55-3	0.0023	6.58E-06	5.50E-02	5.59E-06	4.68E-02	9.87E-07	8.25E-03
Benzene	71-43-2	2.4	6.87E-03	5.74E+01	5.84E-03	4.88E+01	1.03E-03	8.61E+00
Beryllium	7440-41-7	0.26	7.44E-04	6.22E+00	6.32E-04	5.28E+00	1.12E-04	9.33E-01
Cadmium	7440-43-9	9.6	2.75E-02	2.30E+02	2.33E-02	1.95E+02	4.12E-03	3.44E+01
Carbon disulfide	75-15-0	46	1.32E-01	1.10E+03	1.12E-01	9.35E+02	1.97E-02	1.65E+02
Chromium (hexavalent)	18540-29-9	0.15	4.38E-04	3.66E+00	3.72E-04	3.11E+00	6.57E-05	5.49E-01
Chromium	7440-47-3	0.51	1.46E-03	1.22E+01	1.24E-03	1.04E+01	2.19E-04	1.83E+00
Cobalt	7440-48-4	0.26	7.44E-04	6.22E+00	6.32E-04	5.28E+00	1.12E-04	9.33E-01
Cyanides	57-12-5	5.7	1.63E-02	1.36E+02	1.39E-02	1.16E+02	2.45E-03	2.04E+01
Formaldehyde	50-00-0	17	4.86E-02	4.07E+02	4.13E-02	3.46E+02	7.30E-03	6.10E+01
Hydrochloric acid	7647-01-0	13	3.72E-02	3.11E+02	3.16E-02	2.64E+02	5.58E-03	4.66E+01
Hydrogen fluoride (Hydrofluoric acid)	7664-39-3	50	1.43E-01	1.20E+03	1.22E-01	1.02E+03	2.15E-02	1.79E+02
Lead	7439-92-1	0.56	1.60E-03	1.34E+01	1.36E-03	1.14E+01	2.40E-04	2.01E+00
Manganese	7439-96-5	1.0	2.98E-03	2.49E+01	2.53E-03	2.11E+01	4.46E-04	3.73E+00
Mercury	7439-97-6	see notes	1.83E-03	1.53E+01	1.21E-03	1.03E+01	6.14E-04	4.98E+00
Methyl bromide (Bromomethane)	74-83-9	47.7	1.36E-01	1.14E+03	1.16E-01	9.70E+02	2.05E-02	1.71E+02
Methylene chloride (Dichloromethane)	75-09-2	2.2	6.29E-03	5.26E+01	5.35E-03	4.47E+01	9.44E-04	7.89E+00
Naphthalene	91-20-3	2.5	7.15E-03	5.98E+01	6.08E-03	5.08E+01	1.07E-03	8.97E+00
Nickel	7440-02-0	0.39	1.12E-03	9.33E+00	9.48E-04	7.93E+00	1.67E-04	1.40E+00
Phenol	108-95-2	36.8	1.05E-01	8.80E+02	8.95E-02	7.48E+02	1.58E-02	1.32E+02
Selenium	7782-49-2	0.56	1.60E-03	1.34E+01	1.36E-03	1.14E+01	2.40E-04	2.01E+00
Sulfuric acid and sulfates	7664-93-9	95	2.72E-01	2.27E+03	2.31E-01	1.93E+03	4.08E-02	3.41E+02
Toluene	108-88-3	0.033	9.44E-05	7.89E-01	8.03E-05	6.71E-01	1.42E-05	1.18E-01

Notes:

1) For the normal operating scenario, the unit will primarily fire syngas with natural gas as a backup fuel.

2) Emission factors are taken from Wabash River test data and the National Energy Technology Laboratory, U.S. Dept of Energy, Major Environmental Aspects of Gasification-based Power Generation Technologies, Final Report, December 2002.

3) Ammonia slip from the SCR (5 parts per million volume dry @ 15 percent O_2) - provided by Fluor - see Criteria Pollutant emission spreadsheet for details.

4) Btu = British thermal units.

5) Mercury (Hg) emission estimates are based on the following assumptions:

Total gasifier coal feed rate	4850 stpd	
Hg concentration in coal feed	0.09 ppmw	
Total Hg in coal feed	0.873 lb/day	= 0.09 lb Hg/10^6 lb coal x 2000 lb/ton
Uncontrolled coal dryer Hg emission (5.5% of feed) from volatilization	0.048 lb/day	
Coal dryer Hg emissions control efficiency	80%	
Controlled coal dryer Hg emission from volatilization	0.0096 lb/day	
Total Controlled coal dryer Hg emission from volatilization + HRSG flue gas	0.0147 lb/day	
Hg in syngas from gasifier	0.863 lb/day	
Control efficiency of the mercury cleanup in the syngas	96%	
Controlled HG emissions in HRSG flue gas	0.034 lb/day	
Controlled HG emissions from the HRSG stack	0.029 lb/day	

6) The emission rates of natural gas firing (startup, shutdown, and 336 hours of steady state operation) were calculated based on the emission factors used for the syngas firing.

7) Approximiately 15% of the HRSG exhaust is directed to the coal dryer where is passes over pulverized coal to dry it before it is injected into the gasifier. Therefore, it was assumed that HRSG/coal dryer exhaust is split based on 85%/15%. No exhaust will be directed to the coal dryer during natural gas operations or portions of startup and shutdown.

8) Annual emissions for both HRSG and coal dryer based on the higher hours of operation of the HRSG

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Cooling Tower Operating Parameters

	Power Block	Process Area	ASU
Cooling water (CW) circulation rate, gpm =	95,500	162,582	44,876
CW circulation rate (million lb/hr) =	48	81	22
CW dissolved solids (ppmw) =	9,000	9,000	2,000
Drift, fraction of circulating CW =	0.0005%	0.0005%	0.0005%
Cooling Tower Operating Hours	8,668	8,314	8,314
Number of cells in tower	12	13	4

Assumed maximum TDS in circulating cooling water, normally TDS will be less.

Power Block Cooling Tower

Compound	CAS # / OEHHA reference #	Emission Factor (ppm)	Hourly (lb/hr)	Annual (lb/yr)	Hourly per Cell (lb/hr)	Annual per Cell (lb/yr)
Arsenic	7440-38-2	0.026	6.15E-06	5.33E-02	5.12E-07	4.44E-03
Copper	7440-50-8	0.005	1.19E-06	1.03E-02	9.95E-08	8.62E-04
Fluoride	1101	0.45	1.07E-04	9.31E-01	8.95E-06	7.76E-02
Manganese	7439-96-5	1.29	3.07E-04	2.66E+00	2.56E-05	2.22E-01
Selenium	7784-49-2	0.02	5.11E-06	4.43E-02	4.26E-07	3.69E-03

Notes:

1) The emissions are based on the concentrations of each constituent found in the raw cooling water analysis, cycles of concentration, and drift rate.

2) Arsenic ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

3) Copper ppm value shown is one-half of stated detection limit.

4) Fluoride ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

5) Manganese ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

6) Selenium ppm value shown taken as average of analytical test results (DWR).

Process Area Cooling Tower

Compound	CAS # / OEHHA reference #	Emission Factor (ppm)	Hourly (lb/hr)	Annual (lb/yr)	Hourly per Cell (lb/hr)	Annual per Cell (lb/yr)
Arsenic	7440-38-2	0.026	1.05E-05	8.70E-02	8.05E-07	6.69E-03
Copper	7440-50-8	0.005	2.03E-06	1.69E-02	1.56E-07	1.30E-03
Fluoride	1101	0.45	1.83E-04	1.52E+00	1.41E-05	1.17E-01
Manganese	7439-96-5	1.29	5.23E-04	4.35E+00	4.02E-05	3.34E-01
Selenium	7784-49-2	0.02	8.70E-06	7.23E-02	6.69E-07	5.56E-03

Notes:

1) The emissions are based on the concentrations of each constituent found in the raw cooling water analysis, cycles of concentration, and drift rate.

2) Arsenic ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

3) Copper ppm value shown is one-half of stated detection limit.

4) Fluoride ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

5) Manganese ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

6) Selenium ppm value shown taken as average of analytical test results (DWR).

ASU Cooling Tower

Compound	CAS # / OEHHA reference #	Emission Factor (ppm)	Hourly (lb/hr)	Annual (lb/yr)	Hourly per Cell (lb/hr)	Annual per Cell (lb/yr)
Arsenic	7440-38-2	0.026	2.89E-06	2.40E-02	7.22E-07	6.00E-03
Copper	7440-50-8	0.005	5.61E-07	4.66E-03	1.40E-07	1.17E-03
Fluoride	1101	0.45	5.05E-05	4.20E-01	1.26E-05	1.05E-01
Manganese	7439-96-5	1.29	1.44E-04	1.20E+00	3.61E-05	3.00E-01
Selenium	7784-49-2	0.02	2.40E-06	2.00E-02	6.00E-07	4.99E-03

Notes:

1) The emissions are based on the concentrations of each constituent found in the raw cooling water analysis, cycles of concentration, and drift rate.

2) Arsenic ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

3) Copper ppm value shown is one-half of stated detection limit.

4) Fluoride ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

5) Manganese ppm value shown taken as average of analytical test results (Fruit Growers Laboratory).

6) Selenium ppm value shown taken as average of analytical test results (DWR).

Auxiliary Boiler — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Auxiliary Boiler Heat Input =	213	10^6 Btu/hr (HHV)
Natural gas heating value =	1,050	Btu/scf
Fuel usage =	0.203	10^6 scf/hr
Auxiliary Boiler Operating Hours =	2,190	hours per year

Compound	CAS #	Emission Factor ($lb/10^6$ scf)	Hourly (lb/hr)	Annual (lb/yr)
Ammonia	7664-41-7	5 ppm	4.69E-01	1.03E+03
Arsenic	7440-38-2	2.00E-04	4.06E-05	8.89E-02
Benzene	71-43-2	2.10E-03	4.26E-04	9.33E-01
Beryllium	7440-41-7	1.20E-05	2.43E-06	5.33E-03
Cadmium	7440-43-9	1.10E-03	2.23E-04	4.89E-01
Chromium	7440-47-3	1.40E-03	2.84E-04	6.22E-01
Cobalt	7440-48-4	8.40E-05	1.70E-05	3.73E-02
Copper	7440-50-8	8.50E-04	1.72E-04	3.78E-01
Formaldehyde	50-00-0	7.50E-02	1.52E-02	3.33E+01
Hexane	110-54-3	1.80E+00	3.65E-01	8.00E+02
Manganese	7439-96-5	3.80E-04	7.71E-05	1.69E-01
Mercury	7439-97-6	2.60E-04	5.27E-05	1.16E-01
Naphthalene	91-20-3	6.10E-04	1.24E-04	2.71E-01
Nickel	7440-02-0	2.10E-03	4.26E-04	9.33E-01
Selenium	7782-49-2	2.40E-05	4.87E-06	1.07E-02
Toluene	108-88-3	3.40E-03	6.90E-04	1.51E+00
Vanadium	7440-62-2	2.30E-03	4.67E-04	1.02E+00
Benzo(a)pyrene	50-32-8	1.20E-06	2.43E-07	5.33E-04
Benz(a)anthracene	56-55-3	1.80E-06	3.65E-07	8.00E-04
Benzo(b)fluoranthene	205-99-2	1.80E-06	3.65E-07	8.00E-04
Chrysene	218-01-9	1.80E-06	3.65E-07	8.00E-04
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	2.43E-07	5.33E-04
Dichlorobenzene	106-46-7	1.20E-03	2.43E-04	5.33E-01
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	3.65E-07	8.00E-04
2-Methylnaphthalene	91-57-6	2.40E-05	4.87E-06	1.07E-02
3-Methylchloranthrene	56-49-5	1.80E-06	3.65E-07	8.00E-04
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	3.25E-06	7.11E-03
Acenaphthene	83-32-9	1.80E-06	3.65E-07	8.00E-04
Acenaphthylene	208-96-8	1.80E-06	3.65E-07	8.00E-04
Anthracene	120-12-7	2.40E-06	4.87E-07	1.07E-03
Benzo(g,h,i)perylene	191-24-2	1.20E-06	2.43E-07	5.33E-04
Benzo(k)fluoranthene	207-08-9	1.80E-06	3.65E-07	8.00E-04
Fluoranthene	206-44-0	3.00E-06	6.09E-07	1.33E-03
Fluorene	86-73-7	2.80E-06	5.68E-07	1.24E-03
Phenanathrene	85-01-8	1.70E-05	3.45E-06	7.55E-03
Pyrene	129-00-0	5.00E-06	1.01E-06	2.22E-03

Notes:

1) Emission factors (lb/106 scf) are from EPA AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4.

2) Ammonia slip from the SCR (5 parts per million volume dry @ 15 percent O_2) - provided by Fluor - see Criteria Pollutant emission spreadsheet for details.

Ammonia Plant Startup Heater — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Heat Input =	55	10^6 Btu/hr (HHV)
Natural gas heating value =	1,050	Btu/scf
Fuel usage =	0.052	10^6 scf/hr
Operating Hours =	140	hours per year

Compound	CAS #	Emission Factor ($lb/10^6$ scf)	Hourly (lb/hr)	Annual (lb/yr)
Arsenic	7440-38-2	2.00E-04	1.05E-05	1.47E-03
Benzene	71-43-2	2.10E-03	1.10E-04	1.54E-02
Beryllium	7440-41-7	1.20E-05	6.29E-07	8.80E-05
Cadmium	7440-43-9	1.10E-03	5.76E-05	8.07E-03
Chromium	7440-47-3	1.40E-03	7.33E-05	1.03E-02
Cobalt	7440-48-4	8.40E-05	4.40E-06	6.16E-04
Copper	7440-50-8	8.50E-04	4.45E-05	6.23E-03
Formaldehyde	50-00-0	7.50E-02	3.93E-03	5.50E-01
Hexane	110-54-3	1.80E+00	9.43E-02	1.32E+01
Manganese	7439-96-5	3.80E-04	1.99E-05	2.79E-03
Mercury	7439-97-6	2.60E-04	1.36E-05	1.91E-03
Naphthalene	91-20-3	6.10E-04	3.20E-05	4.47E-03
Nickel	7440-02-0	2.10E-03	1.10E-04	1.54E-02
Selenium	7782-49-2	2.40E-05	1.26E-06	1.76E-04
Toluene	108-88-3	3.40E-03	1.78E-04	2.49E-02
Vanadium	7440-62-2	2.30E-03	1.20E-04	1.69E-02
Benzo(a)pyrene	50-32-8	1.20E-06	6.29E-08	8.80E-06
Benz(a)anthracene	56-55-3	1.80E-06	9.43E-08	1.32E-05
Benzo(b)fluoranthene	205-99-2	1.80E-06	9.43E-08	1.32E-05
Chrysene	218-01-9	1.80E-06	9.43E-08	1.32E-05
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	6.29E-08	8.80E-06
Dichlorobenzene	106-46-7	1.20E-03	6.29E-05	8.80E-03
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	9.43E-08	1.32E-05
2-Methylnaphthalene	91-57-6	2.40E-05	1.26E-06	1.76E-04
3-Methylchloranthrene	56-49-5	1.80E-06	9.43E-08	1.32E-05
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	8.38E-07	1.17E-04
Acenaphthene	83-32-9	1.80E-06	9.43E-08	1.32E-05
Acenaphthylene	208-96-8	1.80E-06	9.43E-08	1.32E-05
Anthracene	120-12-7	2.40E-06	1.26E-07	1.76E-05
Benzo(g,h,i)perylene	191-24-2	1.20E-06	6.29E-08	8.80E-06
Benzo(k)fluoranthene	207-08-9	1.80E-06	9.43E-08	1.32E-05
Fluoranthene	206-44-0	3.00E-06	1.57E-07	2.20E-05
Fluorene	86-73-7	2.80E-06	1.47E-07	2.05E-05
Phenanathrene	85-01-8	1.70E-05	8.90E-07	1.25E-04
Pyrene	129-00-0	5.00E-06	2.62E-07	3.67E-05

Notes:

1) Emission factors (lb/106 scf) are from EPA AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4.

Gasification Flare — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Reference HHV = 1,050 btu/scf

Gasification Flare - Normal Operating Emissions From Pilot

Total Hours of Pilot Operation = 8,760 hr/yr
Flare Pilot Fuel Use = 0.5 10^6 Btu/hr

Gasification Flare - Operating Emissions During Gasifier Startup and Shutdown

	10^6 Btu/yr	Hours per year
Total Flare SU/SD Operation =	70,528	28
Flaring NG-Firing Rate =	2,926	6
Wet Unshifted Gas-Firing Rate =	2,386	4
Dry Shifted Gas-Firing Rate =	2,413	18

Compound	CAS #	Emission Factor ($lb/10^6$ scf)	Emission Factor ($lb/10^6$ Btu)	Hourly (lb/hr)	Annual (lb/yr)
Arsenic	7440-38-2	2.00E-04	1.90E-07	5.57E-04	1.43E-02
Benzene	71-43-2	2.10E-03	2.00E-06	5.85E-03	1.50E-01
Beryllium	7440-41-7	1.20E-05	1.14E-08	3.34E-05	8.56E-04
Cadmium	7440-43-9	1.10E-03	1.05E-06	3.07E-03	7.85E-02
Chromium	7440-47-3	1.40E-03	1.33E-06	3.90E-03	9.99E-02
Cobalt	7440-48-4	8.40E-05	8.00E-08	2.34E-04	5.99E-03
Copper	7440-50-8	8.50E-04	8.10E-07	2.37E-03	6.06E-02
Formaldehyde	50-00-0	7.50E-02	7.14E-05	2.09E-01	5.35E+00
Hexane	110-54-3	1.80E+00	1.71E-03	5.02E+00	1.28E+02
Manganese	7439-96-5	3.80E-04	3.62E-07	1.06E-03	2.71E-02
Mercury	7439-97-6	2.60E-04	2.48E-07	7.25E-04	1.85E-02
Naphthalene	91-20-3	6.10E-04	5.81E-07	1.70E-03	4.35E-02
Nickel	7440-02-0	2.10E-03	2.00E-06	5.85E-03	1.50E-01
Selenium	7782-49-2	2.40E-05	2.29E-08	6.69E-05	1.71E-03
Toluene	108-88-3	3.40E-03	3.24E-06	9.48E-03	2.43E-01
Vanadium	7440-62-2	2.30E-03	2.19E-06	6.41E-03	1.64E-01
Benzo(a)pyrene	50-32-8	1.20E-06	1.14E-09	3.34E-06	8.56E-05
Benz(a)anthracene	56-55-3	1.80E-06	1.71E-09	5.02E-06	1.28E-04
Benzo(b)fluoranthene	205-99-2	1.80E-06	1.71E-09	5.02E-06	1.28E-04
Chrysene	218-01-9	1.80E-06	1.71E-09	5.02E-06	1.28E-04
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	1.14E-09	3.34E-06	8.56E-05
Dichlorobenzene	106-46-7	1.20E-03	1.14E-06	3.34E-03	8.56E-02
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	1.71E-09	5.02E-06	1.28E-04
2-Methylnaphthalene	91-57-6	2.40E-05	2.29E-08	6.69E-05	1.71E-03
3-Methylchloranthrene	56-49-5	1.80E-06	1.71E-09	5.02E-06	1.28E-04
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	1.52E-08	4.46E-05	1.14E-03
Acenaphthene	83-32-9	1.80E-06	1.71E-09	5.02E-06	1.28E-04
Acenaphthylene	208-96-8	1.80E-06	1.71E-09	5.02E-06	1.28E-04
Anthracene	120-12-7	2.40E-06	2.29E-09	6.69E-06	1.71E-04
Benzo(g,h,i)perylene	191-24-2	1.20E-06	1.14E-09	3.34E-06	8.56E-05
Benzo(k)fluoranthene	207-08-9	1.80E-06	1.71E-09	5.02E-06	1.28E-04
Fluoranthene	206-44-0	3.00E-06	2.86E-09	8.36E-06	2.14E-04
Fluorene	86-73-7	2.80E-06	2.67E-09	7.80E-06	2.00E-04
Phenanathrene	85-01-8	1.70E-05	1.62E-08	4.74E-05	1.21E-03
Pyrene	129-00-0	5.00E-06	4.76E-09	1.39E-05	3.57E-04

Notes:

1) Annual operation assumes total pilot operation of 8,760 hr/yr and plus gasifier startup and shutdown.

2) Emission factors ($lb/10^6$ scf) are from EPA AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4.

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Reference HHV =	1,050	btu/scf

SRU Flare - Normal Operating Emissions From Pilot

Total Hours of Pilot Operation =	8,760	hr/yr
Elevated Flare Pilot Fuel Use =	0.3	10^6 Btu/hr

SRU Flare - Operating Emissions During Gasifier Startup and Shutdown

Total Flare Operation During SU/SD =	40.0	hr/yr
Natural Gas Heat Rate (assist gas) =	36.0	10^6 Btu/hr

Compound	CAS #	Emission Factor ($lb/10^6$ scf)	Emission Factor ($lb/10^6$ Btu)	Hourly (lb/hr)	Annual (lb/yr)
Arsenic	7440-38-2	2.00E-04	1.90E-07	6.91E-06	7.75E-04
Benzene	71-43-2	2.10E-03	2.00E-06	7.26E-05	8.14E-03
Beryllium	7440-41-7	1.20E-05	1.14E-08	4.15E-07	4.65E-05
Cadmium	7440-43-9	1.10E-03	1.05E-06	3.80E-05	4.26E-03
Chromium	7440-47-3	1.40E-03	1.33E-06	4.84E-05	5.42E-03
Cobalt	7440-48-4	8.40E-05	8.00E-08	2.90E-06	3.25E-04
Copper	7440-50-8	8.50E-04	8.10E-07	2.94E-05	3.29E-03
Formaldehyde	50-00-0	7.50E-02	7.14E-05	2.59E-03	2.91E-01
Hexane	110-54-3	1.80E+00	1.71E-03	6.22E-02	6.97E+00
Manganese	7439-96-5	3.80E-04	3.62E-07	1.31E-05	1.47E-03
Mercury	7439-97-6	2.60E-04	2.48E-07	8.99E-06	1.01E-03
Naphthalene	91-20-3	6.10E-04	5.81E-07	2.11E-05	2.36E-03
Nickel	7440-02-0	2.10E-03	2.00E-06	7.26E-05	8.14E-03
Selenium	7782-49-2	2.40E-05	2.29E-08	8.30E-07	9.30E-05
Toluene	108-88-3	3.40E-03	3.24E-06	1.18E-04	1.32E-02
Vanadium	7440-62-2	2.30E-03	2.19E-06	7.95E-05	8.91E-03
Benzo(a)pyrene	50-32-8	1.20E-06	1.14E-09	4.15E-08	4.65E-06
Benz(a)anthracene	56-55-3	1.80E-06	1.71E-09	6.22E-08	6.97E-06
Benzo(b)fluoranthene	205-99-2	1.80E-06	1.71E-09	6.22E-08	6.97E-06
Chrysene	218-01-9	1.80E-06	1.71E-09	6.22E-08	6.97E-06
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	1.14E-09	4.15E-08	4.65E-06
Dichlorobenzene	106-46-7	1.20E-03	1.14E-06	4.15E-05	4.65E-03
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	1.71E-09	6.22E-08	6.97E-06
2-Methylnaphthalene	91-57-6	2.40E-05	2.29E-08	8.30E-07	9.30E-05
3-Methylchloranthrene	56-49-5	1.80E-06	1.71E-09	6.22E-08	6.97E-06
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	1.52E-08	5.53E-07	6.20E-05
Acenaphthene	83-32-9	1.80E-06	1.71E-09	6.22E-08	6.97E-06
Acenaphthylene	208-96-8	1.80E-06	1.71E-09	6.22E-08	6.97E-06
Anthracene	120-12-7	2.40E-06	2.29E-09	8.30E-08	9.30E-06
Benzo(g,h,i)perylene	191-24-2	1.20E-06	1.14E-09	4.15E-08	4.65E-06
Benzo(k)fluoranthene	207-08-9	1.80E-06	1.71E-09	6.22E-08	6.97E-06
Fluoranthene	206-44-0	3.00E-06	2.86E-09	1.04E-07	1.16E-05
Fluorene	86-73-7	2.80E-06	2.67E-09	9.68E-08	1.08E-05
Phenanathrene	85-01-8	1.70E-05	1.62E-08	5.88E-07	6.59E-05
Pyrene	129-00-0	5.00E-06	4.76E-09	1.73E-07	1.94E-05

Notes:

1) Annual operation assumes total pilot operation of 8,760 hr/yr plus gasifier startup and shutdown with assist gas.

2) Emission factors ($lb/10^6$ scf) are from EPA AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4.

Rectisol Flare — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Reference HHV =	1,050	btu/scf

Operating Parameters - Normal Operating Emissions From Pilot

Rectisol Flare Pilot Firing Rate =	0.3	MMBtu/hr
Annual Operating Hours =	8,760	hr/yr

Rectisol Flare - Operating Emissions During Rectisol Startup and Shutdown

Total Flare Operation During SU/SD =	40	hr/yr
Heat Rate of Vent Gas, HHV =	430	10^6 Btu/hr

Compound	CAS Number	Emission Factor ($lb/10^6$ scf)	Emission Factor (lb/MMBtu)	Hourly (lb/hr)	Annual (lb/yr)
Arsenic	7440-38-2	2.00E-04	1.90E-07	8.20E-05	3.78E-03
Benzene	71-43-2	2.10E-03	2.00E-06	8.61E-04	3.97E-02
Beryllium	7440-41-7	1.20E-05	1.14E-08	4.92E-06	2.27E-04
Cadmium	7440-43-9	1.10E-03	1.05E-06	4.51E-04	2.08E-02
Chromium	7440-47-3	1.40E-03	1.33E-06	5.74E-04	2.64E-02
Cobalt	7440-48-4	8.40E-05	8.00E-08	3.44E-05	1.59E-03
Copper	7440-50-8	8.50E-04	8.10E-07	3.48E-04	1.61E-02
Formaldehyde	50-00-0	7.50E-02	7.14E-05	3.07E-02	1.42E+00
Hexane	110-54-3	1.80E+00	1.71E-03	7.38E-01	3.40E+01
Manganese	7439-96-5	3.80E-04	3.62E-07	1.56E-04	7.18E-03
Mercury	7439-97-6	2.60E-04	2.48E-07	1.07E-04	4.91E-03
Naphthalene	91-20-3	6.10E-04	5.81E-07	2.50E-04	1.15E-02
Nickel	7440-02-0	2.10E-03	2.00E-06	8.61E-04	3.97E-02
Selenium	7782-49-2	2.40E-05	2.29E-08	9.84E-06	4.53E-04
Toluene	108-88-3	3.40E-03	3.24E-06	1.39E-03	6.42E-02
Vanadium	7440-62-2	2.30E-03	2.19E-06	9.43E-04	4.34E-02
Benzo(a)pyrene	50-32-8	1.20E-06	1.14E-09	4.92E-07	2.27E-05
Benz(a)anthracene	56-55-3	1.80E-06	1.71E-09	7.38E-07	3.40E-05
Benzo(b)fluoranthene	205-99-2	1.80E-06	1.71E-09	7.38E-07	3.40E-05
Chrysene	218-01-9	1.80E-06	1.71E-09	7.38E-07	3.40E-05
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	1.14E-09	4.92E-07	2.27E-05
Dichlorobenzene	106-46-7	1.20E-03	1.14E-06	4.92E-04	2.27E-02
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	1.71E-09	7.38E-07	3.40E-05
2-Methylnaphthalene	91-57-6	2.40E-05	2.29E-08	9.84E-06	4.53E-04
3-Methylchloranthrene	56-49-5	1.80E-06	1.71E-09	7.38E-07	3.40E-05
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	1.52E-08	6.56E-06	3.02E-04
Acenaphthene	83-32-9	1.80E-06	1.71E-09	7.38E-07	3.40E-05
Acenaphthylene	208-96-8	1.80E-06	1.71E-09	7.38E-07	3.40E-05
Anthracene	120-12-7	2.40E-06	2.29E-09	9.84E-07	4.53E-05
Benzo(g,h,i)perylene	191-24-2	1.20E-06	1.14E-09	4.92E-07	2.27E-05
Benzo(k)fluoranthene	207-08-9	1.80E-06	1.71E-09	7.38E-07	3.40E-05
Fluoranthene	206-44-0	3.00E-06	2.86E-09	1.23E-06	5.67E-05
Fluorene	86-73-7	2.80E-06	2.67E-09	1.15E-06	5.29E-05
Phenanathrene	85-01-8	1.70E-05	1.62E-08	6.97E-06	3.21E-04
Pyrene	129-00-0	5.00E-06	4.76E-09	2.05E-06	9.44E-05

Notes:

1) Annual operation assumes total pilot operation of 8,760 hr/yr plus rectisol startup and shutdown.

2) Emission factors ($lb/10^6$ scf) are from EPA AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4.

Tail Gas Thermal Oxidizer — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Normal Operations		
Tail Gas Thermal Oxidizer Heat Input =	13	10^6 Btu/hr (HHV)
Natural gas heating value =	1,050	Btu/scf
Fuel usage =	0.012	10^6 scf/hr
Tail Gas Thermal Oxidizer Operating Hours =	8,314	hr/yr
Startup Operations		
Heat Input =	80	10^6 Btu/hr (HHV)
Fuel usage =	0.076	10^6 scf/hr
Startup Hours per year =	48	hr/yr

Compound	CAS #	Emission Factor ($lb/10^6$ scf)	Hourly (lb/hr)	Annual (lb/yr)
Arsenic	7440-38-2	2.00E-04	1.77E-05	2.13E-02
Benzene	71-43-2	2.10E-03	1.86E-04	2.24E-01
Beryllium	7440-41-7	1.20E-05	1.06E-06	1.28E-03
Cadmium	7440-43-9	1.10E-03	9.74E-05	1.17E-01
Chromium	7440-47-3	1.40E-03	1.24E-04	1.49E-01
Cobalt	7440-48-4	8.40E-05	7.44E-06	8.95E-03
Copper	7440-50-8	8.50E-04	7.53E-05	9.06E-02
Formaldehyde	50-00-0	7.50E-02	6.64E-03	7.99E+00
Hexane	110-54-3	1.80E+00	1.59E-01	1.92E+02
Manganese	7439-96-5	3.80E-04	3.37E-05	4.05E-02
Mercury	7439-97-6	2.60E-04	2.30E-05	2.77E-02
Naphthalene	91-20-3	6.10E-04	5.40E-05	6.50E-02
Nickel	7440-02-0	2.10E-03	1.86E-04	2.24E-01
Selenium	7782-49-2	2.40E-05	2.13E-06	2.56E-03
Toluene	108-88-3	3.40E-03	3.01E-04	3.62E-01
Vanadium	7440-62-2	2.30E-03	2.04E-04	2.45E-01
Benzo(a)pyrene	50-32-8	1.20E-06	1.06E-07	1.28E-04
Benz(a)anthracene	56-55-3	1.80E-06	1.59E-07	1.92E-04
Benzo(b)fluoranthene	205-99-2	1.80E-06	1.59E-07	1.92E-04
Chrysene	218-01-9	1.80E-06	1.59E-07	1.92E-04
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	1.06E-07	1.28E-04
Dichlorobenzene	106-46-7	1.20E-03	1.06E-04	1.28E-01
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	1.59E-07	1.92E-04
2-Methylnaphthalene	91-57-6	2.40E-05	2.13E-06	2.56E-03
3-Methylchloranthrene	56-49-5	1.80E-06	1.59E-07	1.92E-04
7,12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	1.42E-06	1.71E-03
Acenaphthene	83-32-9	1.80E-06	1.59E-07	1.92E-04
Acenaphthylene	208-96-8	1.80E-06	1.59E-07	1.92E-04
Anthracene	120-12-7	2.40E-06	2.13E-07	2.56E-04
Benzo(g,h,i)perylene	191-24-2	1.20E-06	1.06E-07	1.28E-04
Benzo(k)fluoranthene	207-08-9	1.80E-06	1.59E-07	1.92E-04
Fluoranthene	206-44-0	3.00E-06	2.66E-07	3.20E-04
Fluorene	86-73-7	2.80E-06	2.48E-07	2.98E-04
Phenanathrene	85-01-8	1.70E-05	1.51E-06	1.81E-03
Pyrene	129-00-0	5.00E-06	4.43E-07	5.33E-04

Notes:
1) Emission factors ($lb/10^6$ scf) are from EPA AP-42, Chapter 1.4, Table 1.4-3 and 1.4-4.

Intermittent CO_2 Vent — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Total Hours of Operation =	504	hr/yr
Total Flow =	761,400	lb/hr
Total Flow =	17,584	lbmol/hr
Molecular weight		
COS	60	lb/lbmol
H_2S	34	lb/lbmol

Compound	CAS #	Emission Factor (ppm)	Hourly (lb/hr)	Annual (lb/yr)
Carbonyl Sulfide	463-58-1	10	1.06E+01	5.32E+03
Hydrogen Sulfide	7783-06-4	10	5.98E+00	3.01E+03

Notes:

1) Emission rates based on plant design and 504 hours per year of full venting.

Emergency Diesel Generator — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Emergency Generator Specification =	2,922	Bhp
Emergency Generator Operating Hours =	50	hr/yr

PLEASE NOTE THAT THERE ARE TWO GENERATORS; EMISSION SHOWN IS FOR INDIVIDUAL GENERATORS.

Compound	CAS # /OEHHA reference #	Emission Factor (g/Bhp/hr)	Hourly (lb/hr)	Annual (lb/yr)
Diesel Particulate Matter	9901	0.07	4.51E-01	2.25E+01

Note:

1) Emission factor shown is based on U.S. EPA Tier 4 non-road diesel engine emissions standards.

2) Emission rate shown is for individual generator. There are two generators associated with the Project.

Emergency Diesel Firewater Pump — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Operating Parameters

Fire Water Pump Specification =	556	Bhp
Fire Water Pump Operating Hours =	100	hr/yr

Compound	CAS # /OEHHA reference #	Emission Factor (g/Bhp/hr)	Hourly (lb/hr)	Annual (lb/yr)
Diesel Particulate Matter	9901	0.015	1.84E-02	1.84E+00

Note:

1) Emission factor shown is based on U.S. EPA Tier 4 non-road diesel engine emissions standards.

Urea HP Absorber

Urea HP Absorber Operating Hours = 8,052 hr/yr

Compound	CAS #	Hourly (lb/hr)	Annual (lb/yr)
Ammonia (NH3)	8013-59-0	11.14	89,675

Note:

1) Emission rate was estimated based on reference plant information. See criteria pollutant emission calculations. Annual operation includes hours for plant startup.

Urea LP Absorber

Urea LP Absorber Operating Hours = 8,052 hr/yr

Compound	CAS #	Hourly (lb/hr)	Annual (lb/yr)
Ammonia (NH3)	8013-59-0	2.02	16,305

Note:

1) Emission rate was estimated based on reference plant information. See criteria pollutant emission calculations. Annual operation includes hours for plant startup.

Urea Pastillation

Urea Pastillation Operating Hours = 8,052 hr/yr

Compound	CAS #	Hourly (lb/hr)	Annual (lb/yr)
Ammonia (NH3)	8013-59-0	1.02	8,224

Note:

1) Emission rate was estimated based on reference plant information. See criteria pollutant emission calculations. Annual operation includes hours for plant startup.

Nitric Acid Unit

Nitric Acid Unit Operating Hours = 8,052 hr/yr

Compound	CAS #	Hourly (lb/hr)	Annual (lb/yr)
Ammonia (NH3)	8013-59-0	0.51	4,141

Note:

1) Emission rate was estimated based on reference plant information. See criteria pollutant emission calculations. Annual operation includes hours for plant startup.

Trucks Operation **HAP Emissions Summary**

Hydrogen Energy California LLC *4/11/2012*

Hydrogen Energy California (HECA) Project

Data Supplied By Client						
	Onsite Petcoke and Coal Trucks(@ 10 mph)		Product Truck (@ 10 mph)		Miscellaneous Truck (@ 10 mph)	Onsite O&M Trucks (@ 15 mph)
Parameter	Running Emissions	Idling Emissions (at each Idle Point)	Running Emissions	Idling Emissions (at each Idle Point)	Running Emissions	Running Emissions Diesel LHDT2
Distance Traveled (mile)	0.96		2.49		2.20	1.00
Per Truck Idle Time (hour)		0.083		0.083		
No. Volume Sources	34	2	73	7	5	10
Maximum number of trucks or loads						
1-hour	6	6	13	13	5	10
Annual average	15,200	15,200	20,880	20,880	1,818	10000
EMFAC2007 Emission Factors (g/mi/trk or g/idle-hour/trk)						
PM_{10}	0.087	0.114	0.087	0.114	0.087	0.024

EMFAC emissions are for fleet year 2010. PM10 emission factor does not include tire wear or break wear contributions.
Feedstock and Product truck emissions are for HHD diesel trucks. O&M trucks are light heavy-duty 2 trucks.

PM10 Emission Rates

	Onsite Petcoke and Coal Trucks (@ 10 mph)		Product Trucks (@ 10 mph)		Miscellaneous Truck (@ 10 mph)	Onsite O&M Trucks (@ 15 mph)
Emission Rates for HARP	Running Emissions	Idling Emissions (at each Idle Point)	Running Emissions	Idling Emissions (at each Idle Point)	Running Emissions	Running Emissions Diesel LHDT2
1-hr PM_{10} (pounds per hour)	1.0E-03	1.2E-04	6.2E-03	2.7E-04	2.3E-03	5.3E-04
Annual PM_{10} (pounds per year)	2.8E+00	3.2E-01	1.0E+01	4.4E-01	7.7E-01	5.3E-01

HARP Inputs - Annual and Hourly Emission Rates per Volume Source

	Onsite Petcoke and Coal Trucks (@ 10 mph)		Product Trucks (@ 10 mph)		Miscellaneous Truck (@ 10 mph)	Onsite O&M Trucks (@ 15 mph)
	Running Emissions	Idling Emissions (at each Idle Point)	Running Emissions	Idling Emissions (at each Idle Point)	Running Emissions	Running Emissions
Max PM_{10} pounds per hour per volume source	3.0E-05	5.8E-05	8.5E-05	3.9E-05	4.6E-04	5.3E-05
PM_{10} pounds per year per volume source	8.2E-02	1.6E-01	1.4E-01	6.2E-02	1.5E-01	5.3E-02

Train Operation — HAP Emissions Summary

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Maximum Number of Unit Trains	Coal Unit Train (incoming)	Product Unit Train (outgoing)	Maximum Total Trains per period
1-hour	1	1	1
Annual average	109	153	262

	Switching Engine	Line-haul Engine for Coal Train	Line-haul Engine for Product Train
PM10 Emission Factor (g/bhp-hr)	0.10	0.10	0.10
Conversion Factor (bhp-hr/gal)	15.2	20.8	20.8
PM10 Emissions (lbs/hr /engine)	0.057	0.048	0.033
Engine Power Rating (hp)		4400	3000
Notch Operation		1	1
Notch percentage of hp		5.0%	5.0%
Avg Notch horsepower	260	220	150
# of engines per train	1	2	2
hours to unload/load each train		2	1
max operating hours (hrs/year)	1248		
Number of Vome Sources in AERMOD/HARP	104		

Notes:

Switching Engine EPA Tier 3 - 40 CFR Part 1033

The majority of the time the line-haul engine will operate in Notch 1 or idling, therefore emissions were conservatively estimated for Notch 1 horsepower.

Notch percentage presented in PORT OF LONG BEACH AIR EMISSIONS INVENTORY for 2007 (POLB, Jan 2009) derived from EPA data.

New line-haul engines will be AC locomotives such as the GE Evolution Series, that meet Tier 3 emissions

New switching engines will meet Tier 3 emissions, they may be the Titan Trackmobile railcar movers or similar

PM10 Emission Rates

	Switching Engine Emissions	Coal Line-haul Engine Emissions	Product Line-haul Engine Emissions
1-hr PM_{10} (pounds per hour)	0.06	0.10	0.00
Annual PM_{10} (pounds per year)	71.47	21.13	10.11

During a given hour either the line-haul engines for the coal train or product train operate, not both, thus emissions from the larger coal trains are only included in the peak hour emissions.

HARP Inputs - Annual and Hourly Emission Rates per Volume Source

Diesel Particulate Matter	Onsite Train Emissions
Max PM_{10} pounds per hour per volume source	1.5E-03
PM_{10} pounds per year per volume source	9.9E-01

Fugitive Emissions - Summary

Emissions Summary

Hydrogen Energy California LLC

4/11/2012

Hydrogen Energy California (HECA) Project

		Total Uncontrolled Emissions		Total Controlled Emissions	
Compound	**Name**	**Emissions (lb/hr)**	**Emissions (tpy)**	**Emissions (lb/hr)**	**Emissions (tpy)**
CO_2	Carbon dioxide	20.30	88.93	7.37	32.28
CH_4	Methane	0.04	0.19	0.04	0.19
CO	Carbon monoxide	1.07	4.70	1.05	4.62
H_2S	Hydrogen Sulfide	2.10	9.22	0.26	1.14
NH_3	Ammonia	15.12	66.22	1.30	5.70
COS	Carbonyl Sulfide	0.03	0.12	0.01	0.03
CH_3OH	Methanol	17.44	76.39	1.62	7.09
C_3H_6	Proylene	11.44	50.13	1.44	6.33
HCN	Hydrogen Cyanide = Cyanide Compounds	0.002	0.008	0.000	0.001
HNO_3	Nitric acid	2.12	9.29	0.19	0.82
Total VOC	Volatile organic compounds	28.91	126.64	3.07	13.45

	Total Uncontrolled Emissions		Total Controlled Emissions	
Compound	**Emissions (lb/hr)**	**Emissions (tpy)**	**Emissions (lb/hr)**	**Emissions (tpy)**
CO_2	17.09	74.86	7.12	31.19
CH_4	4.36E-02	1.91E-01	4.31E-02	1.89E-01
CO	1.07	4.70	1.05	4.62
H_2S	2.10	9.22	0.26	1.14
NH_3	0.29	1.26	0.04	0.16
COS	2.76E-02	1.21E-01	6.78E-03	0.03
CH_3OH	17.44	76.39	1.62	7.09
C_3H_6	11.44	50.13	1.44	6.33
HCN	1.73E-03	7.58E-03	1.31E-04	5.73E-04
Total VOC	**28.91**	**126.64**	**3.07**	**13.45**

EPA Table 2-1SOCMI Average Fugitive Emission Factors

Component Type	Service Type	Emission Factor [1] (kg/hr/source)	Control Efficiency (%) [3]
Valves	Gas	5.97E-03	92%
	Light Liquid	4.03E-03	88%
	Heavy Liquid	2.30E-04	
Pump Seals	Light Liquid	1.99E-02	75%
	Heavy Liquid	8.62E-03	
Compressor Seals	Gas	2.28E-01	
Pressure Relief Valves	Gas	1.04E-01	
Connectors	All	1.83E-03	93%
Open-Ended Lines	All	1.70E-03	
Sampling Connections	All	1.50E-02	
Agitator Seals [2]	All	1.99E-02	

Note:
Source: EPA 1995, Protocol for Equipment Leak Emission Estimates
(1) Factors are for total organic compound emission rates. Emission factors assumed to be same for other constituents emitted from the stream.
(2) Factors for light liquid pump seals can be used to estimate the leak rate from agitator seals
(3) Control efficiencies for an LDAR program at a SOCMI process unit using HON reg neg
(control effectiveness attributable to requirements of the hazardous NESHAPS equipment leak regulations)
Emission are conservative since many of these streams are not as volatile as the streams that the SOCMI factors were developed for.

Area #1: Methanol

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	50	8760	0.66	2.88	0.05	0.23
Valves	Light Liquid	416	8760	3.70	16.19	0.44	1.94
Valves	Heavy Liquid	0	8760	-	-	-	-
Pump Seals	Light Liquid	7	8760	0.31	1.35	0.08	0.34
Pump Seals	Heavy Liquid	0	8760	-	-	-	-
Compressor Seals	Gas	0	8760	-	-	-	-
Connectors	All	1225	8760	4.94	21.65	0.35	1.52
			Total	**9.60**	**42.06**	**0.92**	**4.02**
			CH_3OH	9.60	42.06	0.92	4.02

Area #2: Syn Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy
Valves	Gas	108	8760	0.56	2.44
Valves	Light Liquid	0	8760	-	-
Valves	Heavy Liquid	0	8760	-	-
Pump Seals	Light Liquid	0	8760	-	-
Pump Seals	Heavy Liquid	0	8760	-	-
Compressor Seals	Gas	0	8760	-	-
Connectors	All	372	8760	0.59	2.58
			Total	**1.15**	**5.02**
			CO_2	1.69E-01	0.74
			CH_4	1.14E-02	4.99E-02
			CO	0.95	4.16
			H_2S	1.26E-02	5.50E-02
			NH_3	2.92E-05	1.28E-04
			COS	4.38E-03	1.92E-02

Area #4: Shifted Syn Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy
Valves	Gas	198	8760	2.19	9.60
Valves	Light Liquid	0	8760	-	-
Valves	Heavy Liquid	0	8760	-	-
Pump Seals	Light Liquid	0	8760	-	-
Pump Seals	Heavy Liquid	0	8760	-	-
Compressor Seals	Gas	1	8760	0.42	1.85
Connectors	All	632	8760	2.14	9.39
			Total	**4.76**	**20.84**
			CO_2	4.58	20.08
			CH_4	3.17E-02	1.39E-01
			CO	9.68E-02	4.24E-01
			H_2S	4.47E-02	1.96E-01

Area #5: Propylene

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	188	8760	2.47	10.84	0.20	0.87
Valves	Light Liquid	288	8760	2.56	11.21	0.31	1.34
Valves	Heavy Liquid	0	8760	-	-	-	-
Pump Seals	Light Liquid	3	8760	0.13	0.58	0.03	0.14
Pump Seals	Heavy Liquid	0	8760	-	-	-	-
Compressor Seals	Gas	1	8760	0.50	2.20	0.50	2.20
Connectors	All	1432	8760	5.78	25.30	0.40	1.77
			Total	**11.44**	**50.13**	**1.44**	**6.33**
			C_3H_6	11.44	50.13	1.44	6.33

Area #6: Sour Water

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-
Valves	Light Liquid	0	8760	-	-
Valves	Heavy Liquid	508	8760	0.01	0.03
Pump Seals	Light Liquid	0	8760	-	-
Pump Seals	Heavy Liquid	17	8760	0.01	0.04
Compressor Seals	Gas	0	8760	-	-
Connectors	All	1410	8760	0.17	0.73
			Total	**0.18**	**0.81**
			CO_2	0.16	0.69
			CO	8.79E-05	3.85E-04
			H_2S	0.01	0.05
			NH_3	0.02	0.07

Area #7: H_2S Laden Methanol

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	94	8760	1.24	5.42	0.10	0.43
Valves	Light Liquid	358	8760	3.18	13.93	0.38	1.67
Valves	Heavy Liquid	0	8760	-	-	-	-
Pump Seals	Light Liquid	7	8760	0.31	1.34	0.08	0.34
Pump Seals	Heavy Liquid	0	8760	-	-	-	-
Compressor Seals	Gas	0	8760	-	-	-	-
Connectors	All	1323	8760	5.34	23.37	0.37	1.64
			Total	**10.06**	**44.06**	**0.93**	**4.08**
			CO_2	4.50	19.69	0.42	1.82
			CH_4	2.94E-04	1.29E-03	2.72E-05	1.19E-04
			CO	3.47E-03	0.02	3.21E-04	1.41E-03
			H_2S	0.17	0.76	0.02	0.07
			COS	7.50E-04	3.28E-03	6.94E-05	3.04E-04
			CH_3OH	5.38	23.58	0.50	2.18

Area #8: CO_2 Laden Methanol

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	79	8760	1.04	4.55	0.08	0.36
Valves	Light Liquid	79	8760	0.70	3.07	0.08	0.37
Valves	Heavy Liquid	0	8760	-	-	-	-
Pump Seals	Light Liquid	0	8760	-	-	-	-
Pump Seals	Heavy Liquid	0	8760	-	-	-	-
Compressor Seals	Gas	0	8760	-	-	-	-
Connectors	All	516	8760	2.08	9.11	0.15	0.64
			Total	**3.82**	**16.74**	**0.31**	**1.37**
			CO_2	1.37	6.00	0.11	0.49
			CH_4	1.17E-04	5.11E-04	9.55E-06	4.18E-05
			CO	1.37E-03	0.01	1.12E-04	4.90E-04
			H_2S	3.70E-06	1.62E-05	3.03E-07	1.33E-06
			CH_3OH	2.45	10.73	0.20	0.88

Area #9: Acid Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	161	8760	2.12	9.28	0.17	0.74
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Pump Seals	Light Liquid	0	8760	-	-	-	-
Pump Seals	Heavy Liquid	0	8760	-	-	-	-
Compressor Seals	Gas	0	8760	-	-	-	-
Connectors	All	492	8760	1.98	8.69	0.14	0.61
			Total	**4.10**	**17.97**	**0.31**	**1.35**
			CO_2	2.48	10.84	0.19	0.81
			CH_4	7.19E-05	3.15E-04	5.40E-06	2.37E-05
			CO	2.65E-03	0.01	1.99E-04	8.72E-04
			H_2S	1.60	7.02	0.12	0.53
			COS	0.02	0.09	1.57E-03	0.01
			CH_3OH	1.39E-03	0.01	1.04E-04	4.57E-04

Area #10: Ammonia-Laden Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	157	8760	1.70	7.43	0.14	0.59
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Pump Seals	Light Liquid	0	8760	-	-	-	-
Pump Seals	Heavy Liquid	0	8760	-	-	-	-
Compressor Seals	Gas	0	8760	-	-	-	-
Connectors	All	407	8760	1.35	5.90	0.09	0.41
			Total	**3.04**	**13.34**	**0.23**	**1.01**
			CO_2	2.53	11.10	0.19	0.84
			CH_4	7.67E-05	3.36E-04	5.79E-06	2.54E-05
			CO	0.01	0.06	1.02E-03	4.47E-03
			H_2S	0.22	0.97	0.02	0.07
			NH_3	0.27	1.20	0.02	0.09
			COS	8.03E-04	3.52E-03	6.07E-05	2.66E-04
			HCN	1.73E-03	0.01	1.31E-04	5.73E-04

Area #11: Sulfur

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-
Valves	Light Liquid	0	8760	-	-
Valves	Heavy Liquid	37	8760	5.56E-06	2.44E-05
Pump Seals	Light Liquid	0	8760	-	-
Pump Seals	Heavy Liquid	2	8760	1.13E-05	4.94E-05
Compressor Seals	Gas	0	8760	-	-
Connectors	All	159	8760	1.90E-04	8.33E-04
			Total	**2.07E-04**	**9.07E-04**
			H_2S	2.07E-04	9.07E-04

Area #12: TGTU Process Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy
Valves	Gas	53	8760	0.47	2.04
Valves	Light Liquid	0	8760	-	-
Valves	Heavy Liquid	0	8760	-	-
Pump Seals	Light Liquid	0	8760	-	-
Pump Seals	Heavy Liquid	0	8760	-	-
Compressor Seals	Gas	1	8760	0.34	1.47
Connectors	All	203	8760	0.55	2.40
			Total	**1.35**	**5.91**
			CO_2	1.31	5.72
			CO	0.01	0.03
			H_2S	0.04	0.16
			COS	6.94E-04	3.04E-03

Note:
Please note that component counts listed in the tables above are only estimates, and do not represent exact component counts

E_{TOC} = $F_A * WF_{TOC} * N$

Where:
F_A = Applicable average emisison factor for equipment type
WF_{TOC} = Average weight fraction of TOC in the stream
N = Number of pieces of equipment of the applicable equipment type

The SOCMI emission factor does not need to be corrected for methane in the stream, because the emission factor is for total organic compounds.

Hydrogen Energy California LLC *4/11/2012*
Hydrogen Energy California (HECA) Project

Area Speciation

Comound	Wt % ($WF_{Constituents}$)										
	Stream 1 Methanol	Stream 2 Syn Gas	Stream 4 Shifted Syn Gas	Stream 5 Propylene	Stream 6 Sour Water	Stream 7 H_2S Laden Methanol	Stream 8 CO_2 Laden Methanol	Stream 9 Acid Gas	Stream 10 Ammonia-Laden Gas	Stream 11 Sulfur	Stream 12 TGTU Process Gas
CO_2	0.0000%	5.7900%	81.0200%	0.0000%	2.5007%	44.6797%	35.8142%	60.3215%	68.3203%	0.0000%	64.6507%
CH_4	0.0000%	0.3900%	0.5600%	0.0000%	0.0000%	0.0029%	0.0030%	0.0018%	0.0021%	0.0000%	0.0000%
CO	0.0000%	32.4900%	1.7100%	0.0000%	0.0014%	0.0345%	0.0358%	0.0645%	0.3642%	0.0000%	0.3054%
H_2S	0.0000%	0.4300%	0.7900%	0.0000%	0.1819%	1.7268%	0.0001%	39.0430%	5.9832%	0.0296%	1.8596%
NH_3	0.0000%	0.0010%	0.0000%	0.0000%	0.2497%	0.0000%	0.0000%	0.0000%	7.3602%	0.0000%	0.0000%
COS	0.0000%	0.1500%	0.0000%	0.0000%	0.0000%	0.0075%	0.0000%	0.5105%	0.0216%	0.0000%	0.0344%
CH_3OH	100.0000%	0.0000%	0.0000%	0.0000%	0.0000%	53.5058%	64.1012%	0.0339%	0.0000%	0.0000%	0.0000%
C_3H_6	0.0000%	0.0000%	0.0000%	100.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
HCN	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0467%	0.0000%	0.0000%
$WF_{Constituents}$ [1]	**100.00%**	**39.25%**	**84.08%**	**100.00%**	**2.93%**	**99.96%**	**99.95%**	**99.98%**	**82.10%**	**0.03%**	**66.85%**

Conversion Note:
1 kg = 2.20 pound

Note:
(1) $WF_{Constituents}$ does not always equal 100% due to the presence of inerts in the area not listed in table above.

	Process Area										
	1	2	4	5	6	7	8	9	10	11	12
Component Count	Methanol	Syn Gas	Shifted Syn Gas	Propylene	Sour Water	H_2S Laden Methanol	CO_2 Laden Methanol	Acid Gas	Ammonia-Laden Gas	Sulfur	TGTU Process Gas
Valves - Gas	50	108	198	188	0	94	79	161	157	0	53
Valves - Light Liquid	416	0	0	288	0	358	79	0	0	0	0
Valves - Heavy Liquid	0	0	0	0	508	0	0	0	0	37	0
Pumps - Light Liquid	7	0	0	3	0	7	0	0	0	0	0
Pumps - Heavy Liquid	0	0	0	0	17	0	0	0	0	2	0
Compressors	0	0	1	1	0	0	0	0	0	0	1
Connectors	1225	372	632	1432	1410	1323	516	492	407	159	203
	1698	**480**	**831**	**1912**	**1935**	**1782**	**674**	**653**	**564**	**198**	**257**

	Process Area											
	1	2	4	5	6	7	8	9	10	11	12	
	Methanol	Syn Gas	Shifted Syn Gas	Propylene	Sour Water	H_2S Laden Methanol	CO_2 Laden Methanol	Acid Gas	Ammonia-Laden Gas	Sulfur	TGTU Process Gas	Total
Compound	**Annual Fugitive Emissions with LDAR Application (ton/yr)**											
CO_2		0.74	20.08		0.69	1.82	0.49	0.81	0.84		5.72	31.19
CH_4		0.05	0.14			0.00	0.00	0.00	0.00			0.19
CO		4.16	0.42		0.00	0.00	0.00	0.00	0.00		0.03	4.62
H_2S		0.06	0.20		0.05	0.07	0.00	0.53	0.07	0.00	0.16	1.14
NH_3		0.00			0.07				0.09			0.16
COS		0.02				0.00		0.01	0.00		0.00	0.03
CH_3OH	4.02					2.18	0.88	0.00				7.09
C_3H_6				6.33								6.33
HCN									0.00			0.00
Total VOC	**4.02**	**0.02**	**0.00**	**6.33**	**0.00**	**2.18**	**0.88**	**0.01**	**0.00**	**0.00**	**0.00**	**13.45**
Total percentage of VOC content of gas in each process area	100.00%	0.15%	0.00%	100.00%	0.00%	53.51%	64.10%	0.54%	0.07%	0.00%	0.03%	

Note: The following compounds are included as VOCs, although not all compounds are found in the gas in each process area.
CH_3OH, C_3H_6, COS, and HCN

Summary by Volume Source for Modeling - Emissions are divided by number of Volume Sources

"GASIFICATION" (Area #2)

	lb/hr	lb/yr
CO	0.316	2,772.38
H_2S	4.19E-03	36.69
NH_3	9.74E-06	8.53E-02
CH_3OH		
C_3H_6		
HCN		

3 number of Volume Sources
28 horizontal dimension (m)
46.48 release ht (m)
13.02 horizontal dimension (m)
43.24 vertical dimension (m)
305 vertical dimension used for calcs (ft)

"SHIFT" (Area #4, 6)

	lb/hr	lb/yr
CO	4.84E-02	424.19
H_2S	2.81E-02	245.74
NH_3	7.83E-03	68.56
CH_3OH		
C_3H_6		
HCN		

2 number of Volume Sources
35 horizontal dimension (m)
6.10 release ht (m)
16.28 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

"AGR" (Area #1, #5, #7, #8, #9)

	lb/hr	lb/yr
CO	6.32E-04	5.54
H_2S	1.37E-01	1195.86
NH_3		
CH_3OH	1.62E+00	14172.79
C_3H_6	1.44E+00	12657.98
HCN		

1 number of Volume Sources
48 horizontal dimension (m)
6.10 release ht (m)
22.33 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

"Sour Water Stripper" (Area #10)

	lb/hr	lb/yr
CO	1.02E-03	8.94
H_2S	1.68E-02	146.89
NH_3	2.06E-02	180.69
CH_3OH		
C_3H_6		
HCN	1.31E-04	1.15

1 number of Volume Sources
16 horizontal dimension (m)
6.10 release ht (m)
7.44 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

"SRU" (Area #11, #12)
2 number of Volume Sources

	lb/hr	lb/yr
CO	3.08E-03	27.01
H_2S	1.89E-02	165.37
NH_3		
CH_3OH		
C_3H_6		
HCN		

2 number of Volume Sources
16 horizontal dimension (m)
6.10 release ht (m)
7.44 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

Note: Selective LDAR program was applied to Areas # 1#5, #7, #8, #9, #10 due to high uncontrolled emissions for the VOCs (methanol and propylene) and hydrogen sulfide

Fugitive Emissions - UAN Unit

Hydrogen Energy California LLC 4/11/2012
Hydrogen Energy California (HECA) Project

	Total Uncontrolled Emissions		Total Controlled Emissions	
Compound	**Emissions (lb/hr)**	**Emissions (tpy)**	**Emissions (lb/hr)**	**Emissions (tpy)**
NH_3	2.31	10.14	0.23	0.99
CO_2	0.28	1.23	0.02	0.09
HNO_3	2.12	9.29	0.19	0.82

Summary by Volume Source - Emissions are divided by number of Volume Sources

"Unit 84" Three Volume Sources

	lb/hr	lb/yr
NH_3	0.08	660.02
CO_2	0.01	62.96
HNO_3	0.06	546.25

EPA Table 2-1SOCMI Average Fugitive Emission Factors

Component Type	Service Type	Emission Factor [1] (kg/hr/source)	Control Efficiency (%) [3]
Valves	Gas	5.97E-03	92%
	Light Liquid	4.03E-03	88%
	Heavy Liquid	2.30E-04	
Pump Seals	Light Liquid	1.99E-02	75%
	Heavy Liquid	8.62E-03	
Compressor Seals	Gas	2.28E-01	
Pressure Relief Valves	Gas	1.04E-01	
Connectors	All	1.83E-03	93%
Open-Ended Lines	All	1.70E-03	
Sampling Connections	All	1.50E-02	
Agitator Seals [2]	All	1.99E-02	

Note:
Source: EPA 1995, Protocol for Equipment Leak Emission Estimates
(1) Factors are for total organic compound emission rates. Emission factors assumed to be same for other constituents emitted from the stream.
(2) Factors for light liquid pump seals can be used to estimate the leak rate from agitator seals
(3) Control efficiencies for an LDAR program at a SOCMI process unit using HON reg neg
(control effectiveness attributable to requirements of the hazardous NESHAPS equipment leak regulations)
It was assumed that factors for connectors can be used to estimate the leak rate from flanges.
Emission are conservative since these streams are not as volatile as the streams that the SOCMI factors were developed for.

Unit # 84: 100 wt% Liquid NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-	-	-
Valves	Light Liquid	140	8760	1.24	5.45	0.15	0.65
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	All	195	8760	0.79	3.45	0.06	0.24
			Total	**2.03**	**8.89**	**0.20**	**0.89**
			NH_3	2.03	8.89	0.20	0.89

Unit # 84: 62 wt% Vapor NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	17	8760	0.14	0.61	0.01	0.05
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	33	8760	0.08	0.36	0.01	0.03
			Total	**0.22**	**0.97**	**0.02**	**0.07**
			NH_3	0.22	0.97	0.02	0.07

Unit # 84: 6.3 wt% Vapor NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	33	8760	0.03	0.12	2.19E-03	9.59E-03
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	66	8760	0.02	0.07	1.17E-03	5.14E-03
			Total	**0.04**	**0.19**	**3.36E-03**	**1.47E-02**
			NH_3	0.04	0.19	3.36E-03	1.47E-02

Unit # 84: 2.3 wt% Vapor NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	33	8760	0.01	0.04	7.99E-04	3.50E-03
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	66	8760	0.01	0.03	4.29E-04	1.88E-03
			Total	**0.02**	**0.07**	**1.23E-03**	**5.38E-03**
			NH_3	0.02	0.07	1.23E-03	5.38E-03

Unit # 84: 1 wt% Liquid NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-	-	-
Valves	Light Liquid	15	8760	1.33E-03	5.84E-03	1.60E-04	7.00E-04
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	27	8760	1.09E-03	4.77E-03	7.63E-05	3.34E-04
			Total	**2.42E-03**	**1.06E-02**	**2.36E-04**	**1.03E-03**
			NH_3	2.42E-03	1.06E-02	2.36E-04	1.03E-03

Unit # 84: 38 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	17	8760	0.09	0.37	6.80E-03	0.03
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	33	8760	0.05	0.22	3.54E-03	0.02
			Total	**0.14**	**0.59**	**1.03E-02**	**0.05**
			CO_2	0.14	0.59	1.03E-02	0.05

Fugitive Emissions - UAN Unit

Hydrogen Energy California LLC 4/11/2012
Hydrogen Energy California (HECA) Project

Unit # 84: 6.4 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	60	8760	0.05	0.22	4.04E-03	0.02
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	45	8760	0.01	0.05	8.13E-04	0.00
			Total	**0.06**	**0.27**	**4.86E-03**	**0.02**
			CO_2	0.06	0.27	4.86E-03	0.02

Unit # 84: 3.6 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	83	8760	0.04	0.17	0.00	0.01
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	156	8760	0.02	0.10	0.00	0.01
			Total	**0.06**	**0.27**	**0.00**	**0.02**
			CO_2	0.06	0.27	0.00	0.02

Unit # 84: 1.8 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	69	8760	0.02	0.07	1.31E-03	5.73E-03
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	63	8760	4.58E-03	0.02	3.20E-04	1.40E-03
			Total	**0.02**	**0.09**	**1.63E-03**	**7.13E-03**
			CO_2	0.02	0.09	1.63E-03	7.13E-03

Unit # 84: 60 wt% Liquid HNO_3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	99	8760	0.78	3.42	0.06	0.27
Valves	Light Liquid	96	8760	0.51	2.24	0.06	0.27
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	264	8760	0.64	2.80	0.04	0.20
			Total	**1.93**	**8.46**	**0.17**	**0.74**
			HNO_3	1.93	8.46	0.17	0.74

Unit # 84: 48 wt% Liquid HNO_3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	0	8760	-	-	-	-
Valves	Light Liquid	24	8760	0.10	0.45	0.01	0.05
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	45	8760	0.09	0.38	0.01	0.03
			Total	**0.19**	**0.83**	**0.02**	**0.08**
			HNO_3	0.19	0.83	0.02	0.08

Note:
Please note that component counts listed in the tables above are only estimates, and do not represent exact component counts

E_{TOC} = $F_A * WF_{TOC} * N$

Where:
F_A = Applicable average emisison factor for equipment type
WF_{TOC} = Average weight fraction of TOC in the stream
N = Number of pieces of equipment of the applicable equipment type

The SOCMI emission factor does not need to be corrected for methane in the stream, because the emission factor is for total organic compounds.

Stream Speciation

Comound	Wt % ($WF_{Constituent}$)										
	100 wt% Liquid NH3	62 wt% Vapor NH3	6.3 wt% Vapor NH3	2.3 wt% Vapor NH3	1 wt% Liquid NH3	38 wt% Vapor CO2	6.4 wt% Vapor CO2	3.6 wt% Vapor CO2	1.8 wt% Vapor CO2	60 wt% Liquid Nitric Acid	48 wt% Liquid Nitric Acid
NH_3	100.0%	62.0%	6.3%	2.3%	1.0%						
CO_2						38.0%	6.4%	3.6%	1.8%		
Nitric Acid (HNO_3)										60.0%	48.0%
$WF_{Constituents}$ [1]	**100.0%**	**62.0%**	**6.3%**	**2.3%**	**1.0%**	**38.0%**	**6.4%**	**3.6%**	**1.8%**	**60.0%**	**48.0%**

Conversion Note:
1 kg = 2.20 pound

Note:
(1) $WF_{Constituent}$ only shows the constituants that are of concern for air quality permitting, such as VOCs, TACs, criteria pollutants and GHGs

	Stream										
	100 wt% Liquid NH3	62 wt% Vapor NH3	6.3 wt% Vapor NH3	2.3 wt% Vapor NH3	1 wt% Liquid NH3	38 wt% Vapor CO2	6.4 wt% Vapor CO2	3.6 wt% Vapor CO2	1.8 wt% Vapor CO2	60 wt% Liquid Nitric Acid	48 wt% Liquid Nitric Acid
Valves - Gas	0	17	33	33	0	17	60	83	69	99	0
Valves - Light Liquid	140	0	0	0	15	0	0	0	0	96	24
Valves - Heavy Liquid	0	0	0	0	0	0	0	0	0	0	0
Connectors	195	33	66	66	27	33	45	156	63	264	45
	335	**50**	**99**	**99**	**42**	**50**	**105**	**239**	**132**	**459**	**69**

	Stream										
	100 wt% Liquid NH3	62 wt% Vapor NH3	6.3 wt% Vapor NH3	2.3 wt% Vapor NH3	1 wt% Liquid NH3	38 wt% Vapor CO2	6.4 wt% Vapor CO2	3.6 wt% Vapor CO2	1.8 wt% Vapor CO2	60 wt% Liquid Nitric Acid	48 wt% Liquid Nitric Acid
Compound	**Annual Fugitive Emissions with LDAR Application (ton/yr)**										
NH_3	0.89	0.07	0.01	0.01	1.03E-03						
CO_2						0.59	0.27	0.27	0.09		
HNO_3										0.74	0.08

Summary by Volume Source for Modeling - Emissions are divided by number of Volume Sources
UAN Unit

	lb/hr	lb/yr
NH_3	0.226	1,980.07
HNO_3	0.187	1,638.74

1 number of Volume Sources
24 horizontal dimension (m)
6.10 release ht (m)
11.16 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

Fugitive Emissions - Urea Unit

Hydrogen Energy California LLC 4/11/2012
Hydrogen Energy California (HECA) Project

	Total Uncontrolled Emissions		Total Controlled Emissions	
Compound	**Emissions (lb/hr)**	**Emissions (tpy)**	**Emissions (lb/hr)**	**Emissions (tpy)**
NH_3	4.19	18.34	0.40	1.76
CO_2	2.93	12.84	0.23	0.99

Summary by Volume Source - Emissions are divided by number of Volume Sources

"Unit 82" Three Volume Sources

	lb/hr	lb/yr
NH_3	0.13	1,171.95
CO_2	0.08	660.60

EPA Table 2-1SOCMI Average Fugitive Emission Factors

Component Type	Service Type	Emission Factor[(1)] (kg/hr/source)	Control Efficiency (%) [(3)]
Valves	Gas	5.97E-03	92%
	Light Liquid	4.03E-03	88%
	Heavy Liquid	2.30E-04	
Pump Seals	Light Liquid	1.99E-02	75%
	Heavy Liquid	8.62E-03	
Compressor Seals	Gas	2.28E-01	
Pressure Relief Valves	Gas	1.04E-01	
Connectors	All	1.83E-03	93%
Open-Ended Lines	All	1.70E-03	
Sampling Connections	All	1.50E-02	
Agitator Seals[(2)]	All	1.99E-02	

Note:
Source: EPA 1995, Protocol for Equipment Leak Emission Estimates
(1) Factors are for total organic compound emission rates. Emission factors assumed to be same for other constituents emitted from the stream.
(2) Factors for light liquid pump seals can be used to estimate the leak rate from agitator seals
(3) Control efficiencies for an LDAR program at a SOCMI process unit using HON reg neg
(control effectiveness attributable to requirements of the hazardous NESHAPS equipment leak regulations)
It was assumed that factors for connectors can be used to estimate the leak rate from flanges.
Emission are conservative since these streams are not as volatile as the streams that the SOCMI factors were developed for.

Unit # 82: 100 wt% Liquid NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-	-	-
Valves	Light Liquid	77	8760	0.68	3.00	0.08	0.36
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	All	141	8760	0.57	2.49	0.04	0.17
			Total	**1.25**	**5.49**	**0.12**	**0.53**
			NH_3	1.25	5.49	0.12	0.53

Unit # 82: 50-70 wt% Liquid NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-	-	-
Valves	Light Liquid	47	8760	0.29	1.28	0.04	0.15
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	63	8760	0.18	0.78	0.01	0.05
			Total	**0.47**	**2.06**	**0.05**	**0.21**
			NH_3	0.47	2.06	0.05	0.21

Unit # 82: 25-40 wt% Liquid NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-	0.00E+00	0.00E+00
Valves	Light Liquid	117	8760	0.42	1.82	0.05	0.22
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	225	8760	0.36	1.59	2.54E-02	1.11E-01
			Total	**0.78**	**3.41**	**7.53E-02**	**3.30E-01**
			NH_3	0.78	3.41	7.53E-02	3.30E-01

Unit # 82: 0.5-25 wt% Liquid NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	0	8760	-	-	0.00E+00	0.00E+00
Valves	Light Liquid	254	8760	0.56	2.47	0.07	0.30
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	456	8760	0.46	2.01	3.22E-02	1.41E-01
			Total	**1.02**	**4.49**	**9.99E-02**	**4.38E-01**
			NH_3	1.02	4.49	9.99E-02	4.38E-01

Unit # 82: 3-30 wt% Vapor NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	60	8760	0.24	1.04	0.02	0.08
Valves	Light Liquid	60	8760	1.60E-01	7.00E-01	1.92E-02	8.41E-02
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	219	8760	2.65E-01	1.16E+00	1.86E-02	8.13E-02
			Total	**6.62E-01**	**2.90E+00**	**5.67E-02**	**2.48E-01**
			NH_3	6.62E-01	2.90E+00	5.67E-02	2.48E-01

Unit # 82: 30-60 wt% Vapor NH3

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	23	8760	0.18	0.80	1.45E-02	0.06
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	45	8760	0.11	0.48	7.63E-03	0.03
			Total	**0.29**	**1.27**	**2.22E-02**	**0.10**
			NH_3	0.29	1.27	0.02	0.10

Unit # 82: 100 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	60	8760	0.79	3.46	6.32E-02	0.28
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	45	8760	0.18	0.80	1.27E-02	0.06
			Total	**0.97**	**4.25**	**7.59E-02**	**0.33**
			CO_2	0.97	4.25	7.59E-02	0.33

Unit # 82: 50-70 wt% Liquid CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	83	8760	0.76	3.35	0.06	0.27
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	156	8760	0.44	1.93	0.03	0.14
			Total	**1.21**	**5.28**	**0.09**	**0.40**
			CO_2	1.21	5.28	0.09	0.40

Fugitive Emissions - Urea Unit

Hydrogen Energy California LLC 4/11/2012
Hydrogen Energy California (HECA) Project

Unit # 82: 25-40 wt% Liquid CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	69	8760	0.36	1.59	2.91E-02	1.27E-01
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	63	8760	1.02E-01	0.45	7.12E-03	3.12E-02
			Total	**0.46**	**2.04**	**3.62E-02**	**1.58E-01**
			CO_2	0.46	2.04	3.62E-02	1.58E-01

Unit # 82: 0.5-25 wt% Liquid CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	26	8760	0.09	0.37	6.84E-03	0.03
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	51	8760	0.05	0.23	3.60E-03	0.02
			Total	**0.14**	**0.60**	**1.04E-02**	**0.05**
			CO_2	0.14	0.60	0.01	0.05

Unit # 82: 2-30 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	26	8760	0.10	0.45	8.21E-03	0.04
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	51	8760	0.06	0.27	4.32E-03	0.02
			Total	**0.16**	**0.72**	**1.25E-02**	**0.05**
			CO_2	0.16	0.72	0.01	0.05

Unit # 82: 20-65 wt% Vapor CO_2

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	57	8760	0.49	2.14	3.90E-02	0.17
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	81	8760	0.21	0.93	1.49E-02	0.07
			Total	**0.70**	**3.07**	**5.39E-02**	**0.24**
			CO_2	0.70	3.07	0.05	0.24

Note:
Please note that component counts listed in the tables above are only estimates, and do not represent exact component counts

E_{TOC} = $F_A * WF_{TOC} * N$

Where:
F_A = Applicable average emisison factor for equipment type
WF_{TOC} = Average weight fraction of TOC in the stream
N = Number of pieces of equipment of the applicable equipment type

The SOCMI emission factor does not need to be corrected for methane in the stream, because the emission factor is for total organic compounds.

Stream Speciation

Comound	Wt % ($WF_{Constituent}$) 100 wt% Liquid NH3	50-70 wt% Liquid NH3	25-40 wt% Liquid NH3	0.5-25 wt% Liquid NH3	3-30 wt% Vapor NH3	30-60 wt% Vapor NH3	100 wt% Vapor CO2	50-70 wt% Liquid CO2	25-40 wt% Liquid CO2	0.5-25 wt% Liquid CO2	2-30 wt% Vapor CO2	30-65 wt% Vapor CO2
NH_3	100.0%	70.0%	40.0%	25.0%	30.0%	60.0%						
CO_2							100.0%	70.0%	40.0%	25.0%	30.0%	65.0%
$WF_{Constituents}$ [1]	**100.0%**	**70.0%**	**40.0%**	**25.0%**	**30.0%**	**60.0%**	**100.0%**	**70.0%**	**40.0%**	**25.0%**	**30.0%**	**65.0%**

Conversion Note:
1 kg = 2.20 pound

Note:
(1) $WF_{Constituent}$ only shows the constituants that are of concern for air quality permitting, such as VOCs, TACs, criteria pollutants and GHGs

	Stream 100 wt% Liquid NH3	50-70 wt% Liquid NH3	25-40 wt% Liquid NH3	0.5-25 wt% Liquid NH3	3-30 wt% Vapor NH3	30-60 wt% Vapor NH3	100 wt% Vapor CO2	50-70 wt% Liquid CO2	25-40 wt% Liquid CO2	0.5-25 wt% Liquid CO2	2-30 wt% Vapor CO2	30-65 wt% Vapor CO2
Valves - Gas	0	0	0	0	60	23	60	83	69	26	26	57
Valves - Light Liquid	77	47	117	254	60	0	0	0	0	0	0	0
Valves - Heavy Liquid	0	0	0	0	0	0	0	0	0	0	0	0
Connectors	141	63	225	456	219	45	45	156	63	51	51	81
	218	**110**	**342**	**710**	**339**	**68**	**105**	**239**	**132**	**77**	**77**	**138**

	Stream 100 wt% Liquid NH3	50-70 wt% Liquid NH3	25-40 wt% Liquid NH3	0.5-25 wt% Liquid NH3	3-30 wt% Vapor NH3	30-60 wt% Vapor NH3	100 wt% Vapor CO2	50-70 wt% Liquid CO2	25-40 wt% Liquid CO2	0.5-25 wt% Liquid CO2	2-30 wt% Vapor CO2	30-65 wt% Vapor CO2
Compound	**Annual Fugitive Emissions with LDAR Application (ton/yr)**											
NH_3	0.53	0.21	0.33	0.44	2.48E-01	0.10						
CO_2							0.33	0.40	1.58E-01	0.05	0.05	0.24

Summary by Volume Source for Modeling - Emissions are divided by number of Volume Sources
Urea Unit

	lb/hr	lb/yr
NH_3	0.201	1,758

2 number of Volume Sources
12 horizontal dimension (m)
6.10 release ht (m)
5.58 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

Fugitive Emissions - Ammonia Unit

Hydrogen Energy California LLC 4/11/2012
Hydrogen Energy California (HECA) Project

	Total Uncontrolled Emissions		Total Controlled Emissions	
Compound	**Emissions (lb/hr)**	**Emissions (tpy)**	**Emissions (lb/hr)**	**Emissions (tpy)**
NH_3	8.33	36.48	0.64	2.79

Summary by Volume Source - Emissions are divided by number of Volume Sources

"Unit 81" Three Volume Sources

	lb/hr	lb/yr
NH_3	0.21	1,861.32

EPA Table 2-1SOCMI Average Fugitive Emission Factors

Component Type	Service Type	Emission Factor [1] (kg/hr/source)	Control Efficiency (%) [3]
Valves	Gas	5.97E-03	92%
	Light Liquid	4.03E-03	88%
	Heavy Liquid	2.30E-04	
Pump Seals	Light Liquid	1.99E-02	75%
	Heavy Liquid	8.62E-03	
Compressor Seals	Gas	2.28E-01	
Pressure Relief Valves	Gas	1.04E-01	
Connectors	All	1.83E-03	93%
Open-Ended Lines	All	1.70E-03	
Sampling Connections	All	1.50E-02	
Agitator Seals [2]	All	1.99E-02	

Note:
Source: EPA 1995, Protocol for Equipment Leak Emission Estimates
(1) Factors are for total organic compound emission rates. Emission factors assumed to be same for other constituents emitted from the stream.
(2) Factors for light liquid pump seals can be used to estimate the leak rate from agitator seals
(3) Control efficiencies for an LDAR program at a SOCMI process unit using HON reg neg
(control effectiveness attributable to requirements of the hazardous NESHAPS equipment leak regulations)
It was assumed that factors for connectors can be used to estimate the leak rate from flanges.
Emission are conservative since these streams are not as volatile as the streams that the SOCMI factors were developed for.

Unit # 81: 0.14 wt% (or 0.07 mol %) NH3 in Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	177	8760	2.33	10.20	0.19	0.82
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	All	327	8760	1.32	5.78	0.09	0.40
			Total	**3.65**	**15.98**	**0.28**	**1.22**
			NH_3	3.65	15.98	0.28	1.22

Unit # 81: 5.8 wt % (or 3.1 mol %) NH3 in Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	227	8760	2.09	9.16	0.17	0.73
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	378	8760	1.07	4.68	0.07	0.33
			Total	**3.16**	**13.84**	**0.24**	**1.06**
			NH_3	3.16	13.84	0.24	1.06

Unit # 81: 7.8 wt % (or 4.3 mol %) NH3 in Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	84	8760	0.44	1.94	3.54E-02	1.55E-01
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	93	8760	0.15	0.66	1.05E-02	4.60E-02
			Total	**0.59**	**2.59**	**4.59E-02**	**2.01E-01**
			NH_3	0.59	2.59	4.59E-02	2.01E-01

Unit # 81: 32.9 wt % (or 20.7 mol %) NH3 in Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	131	8760	0.43	1.89	3.45E-02	1.51E-01
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	258	8760	0.26	1.14	1.82E-02	7.98E-02
			Total	**0.69**	**3.03**	**5.27E-02**	**2.31E-01**
			NH_3	0.69	3.03	5.27E-02	2.31E-01

Unit # 81: 35.7 wt % (or 31.6 mol %) NH3 in Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	38	8760	0.15	0.66	0.01	0.05
Valves	Light Liquid	0	8760	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	72	8760	8.71E-02	3.82E-01	6.10E-03	2.67E-02
			Total	**2.37E-01**	**1.04E+00**	**1.81E-02**	**7.93E-02**
			NH_3	2.37E-01	1.04E+00	1.81E-02	7.93E-02

Unit # 81: 99.99 wt % (or 99.9 mol %) NH3 in Gas

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC}) lb/hr	Uncontrolled Emissions (E_{TOC}) tpy	Controlled Emissions (E_{TOC}) lb/hr	Controlled Emissions (E_{TOC}) tpy
Valves	Gas	414	8760	3.27	14.32	2.62E-01	1.15
Valves	Light Liquid	0	8760	-	-	-	-
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	438	8760	1.06	4.64	7.42E-02	0.33
			Total	**4.33**	**18.96**	**3.36E-01**	**1.47**
			NH_3	4.33	18.96	0.34	1.47

Fugitive Emissions - Ammonia Unit

Hydrogen Energy California LLC 4/11/2012
Hydrogen Energy California (HECA) Project

Unit # 81: 099.99 wt % (or 99.9 mol %) NH3 in Liquid

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	0	8760	-	-	0.00E+00	-
Valves	Light Liquid	575	8760	5.11	22.38	0.61	2.69
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	732	8760	2.95	12.94	2.07E-01	0.91
			Total	**8.06**	**35.31**	**8.20E-01**	**3.59**
			NH_3	8.06	35.31	8.20E-01	3.59

Unit # 81: 5.61 wt % NH_3 in liquid water

Component	Service	Equipment Count (N)	Annual Hours of Operation	Uncontrolled Emissions (E_{TOC})		Controlled Emissions (E_{TOC})	
				lb/hr	tpy	lb/hr	tpy
Valves	Gas	0	8760	-	-	-	-
Valves	Light Liquid	101	8760	0.90	3.93	0.11	0.47
Valves	Heavy Liquid	0	8760	-	-	-	-
Flanges	Light Liquid	186	8760	0.53	2.30	0.04	0.16
			Total	**1.42**	**6.23**	**0.14**	**0.63**
			NH_3	1.42	6.23	0.14	0.63

Note:
Please note that component counts listed in the tables above are only estimates, and do not represent exact component counts

E_{TOC} = $F_A * WF_{TOC} * N$

Where:
F_A = Applicable average emisison factor for equipment type
WF_{TOC} = Average weight fraction of TOC in the stream
N = Number of pieces of equipment of the applicable equipment type

The SOCMI emission factor does not need to be corrected for methane in the stream, because the emission factor is for total organic compounds.

Stream Speciation

Comound	Wt % ($WF_{Constituent}$)							
	0.14 wt % (or 0. 07 mol %) NH3 in gas	5.8 wt % (or 3.1 mol %) NH3 in gas	7.8 wt % (or 4.3 mol %) NH3 in gas	32.9 wt % (or 20.7 mol %) NH3 in gas	35.7 wt % (or 31.6 mol %) NH3 in gas	99.99 wt % (or 99.9 mol %) NH3 in gas	99.99 wt % (or 99.9 mol %) NH3 in liq	5.61 wt % NH3 in liq water
NH_3	100.0%	70.0%	40.0%	25.0%	30.0%	60.0%	100.0%	70.0%
$WF_{Constituents}$ [1]	**100.0%**	**70.0%**	**40.0%**	**25.0%**	**30.0%**	**60.0%**	**100.0%**	**70.0%**

Conversion Note:
1 kg = 2.20 pound

Note:
(1) $WF_{Constituent}$ only shows the constituants that are of concern for air quality permitting, such as VOCs, TACs, criteria pollutants and GHGs

	Stream							
	0.14 wt % (or 0. 07 mol %) NH3 in gas	5.8 wt % (or 3.1 mol %) NH3 in gas	7.8 wt % (or 4.3 mol %) NH3 in gas	32.9 wt % (or 20.7 mol %) NH3 in gas	35.7 wt % (or 31.6 mol %) NH3 in gas	99.99 wt % (or 99.9 mol %) NH3 in gas	99.99 wt % (or 99.9 mol %) NH3 in liq	5.61 wt % NH3 in liq water
Valves - Gas	177	227	84	131	38	414	0	0
Valves - Light Liquid	0	0	0	0	0	0	575	101
Valves - Heavy Liquid	0	0	0	0	0	0	0	0
Connectors	327	378	93	258	72	438	732	186
	504	**605**	**177**	**389**	**110**	**852**	**1307**	**287**

	Stream							
	0.14 wt % (or 0. 07 mol %) NH3 in gas	5.8 wt % (or 3.1 mol %) NH3 in gas	7.8 wt % (or 4.3 mol %) NH3 in gas	32.9 wt % (or 20.7 mol %) NH3 in gas	35.7 wt % (or 31.6 mol %) NH3 in gas	99.99 wt % (or 99.9 mol %) NH3 in gas	99.99 wt % (or 99.9 mol %) NH3 in liq	5.61 wt % NH3 in liq water
Compound	**Annual Fugitive Emissions with LDAR Application (ton/yr)**							
NH_3	1.22	1.06	0.20	0.23	7.93E-02	1.47	3.59	0.63

Summary by Volume Source for Modeling - Emissions are divided by number of Volume Sources
Ammonia Unit

	lb/hr	lb/yr
NH_3	0.319	2,792

2 number of Volume Sources
24 horizontal dimension (m)
6.10 release ht (m)
11.16 horizontal dimension (m)
5.67 vertical dimension (m)
40 vertical dimension used for calcs (ft)

Total Reduced Sulfur

Pollutant	Annual Rate (tons per year)	TRS as H2S (tons/yr)	Molecular Wt	Source of emissions		
Hydrogen Sulfide	2.64	2.64	34	CO_2 vent and fugitives		
Carbonyl Sulfide	2.69	1.53	60	CO_2 vent and fugitives	**Significance Threshold (tons/yr)**	**Significant?**
	Total	**4.17**			10.00	no

TRS definition: the total reduced sulfur contained in hydrogen sulfide, mercaptans, dimethyl sulfide, dimethyl disulfide or other organic sulfide compounds, all expressed as hydrogen sulfide. Sulfur dioxide, sulfur trioxide, or sulfuric acid are not to be included in the determination of TRS.

Reduced Sulfur Compounds

Pollutant	Annual Rate (tons per year)	RSC as H2S (tons/yr)	Molecular Wt	Source of emissions		
Hydrogen Sulfide	2.64	2.64	34	CO_2 vent and fugitives		
Carbon Disulfide	0.55	0.25	76	CTG/HRSG and coal dryer		
Carbonyl Sulfide	2.69	1.53	60	CO_2 vent and fugitives	**Significance Threshold (tons/yr)**	**Significant?**
	Total	**4.42**			10.00	no

Reduced sulfur compounds means H2S, carbonyl sulfide (COS), and carbon disulfide (CS2).

Sulfuric Acid Mist

Pollutant	Annual Rate (tons per year)	Significance Threshold (tons/yr)	Significant ?	Source of emissions
Sulfuric Acid Mist	1.14	7.00	no	CTG/HRSG and coal dryer

Hydrogen Sulfide

Pollutant	Annual Rate (tons per year)	Significance Threshold (tons/yr)	Significant ?	Source of emissions
Hydrogen Sulfide	2.64	10.00	no	CO_2 vent and fugitives

Fluorides

Pollutant	Annual Rate (tons per year)	Significance Threshold (tons/yr)	Significant ?	Source of emissions
Fluoride	0.001	3.00	no	Cooling towers

Lead

Pollutant	Annual Rate (tons per year)	Significance Threshold (tons/yr)	Significant ?	Source of emissions
Lead	0.007	0.60	no	CTG/HRSG and coal dryer

Pollutants listed above are in 40 CFR 52.21 (as of Apr 6, 2012)

Appendix N

Water Resources

Appendix N-1

Water Resources Information

AGREEMENT FOR WATER ACQUISITION BY HYDROGEN ENERGY INTERNATIONAL LLC FROM BUENA VISTA BRACKISH GROUNDWATER REMEDIATION PROJECT

THIS AGREEMENT ("Agreement") is made and entered into as of the Effective Date by and between HYDROGEN ENERGY CALIFORNIA LLC ("HYDROGEN ENERGY"), successor-in-interest to the August 15, 2008 Summary of Proposed Water Transfer Terms and a direct subsidiary of Hydrogen Energy International LLC, and the BUENA VISTA WATER STORAGE DISTRICT ("BV"). BV and HYDROGEN ENERGY are sometimes referred to individually as a "Party" and collectively as the "Parties."

INTRODUCTION

BV will operate a program for the recovery and delivery of brackish groundwater (the "BV Brackish Groundwater Remediation Project" as defined below). This Agreement sets forth the terms and conditions for HYDROGEN ENERGY to acquire water produced from the BV Brackish Groundwater Remediation Project. A map showing the proposed location of BV Brackish Groundwater Remediation Project facilities is set forth on Exhibit "A", Facility Map, and a description of the program for the BV Brackish Groundwater Remediation Project is set forth in more detail in Exhibit "B", Brackish Groundwater Remediation Project Description, both of which Exhibits "A" and "B" are attached hereto and by reference made a part hereof.

DEFINITIONS

1. **AF, AFY:** Acre-feet, or acre-feet of water per year.

2. **BV Brackish Groundwater Remediation Project:** A stand alone water management program or a component of BV's Water Management Program (the "BV Water Management Program") under which BV intends to sell, distribute, or otherwise dispose of water, the Brackish Groundwater Remediation Project being specifically described in Exhibit B.

3. **BV Sale Water:** Water recovered or withdrawn and purchased by HYDROGEN ENERGY (or made available for purchase under this Agreement) pursuant to the BV Brackish Groundwater Remediation Project and this Agreement.

4. **CEQA:** California Environmental Quality Act, as presently existing and any amendments thereto.

5. **HYDROGEN ENERGY Project:** HYDROGEN ENERGY's proposed development, construction, and operation of certain facilities to gasify petroleum coke or a petroleum coke blend to produce hydrogen-rich, substantially carbon-free fuel gas and carbon dioxide gas as a result of, among other aspects, long-term carbon sequestration, and

to use such fuel gas in the generation of baseload electric power in the State of California at a facility located in Kern County, within or reasonably near Section 16, T30S, R24E.

6. **Escalator:** An annual adjustment of the price per AFY of water pursuant to the formula as set forth in Section 4.F. of this Agreement.

7. **Point of Delivery:** The Point of Delivery of BV Sale Water delivered to HYDROGEN ENERGY via direct delivery of brackish water extracted from the groundwater basin, shall be within Kern County and within or reasonably near Section 16, T30S, R24E. (*See* Exhibit "A".) The exact location and type of Point of Delivery facilities shall be subject to the mutual agreement of the Parties.

8. **Project Parameters:** Project Parameters mean the facilities, management, and operations necessary to implement and carry out the provisions of the BV Brackish Groundwater Remediation Project as more particularly described in Exhibit B.

RECITALS

1. BV is a public agency organized in accordance with California Water Storage District Law (Division 14, commencing with Section 39000, of the California Water Code) for the purpose of acquiring, storing, distributing, and replenishing water supplies in Kern County, California.

2. HYDROGEN ENERGY is a Delaware limited liability company.

3. HYDROGEN ENERGY desires to purchase up to 7,500 AFY of BV Sale Water.

4. BV is authorized to sell, distribute, and otherwise dispose of water not necessary for the uses and purposes of the District (Water Code Section 43001).

5. BV is the owner of the BV Sale Water and has the right to extract, divert, transport, and sell such waters to HYDROGEN ENERGY pursuant to the terms as set forth in this Agreement.

6. BV desires HYDROGEN ENERGY to participate in the BV Brackish Groundwater Remediation Project as described in the terms and conditions set forth herein.

7. HYDROGEN ENERGY is not able to take immediate delivery of the BV Sale Water, but shall, pursuant to the terms hereof, make payments to BV for the right to obtain up to 7500 AFY of BV Sale Water in the future from the BV Brackish Groundwater Remediation Project (the "Reservation Fee Payment") as provided in Section 4.D herein.

NOW, THEREFORE, IN CONSIDERATION of the payment of money and the mutual promises of the Parties as set forth herein, it is agreed as follows:

AGREEMENT

1. **Description of Project.**

A. **BV Brackish Groundwater Remediation Project.** The BV Brackish Groundwater Remediation Project states that, within the Project Parameters as described in Exhibit B, approximately 12,000 AFY of brackish groundwater generally underlying the BV boundaries in Kern County, California may be recovered or withdrawn from the groundwater basin and put to beneficial use.

B. **HYDROGEN ENERGY Project.** The HYDROGEN ENERGY Project desires the right to purchase up to 7,500 AFY of BV Sale Water in accordance with and pursuant to this Agreement, the Project Parameters, and the following:

i. **Extraction, Delivery and Measurement.** Extraction/transportation facilities will be constructed which meet reasonable design and construction standards acceptable to BV, have prior approval of HYDROGEN ENERGY, which approval shall not be unreasonably withheld, and which will have the capacity to deliver BV Sale Water purchased by HYDROGEN ENERGY to the HYDROGEN ENERGY Project. BV shall use best efforts to make deliveries of BV Sale Water as scheduled by HYDROGEN ENERGY in accordance with Section 1.B.iii. Title to and custody of all BV Sale Water delivered hereunder shall pass to HYDROGEN ENERGY at the Point of Delivery. As between the Parties, BV shall be deemed to be in exclusive control and possession of the BV Sale Water until the same shall have been delivered to HYDROGEN ENERGY at the Point of Delivery, and HYDROGEN ENERGY shall be deemed to be in exclusive control and possession thereof after receipt of same at the Point of Delivery. The risk of loss for all BV Sale Water delivered hereunder shall be and remain with the Party having control and possession of the BV Sale Water as provided herein.

ii. **Inspection**. BV shall provide and be responsible for the operation, maintenance, testing, and calibration of all equipment, including the water meter (the "Water Meter"), up to and at the Point of Delivery. HYDROGEN ENERGY shall provide and be responsible for the operation, maintenance, testing, and calibration of all equipment after the Point of Delivery. The Water Meter shall be deemed the official metering station with regard to delivery hereunder. HYDROGEN ENERGY shall have the right, at its own expense, upon reasonable notice, which is generally deemed to be ten (10) days after written notice to BV, to inspect the equipment, including the Water Meter, associated with the Point of

Delivery. If for any reason the Water Meter or related equipment is out of service, out of repair, or is registering inaccurately to a substantial degree, the Party having control and possession of the equipment in question shall service or repair the out of service, out of repair, or inaccurate equipment as soon as reasonably practicable and the Parties, based on the best available data, shall determine the quantity of BV Sale Water until such time as the equipment or Water Meter is serviced, repaired, or made accurate. Neither Party shall interfere with or operate the facilities or equipment described in this Agreement that are known by the other Party to be owned, operated, or controlled by the other Party.

iii. **Purchase and Schedule.** Except as otherwise expressly provided herein, BV will annually make available to HYDROGEN ENERGY, and HYDROGEN ENERGY will annually purchase from BV, or pay BV for, the greater of (a) the minimum amount of the BV Sale Water as provided in the Minimum Purchase AFY on the table below ("Table") or (b) the actual BV Sale Water delivered at the Point of Delivery up to a maximum of 7,500 AFY from and after January 1, 2015, during the Term (as defined in this Agreement) or any such extension of the Term, in accordance with the following Table.

From	To	Minimum Purchase AFY	Maximum Purchase AFY
Jan. 1, 2009	Dec 31, 2014	0	7500
Jan. 1, 2015	Dec 31, 2015	1875	7500
Jan 1, 2016	Dec 31, 2016	3000	7500
Jan 1, 2017	Dec 31, 2017	4125	7500
Jan 1, 2018	Dec 31, 2018	5250	7500
Jan 1, 2019	Dec 31, 2039	7500	7500

HYDROGEN ENERGY has no obligation to schedule or receive any BV Sale Water, but nothing in this sentence relieves HYDROGEN ENERGY of its obligation to make payment for the minimum amount of the BV Sale Water as provided in the Minimum Purchase AFY column as set forth in the Table, provided BV would be able to provide the Minimum Purchase quantities if HYDROGEN ENERGY were to schedule them. HYDROGEN ENERGY shall schedule deliveries with BV in a timely manner to enable BV to deliver such BV Sale Water. HYDROGEN ENERGY will provide BV an indicative annual delivery schedule on or before November 1 of each calendar year for the next succeeding calendar year, and such schedule will include the desired monthly delivery schedules, but HYDROGEN ENERGY may, upon reasonable notice to BV, revise the schedule during the calendar year. No monthly scheduled amount shall exceed 14% of the total annual Maximum Purchase AFY.

If HYDROGEN ENERGY fails to take delivery at the Point of Delivery of any BV Sale Water made available by BV at the Point of Delivery and required to be purchased by HYDROGEN ENERGY pursuant to the above Table and consistent with the annual delivery schedule as described above, such BV Sale Water shall revert to BV without payment by BV and without setoff or other compensation to HYDROGEN ENERGY.

C. **Water Quality.** BV shall use its best efforts to provide BV Sale Water which shall have a total dissolved solids ("TDS") averaging approximately 2,000 mg/L with an acceptable range of from approximately 1000 mg/L to approximately 4000 mg/L, or as may otherwise be necessary to supply the quantity of water to be delivered pursuant to this Agreement.

D. **Point of Delivery.** BV will deliver the BV Sale Water at the Point of Delivery and consistent with the terms of this Agreement. Both Parties agree that deliveries may from time to time be delayed or interrupted as a result of pipeline, facility, and/or project maintenance requirements, and that the Parties will endeavor to coordinate such occurrences with one another, keep such occurrences to a minimum to the extent reasonably practicable, and that such normal occurrences shall not be deemed a breach of an obligation of either of the Parties hereto.

E. **Redundant Supply.** The Parties will cooperate in the development of a short-term alternative water supply to minimize or eliminate possible delivery interruptions.

F. **Waiver of Other Water and Pricing**. During the term of this Agreement, HYDROGEN ENERGY knowingly and voluntarily waives any and all water rights, or rights to water service, from or through BV with respect to Kern River Water, State Project Water or any other water supply available to BV on the area of land on which the HYDROGEN ENERGY Project facility will be situated (the "Facility Footprint") except as provided under this Agreement. Any such rights that may have in the past been used on or for the benefit of the Facility Footprint may be used by BV in any manner in its sole discretion without cost, offset or other compensation to HYDROGEN ENERGY. HYDROGEN ENERGY may, however, use its land other than the Facility Footprint for agricultural and other purposes for which BV shall provide water service upon the same terms and conditions as other similarly situated lands within BV, and in accordance with then existing BV policies. In addition, HYDROGEN ENERGY knowingly and voluntarily waives any and all right(s) to be charged a price for the BV Sale Water other than in accordance with and as is specifically set forth in this Agreement. In addition, HYDROGEN ENERGY knowingly and voluntarily waives any rights to, and covenants that it shall not, use groundwater underlying its property for Project operational

purposes on the Facility Footprint, except for the limited purpose set forth in 1 E in cooperation with BV.

2. Insurance, Representations, Warranties, Reliance, and Covenants.

A. **Insurance.**

i. BV has insurance coverage for their facilities and operations, including those facilities and operations involved in the BV Brackish Groundwater Remediation Project. BV shall, on execution of this Agreement, provide HYDROGEN ENERGY with a copy of such policies and instruct the insurance companies to send HYDROGEN ENERGY any material notices from the insurance company including notices of non-payment of premium or non-renewal of the policies.

ii. HYDROGEN ENERGY has insurance coverage for their facilities and operations, including those facilities and operations involved in the BV Brackish Groundwater Remediation Project. HYDROGEN ENERGY shall, on execution of this Agreement, provide BV with a copy of such policies and instruct the insurance companies to send BV any material notices from the insurance company including notices of non-payment of premium or non-renewal of the policies.

B. **Representations, Warranties, Covenants, and Reliance.**

i. **BV represents and warrants as follows:**

(1) BV shall, prior to commencement of the BV Brackish Groundwater Remediation Project and delivery of BV Sale Water pursuant thereto, complete an environmental review under CEQA. In completing this review, BV retains all of its rights and powers under CEQA, including without limitations the authority to: (i) conduct a full evaluation of the environmental impacts of the proposed project, feasible alternatives to the proposed project, and feasible mitigation measures; (ii) adopt feasible mitigation measures and/or alternatives in order to avoid or lessen significant environmental impacts resulting from the proposed project; (iii) determine that any significant environmental impacts of the proposed project that cannot be mitigated are acceptable due to overriding considerations; and/or (iv) decide to deny its approval of the proposed project and terminate this Agreement due to any significant, unmitigated environmental impacts resulting from the proposed project.

(2) The BV Brackish Groundwater Remediation Project includes the ability to extract and deliver to HYDROGEN ENERGY under this

Agreement at least 7,500 AFY of water meeting the standards set forth in this Agreement.

(3) BV has legally enforceable rights to water, including water from the Kern River and its tributaries, to divert, transport, spread, recharge, bank extract and deliver water to HYDROGEN ENERGY as set forth in the BV Brackish Groundwater Remediation Project and to carry out its performance under the terms of this Agreement.

(4) Water recovered or withdrawn under the BV Brackish Groundwater Remediation Project may be delivered inside Kern County to HYDROGEN ENERGY.

(5) BV represents and warrants that its entry into this Agreement does not create or result in the breach of any other agreement to which BV is a party or to which BV is otherwise subject to or bound.

(6) BV represents and warrants that there is no pending or threatened litigation involving the BV Brackish Groundwater Remediation Project or the ability of BV to sell Program water to HYDROGEN ENERGY.

(7) BV is causing an engineering analysis to be conducted, which is anticipated to conclude that 7,500 AFY can be produced by the BV Brackish Groundwater Remediation Project beginning in the year 2015, and continuing throughout the term of this Agreement.

ii. **HYDROGEN ENERGY represents and warrants as follows**:

(1) HYDROGEN ENERGY represents and warrants that entry into this Agreement does not create or result in the breach of any other agreement to which HYDROGEN ENERGY is a party or to which HYDROGEN ENERGY is otherwise subject to or bound.

(2) HYDROGEN ENERGY is currently able and shall make the agreed payments as forth in this Agreement.

(3) HYDROGEN ENERGY represents and warrants that, to its knowledge at the time HYDROGEN ENERGY executed this Agreement, there is no pending or threatened litigation involving HYDROGEN ENERGY or HYDROGEN ENERGY'S Project.

iii. **Reliance.** The Parties have relied on the forgoing representations, warranties, and covenants as a material inducement to execute this Agreement, and should any material representation not be correct or true, it shall constitute a material breach of this Agreement.

3. **Term and Termination.**

A. The initial term of this Agreement shall commence November, _____ 2009 ("Effective Date") and shall continue to and including December 31, 2039 (the "Term").

B. HYDROGEN ENERGY may terminate this Agreement at any time during the period commencing on the Effective Date and ending on December 31, 2014 upon ninety (90) days written notice to BV of HYDROGEN ENERGY's intent to terminate (the "Early Termination Period"); *provided, however*, termination by HYDROGEN ENERGY during the Early Termination Period shall not relieve HYDROGEN ENERGY of any payment obligations that would otherwise become due prior to the end of such ninety- (90) day period. In the event HYDROGEN ENERGY fails to commence or permanently ceases operation of the HYDROGEN ENERGY Project for reasons set forth in Section 19 below, HYDROGEN ENERGY may terminate this Agreement at any time after the Early Termination Period upon one hundred eighty (180) days prior written notice to BV, and shall pay when due, all obligations that would have typically accrued during the next two succeeding calendar years. From and after the effective date of any termination as provided herein, neither Party shall have any obligation of any kind to the other Party under this Agreement, except on account of breaches of any representation, warranty, or covenant of the Party in this Agreement occurring prior to the effective date of the termination.

C. BV may terminate this Agreement if the environmental review under CEQA referenced in Section 2.B.i(1) reveals any significant, unmitigated environmental impacts, and if BV does not find that these significant, unmitigated environmental impacts are acceptable due to overriding considerations, or in the event BV permanently ceases operations of its Brackish Groundwater Remediation Project for reasons set forth in Section 19 below.

D. Either Party may terminate this Agreement if the other Party breaches any material obligation under this Agreement and such breach continues for a period of ninety (90) days, or such other period as may be reasonable under the circumstances, after the date on which written notice is issued by the non-breaching Party. The non-breaching Party shall be entitled to seek any and all legal or equitable damages and/or remedies as a result of the breaching Party's breach.

4. **Payment and Charges.**

A. **Facility Construction.** BV shall, in good faith and after consultation with HYDROGEN ENERGY estimate, and, as a reservation right as provided in section 4.D below, HYDROGEN ENERGY agrees to pay an amount equal to, all of the costs of, including the acquisition of additional easements if BV's existing property rights are insufficient for purposes of establishing necessary rights of way, design, construction, and inspection of, the necessary improvements for water extraction, monitoring, and conveyance facilities (the

"Facilities") reasonably required for BV to extract, monitor, and convey BV Sale Water to HYDROGEN ENERGY pursuant to this Agreement. BV shall, in cooperation with HYDROGEN ENERGY, provide a proposed schedule for construction of the Facilities. BV shall, at its sole expense, (i) use its best efforts to construct the Facilities according to the schedule and using the same reasonable design and construction specifications as are approved by HYDROGEN ENERGY.and (ii) provide HYDROGEN ENERGY with corresponding cost estimates related to the improvements before BV commences such construction, which cost estimates will be calculated and paid as a component of the Reservation Fee Payment as provided in section 4.D below.

B. **Water Rate.** The water rate (the "Water Rate") shall be the initial Water Rate of BV Sale Water which on June 1, 2008, is $450.00 per AF as may be adjusted as provided in Section 4.F.

C. **Facility OMP&R Rate.** Annually on or before November 1 of each calendar year during the Term, BV shall provide HYDROGEN ENERGY with an estimate of proposed facility operation, maintenance, power and replacement costs associated with the BV Sale Water and necessary related facilities. Upon cost substantiation, HYRDOGEN ENERGY shall reimburse BV for actual, reasonable facility operation, maintenance, power, incremental administration, and replacement costs associated with and directly attributable to the extraction, monitoring, and conveyance of the BV Sale Water and all facilities required to meet the obligations of BV hereunder in order to supply the BV Sale Water as provided herein (the "Facility OMP&R Rate").

D. **Reservation Fee Payment.** For the period until December 31, 2014, HYDROGEN ENERGY shall pay to BV an annual non-refundable payment (the "Reservation Fee Payment") as provided herein to reserve the availability of Sale Water. The Reservation Fee Payment shall be an amount equal to the aggregate of (i) the annual cost estimate for that year provided by BV under section 4 A., plus (ii) 7,500 AF times ("x") the then applicable Water Rate x 15%, payable in quarterly installments as set forth in Section 4.G. below, which will increase to 7,500 AF x Water Rate x 20% when the California Energy Commission has given the HYDROGEN ENERGY Project a favorable preliminary staff assessment, but no later than January 1, 2010. If the aggregate of the cost estimates provided by BV under section 4 A. (ii) above for the Facilities are less than the actual costs incurred by BV for construction of the Facilities as shown by an interim or by a final accounting for construction of the Facilities, then the Reservation Fee Payment will increase in an amount equal to the difference, which will be payable within thirty (30) days of invoice by BV accompanied by the interim or final accounting. Alternatively, if such cost estimates are more than the actual costs incurred by BV for construction of the Facilities, then HYDROGEN ENERGY will receive a credit against its next

due quarterly installment of the Reservation Fee Payment following completion of the Facilities equal to the difference.

E. **Minimum Annual Payment.** The Minimum Annual Payment for each year to and including 2014 is the Reservation Fee Payment for that particular year. The Minimum Annual Payment for each year after 2014 is (i) the sum of the Water Rate multiplied by the Minimum Purchase Quantity for the year as set forth in the Table under section 1 B. (iii) above, plus (ii) the Facility OMP&R Rate, plus (iii) any amounts scheduled pursuant to Section 4 A. The Minimum Annual Payment for each year shall be paid in installments as set forth in Section 4.G. below; *provided, however*, HYDROGEN ENERGY shall not be obligated to make the Minimum Annual Payment for any year after 2014 to the extent BV is not able to provide the Minimum Purchase quantity during that year if HYDROGEN ENERGY were to schedule it, unless the inability of BV to deliver is caused by HYDROGEN ENERGY's failure to pay for the facilities referenced in Section 4 A. above.

F. **Escalator.** The initial Water Rate shall be adjusted annually beginning January 1, 2009, during the term of this Agreement using the average of i) the percentage change in the Consumer Price Index on a calendar year basis (All Urban Consumers – All Items – Southern California Area – starting June 2008 with a base index of 229.033) and ii) the percentage change in the State Water Project ("SWP") unit costs of BV, as adjusted for long term reliability, which shall be determined by dividing BV's total initial annual financial obligation for BV's full SWP Table A Amount by BV's SWP Table A Amount times the most current long-term average delivery estimate of SWP Table A deliveries from the Delta ("Average Delivery Estimate"), as set forth in the latest available Department of Water Resources State Water Project Delivery Reliability Report ("Report") . If the Average Delivery Estimate to be used is less than 20%, then the Average Delivery Estimate will be deemed to be 20% for purposes of this section. Currently, the Average Delivery estimate is calculated at 63%, as set forth in Table 6.4 of the 2007 report published August 2008. In the event the Report is no longer published, or the average delivery estimate is no longer calculated, the Parties shall develop a similar escalator factor to be used.

G. **Payment of Charges and Credit.** The Reservation Fee Payment for the year 2009, in the amount of $515,531.25, and the payment to BV for additional expenses in the amount of $50,824.40, shall be paid to BV within ten (10) days of Hydrogen Energy's execution of this Agreement. The Minimum Annual Payment, as well as any other amounts to be paid pursuant to this Agreement, shall be made in advance of water deliveries, and in four (4) installments, to wit: 25% on March 31st , 25% June 30th , 25% September 31st, and 25% December 31st of each year of the term. The payments shall be made on the last business day preceding the above installment dates by wire transfer to BV as described in Section 10 below. There will be a five (5) year potential credit

period with respect to charges paid by HYDROGEN ENERGY to BV under this section 4 G. If any person, entity or organization within a period of five (5) years from the date of this Agreement seeks to obtain water service through or from BV, similar to the water service provided to HYDROGEN ENERGY, and if such water service requires the use of any part of the Facilities, then BV shall charge that person, entity or organization a proportionate share of the total construction costs of the Facilities and shall apply that amount when received by BV as a credit against the amounts payable by HYDROGEN ENERGY under this section 4 G. BV's determination of the proportionate share to be paid will take into consideration the amount of third party use, total Facility capacity, and the Facilities' expected useful life, and will be subject to consultation with HYDROGEN ENERGY. No such third party use will interfere with sale and delivery of BV Sale Water to HYDROGEN ENERGY consistent with the intent and terms of this Agreement. All rights to a credit will terminate at the end of the five (5) year period.

H. **Fees and Expenses.** HYDROGEN ENERGY shall be responsible for any and all regulatory and permitting fees and costs associated with the water transfer and transportation of BV Sale Water.

I. **CEQA and CEC Compliance.** HYDROGEN ENERGY and BV shall cooperate with one another with respect to CEQA and California Energy Commission ("CEC") compliance pertaining to the proposed sale of the BV Sale Water. HYDROGEN ENERGY shall be solely responsible for all fees, costs, and expenses associated with CEQA compliance to construct and operate the Facilities under this Agreement (including reasonable litigation costs), CEC, and any other regulatory agency compliance, whether incurred by BV or HYDROGEN ENERGY.

J. **Suspension of Payment.** Should BV fail to deliver the BV Sale Water as provided in this Agreement for any reason, HYDROGEN ENERGY shall be excused from payment for the amount of BV Sale Water that BV is not able to deliver unless caused by HYDROGEN ENERGY's failure to construct or pay for the facilities as provided in Section 4 A. above. If HYDROGEN ENERGY and BV cannot agree on the duration of the excused payment, the term of the excused payment and the commencement of future payments shall be determined by mediation as set forth in Section 7.A. of this Agreement, and during the pendency of such dispute resolution, the Parties will not otherwise suspend performance under this Agreement. Should HYDROGEN ENERGY fail to make payments when due for BV Sale Water delivered to the Point of Delivery, or made available at such location pursuant to the terms of this Agreement, after notice and opportunity to cure as provided in this Agreement, BV may suspend its delivery obligations during any such failure.

K. **BV Operations.** BV will maintain and operate its assets in a manner that permits BV to perform its obligations under this Agreement.

L. **BV Cooperation.** In the event that HYDROGEN ENERGY requires for operation of the HYDROGEN ENERGY Project during any period any quantity of water beyond that which BV is committed to supply under this Agreement, BV will negotiate in good faith with HYDROGEN ENERGY for an additional supply. If BV is for any reason unable to supply all or any portion of the BV Sale Water set forth in the Table, then BV will reasonably cooperate with HYDROGEN ENERGY as requested by HYDROGEN ENERGY to enable HYDROGEN ENERGY to acquire and receive, from sources within or without BV, the water that BV is committed to, but cannot, supply. Such cooperative efforts shall include without limitation: (i) providing capacity in the facilities described in Section 4.A up to the full capacity of those facilities; (ii) to the extent the facilities are non-operable or cannot convey the maximum amount of water set forth in the Table, by providing unused capacity in other facilities of BV so long as such other waters do not materially affect water quality; (iii) cooperating in exchange transactions; and (iv) assisting HYDROGEN ENERGY or its designee(s) in acquiring easements for pipelines and other facilities necessary for the delivery of such water to HYDROGEN ENERGY. BV shall not be required to cooperate to the extent such cooperative efforts will unreasonably affect BV's primary obligation of delivering/transporting water for irrigation purposes and/or prior historic practices. HYDROGEN ENERGY shall reimburse BV for its reasonable costs and expenses incurred in any such cooperative efforts; provided, nothing in this sentence shall limit any of HYDROGEN ENERGY's rights against BV on account of any breach of any representation, warranty or covenant of BV in this Agreement.

5. Conditions Precedent/Subsequent.

A. **HYDROGEN ENERGY Conditions Precedent.** HYDROGEN ENERGY's obligation to purchase BV Sale Water hereunder is subject to satisfaction or express written waiver by HYDROGEN ENERGY of each of the following conditions precedent. Failure of any of the following conditions to be met to the satisfaction of, or waived by, HYDROGEN ENERGY shall entitle HYDROGEN ENERGY to terminate this Agreement, except for the obligations to make Reservation Fee Payments already incurred as provided herein. HYDROGEN ENERGY shall timely communicate such failure to BV in writing.

i. There are no material, adverse changes to the representations and warranties made by BV in Section 2.B.

ii. Delivery by BV of an opinion of its legal counsel addressed to HYDROGEN ENERGY that this Agreement has been duly authorized,

executed, and delivered by BV and constitutes the valid and binding obligation of BV and each of them enforceable against BV in accordance with its terms, subject to the effect of any bankruptcy, insolvency, reorganization, moratorium or other laws or judicial decisions affecting the enforcement of creditors' right generally, including, but not limited to, the effect of statutory and other laws or judicial decisions regarding fraudulent conveyances or transfers and preferential transfers; and except as set forth in Section 2.B.i.(6) that presently there is no litigation in which BV is a party which in any way affects BV's ability to perform this Agreement.

iii. HYDROGEN ENERGY's reasonable satisfaction that all CEQA and other environmental obligations, if any, are complete, including the passage without any challenge of the applicable statute of limitations under CEQA for challenging the implementation of this Agreement.

B. **BV Conditions Precedent.** BV's obligation to sell the BV Sale Water hereunder is subject to satisfaction or express written waiver by BV of each of the following conditions precedent. Failure of any of the following conditions to be met to the satisfaction of or waived by BV shall entitle BV to terminate this Agreement. BV shall timely communicate such failure to HYDROGEN ENERGY in writing.

i. There are no material, adverse changes to the representations and warranties made by HYDROGEN ENERGY in Section 2.B.

ii. Delivery by HYDROGEN ENERGY of an opinion of its legal counsel addressed to BV and BV, jointly and severally, that this Agreement has been duly authorized, executed, and delivered by HYDROGEN ENERGY and constitutes the valid and binding obligation of HYDROGEN ENERGY enforceable against HYDROGEN ENERGY in accordance with its terms, subject to the effect of any bankruptcy, insolvency, reorganization, moratorium or other laws or judicial decisions affecting the enforcement of creditors' right generally, including, but not limited to, the effect of statutory and other laws or judicial decisions regarding fraudulent conveyances or transfers and preferential transfers; and except as set forth in Section 2.B.ii.(3) that presently there is no litigation in which HYDROGEN ENERGY is a party which in any way affects HYDROGEN ENERGY's ability to perform this Agreement.

iii. BV's reasonable satisfaction that all CEQA and other environmental and permitting obligations, if any, are complete.

6. **Material Default.** In the event that either HYDROGEN ENERGY or BV is in material default of this Agreement, the non-defaulting Party shall provide written

notice to the defaulting Party, identifying with reasonable specificity the nature of the claimed default. A material default includes HYDROGEN ENERGY failing to pay any charge or amount when due under this agreement, or BV failing to deliver water to HYDROGEN ENERGY. If the defaulting Party has not cured the event(s) of material default which is (are) identified in the notice required by this Article within 10 business days after receipt of written notification, or such other period as is reasonable under the circumstances, the non-defaulting Party shall be entitled to any and all remedies which may be available to it at law or in equity. This provision is not intended to provide a separate termination right, which is set forth in Section 3 C. above.

Each Party acknowledges that money damages may not be an adequate remedy for violations of this Agreement and that a non-defaulting Party may, in its sole discretion, seek and obtain from a court of competent jurisdiction specific performance or injunctive or such other relief as such court may deem just and proper to enforce this Agreement or to prevent any violation hereof. Each defaulting Party hereby waives any objection to specific performance or injunctive relief. The rights granted herein are cumulative.

7. **Dispute Resolution**. For matters involving other than a material default of this Agreement, the following provisions shall apply:

   A. **Mediation**. The Parties agree that any and all disputes, claims or controversies arising under this Agreement, whether for breach, enforcement, or interpretation thereof, shall be submitted to mediation in a mutually agreeable venue and if the matter is not resolved through mediation, then it may be submitted for non-binding arbitration as provided in Section 8.B. below. Any affected Party(ies) may commence mediation by providing the other affected Party(ies) a written request for mediation, setting forth the subject of the dispute and the relief requested. The affected Parties shall cooperate with one another in selecting a mediator and in scheduling the mediation proceedings. The affected Parties covenant that they shall participate in the mediation in good faith, and that they shall share equally in costs charged by the mediator. All offers, promises, conduct and statements, whether oral or written, made in the course of the mediation by any of the Parties, their agents, employees, experts and attorneys, and by the mediator or any of the mediator's employees, are confidential, privileged and inadmissible for any purpose, including impeachment, in any arbitration or other proceeding involving the Parties, provided that evidence that is otherwise admissible or discoverable shall not be rendered inadmissible or non-discoverable as a result of its use in the mediation. Any affected Party may request arbitration with respect to the matters submitted to mediation by filing a written request for arbitration at any time following the initial mediation session or 45 days after the date of filing the written request for mediation, whichever occurs first. The mediation may continue after the commencement of arbitration if the affected Parties so desire. Unless otherwise agreed by the affected Parties, the mediator shall be disqualified from serving as arbitrator in the case. The provisions of this

Section may be enforced by any Court of competent jurisdiction, and the Party seeking such enforcement shall be entitled to an award of all costs, fees and expenses, including attorneys' fees, to be paid by the Party against whom such enforcement is ordered.

B. **Arbitration**. Any dispute, claim or controversy arising under this Agreement, whether for breach, enforcement, or interpretation thereof, including the determination of the scope or applicability of this Agreement to arbitrate, which could not be resolved through the mediation process set forth above, may be submitted to non-binding arbitration and, with the agreement of both Parties, shall be determined by binding arbitration, before a sole arbitrator, in accordance with the laws of the State of California for agreements made in and to be performed in that State. Judgment on the binding arbitration award, if any, may be entered in any court having jurisdiction. The arbitrator may allocate all of the costs of the arbitration, including the fees of the arbitrator and the reasonable attorneys' fees of the prevailing Party, against the Party who did not prevail.

C. **Selection of Mediator/Arbitrator**. The Parties shall first attempt to mutually agree to a mediator or arbitrator. If the Parties fail to agree on the mediator or arbitrator, the Parties shall each nominate and exchange with each other the names of three persons to resolve the dispute. From this group of nominated mediators or arbitrators, the Parties shall select the Mediator or Arbitrator. If each of the Parties selects the same Mediator or Arbitrator, that person shall be the Mediator or Arbitrator. In the event two or more same persons are selected by the Parties, the person whose name precedes the other alphabetically shall be the Mediator or Arbitrator. If the Parties do not select the same person as the other Party, then each Party shall eliminate two of the other's selection and the remaining names shall be randomly drawn in order by either Party. The first drawn shall be the Mediator or Arbitrator unless there is a conflict of interest or the mediator or arbitrator cannot serve because of scheduling conflicts. In that case, the second name drawn shall be the Mediator or Arbitrator. No Mediator or Arbitrator shall be nominated or selected if they have any actual or perceived conflict of interest. If necessary, this process can be repeated to nominate or select a mediator or arbitrator if the final two selected Mediators or Arbitrators have any actual or perceived conflict of interest.

8. **Liability Regarding Distribution of BV Sale Water.**

A. HYDROGEN ENERGY and its officers, agents, or employees shall not be liable for the control, carriage, handling, use, disposal, or distribution of BV Sale Water upstream of any Point of Delivery, nor for any claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal or distribution of such water, unless such damages or claims are a result of intentional or reckless misconduct on the part of HYDROGEN ENERGY. BV shall indemnify and hold harmless HYDROGEN ENERGY, its

officers, agents, and employees from any such damages or claims of damages as set out in Section 9 of this Agreement.

B. BV and its officers, agents, and employees shall not be liable for the control, carriage, handling, use, disposal, or distribution of BV Sale Water downstream of any Point of Delivery; nor for any claim of damage of any nature whatsoever, including, but not limited to, property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water, unless such damages or claims are a result of intentional or reckless misconduct on the part of BV. HYDROGEN ENERGY shall indemnify and hold harmless BV its officers, agents, and employees from any such damages or claims of damages as set out in Section 9 of this Agreement.

9. **Indemnity and Hold Harmless.**

A. **BV Indemnity.** BV shall at all times indemnify, defend and save HYDROGEN ENERGY, its Board of Directors, officers, representatives, consultants, contractors, agents and employees free and harmless from, and pay in full, any and all claims, demands, losses, damages or expenses, including reasonable attorney fees and costs that HYDROGEN ENERGY, its Board of Directors, officers, representatives, consultants, contractors, agents and/or employees may sustain or incur in any manner relating to, arising out of or connected with BV's non-performance of the terms of this Agreement, excepting any loss, damage or expense and claims for loss, damage or expense resulting in any manner from the negligent or unlawful act or acts of HYDROGEN ENERGY, its Board of Directors, officers, representatives, consultants, contractors, agents or employees.

B. **HYDROGEN ENERGY Indemnity.** HYDROGEN ENERGY shall at all times indemnify, defend and save BV, its Board of Directors, officers, representatives, consultants, contractors, agents and employees free and harmless from, and pay in full, any and all claims, demands, losses, damages, or expenses, including reasonable attorneys' fees and costs that BV, its Board of Directors, officers, representatives, consultants, contractors, agents and/or employees may sustain or incur in any manner relating to, arising out of or connected with HYDROGEN non-performance of the terms of this Agreement, excepting any loss, damage or expense and claims for loss, damage or expense resulting in any manner from the negligent or unlawful act or acts of BV, its Board of Directors, officers, representatives, consultants, contractors, agents, or employees. It is specifically understood that BV will use its best efforts to meet CEQA requirements regarding the BV Brackish Groundwater Remediation Project and the sale of BV Sale Water to HYDROGEN ENERGY and that HYDROGEN ENERGY shall pay all costs (including BV's reasonable CEQA related litigation costs, if any) associated with such process.

10. **Notices and Wire Transfers.** All written notices required to be given pursuant to the

terms hereof shall be either (i) personally delivered, (ii) deposited in the United States express mail or first class mail, registered or certified, return receipt requested, postage prepaid, (iii) delivered by overnight courier service, or (iv) delivered by facsimile transmission, provided that the original of such notice is sent by certified United States mail, postage prepaid, no later than one (1) business day following such facsimile transmission. All such notices shall be deemed delivered upon actual receipt (or upon first attempt at delivery pursuant to the methods specified in clauses (i), (ii) or (iii) above if the intended recipient refuses to accept delivery). Wire transfers shall be effective on proper transmission by HYDROGEN ENERGY's transmitting agent. All such notices and wire transfers shall be delivered or wired to the following addresses or to such other address as the receiving Party may from time to time specify by written notice to the other Party:

To HYDROGEN ENERGY:	To BV:
Hydrogen Energy LLC One World Trade Center Suite 1600 Long Beach, CA 90831 - 1601 Attn: Jonathon Briggs, Regional Director Telephone: 562-276-1543 Facsimile: 562-276-1571 Email: jonathan.briggs@hydrogenenergy.com	Wire Transfers: Payment shall consist of a wire transfer to BV at Wells Fargo Bank, with specific account information to be provided. Buena Vista Water Storage District P. O. Box 756 Buttonwillow, CA 93206 Attn: Dan W. Bartel, Engineer Manager Telephone: 661-324-1101 Facsimile: 661-764-5053 Email: dbartel@bvh2o.com

11. **Counterparts**. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument. Signatures sent by facsimile shall be deemed originals and treated in all respects as originals. As may be necessary for any alternative dispute resolution required or permitted under this Agreement, a copy of this Agreement shall be deemed to be an original for the purposes of satisfying the California and/or Federal Rules of Evidence.

12. **Authority**. In signing below, each of the Parties represents and warrants to each of the other Parties that each is a duly organized or constituted entity, with all requisite power to carry out its obligations under this Agreement, and that the execution, delivery and performance of this Agreement have been duly authorized by all necessary action of the board of directors or other governing body of such Party, and shall not result in a violation of such Party's organizational documents.

13. **Governing Law**. This Agreement shall be construed and enforced in accordance with the laws of the State of California.

14. **Agreement**. No amendment of this Agreement shall be binding upon the Parties unless it is in writing and executed by all of the Parties.

15. **Further Action**. The Parties agree to and shall take such further action and execute and deliver such additional documents as may be reasonably required to effectuate the terms and conditions of this Agreement and to the extent consistent with the terms hereof.

16. **Assignment**. Except as provided below, neither Party shall assign, delegate, or otherwise transfer any of its rights or obligations under this Agreement without the prior written consent of the other Party, which consent shall not be unreasonably conditioned, withheld, or delayed.

A. HYDROGEN ENERGY may, without the consent of BV, assign this Agreement:

(i) to any person or entity that acquires all or substantially all of the assets of the HYDROGEN ENERGY Project;

(ii) to any entity or entities that directly or indirectly control, or are directly or indirectly controlled by or under common control with, HYDROGEN ENERGY; or

(iii) in connection with a merger of HYDROGEN ENERGY with another entity or any other transaction resulting in a change of control of the HYDROGEN ENERGY;

provided that the assignee, delegate or transferee or the entity surviving such merger, as applicable, agrees in a writing reasonably acceptable to BV, to be bound by the terms of this Agreement, and in BV's reasonable opinion is capable of abiding by all of the terms and condition contained within this Agreement;

B. HYDROGEN ENERGY, without the consent of BV, may grant a security interest in its interest under this Agreement to any of its lenders (an "HE Lender") as security for any loan or other obligation made for the purpose of financing or refinancing the construction and/or operation of the HYDROGEN ENERGY Project. Promptly after granting such security interest, HYDROGEN ENERGY shall notify BV in writing of the name, address, and telephone and facsimile numbers of each HE Lender to which HYDROGEN ENERGY's interest under this Agreement has been encumbered.

C. If HYDROGEN ENERGY encumbers its interest under this Agreement as permitted by this the preceding clause B. the following provisions shall apply:

(i) The HE Lender shall have the right, but not the obligation, to perform any act required to be performed by HYDROGEN ENERGY under this Agreement to prevent or cure a default by HYDROGEN ENERGY, and such act performed by the HE Lender shall be as effective to prevent or cure a default as if done by HYDROGEN ENERGY.

(ii) Upon the receipt of a written request from HYDROGEN ENERGY or any HE Lender, BV shall execute or arrange for the delivery of such certificates, consents, opinions, and other documents as may be reasonably necessary for HYDROGEN ENERGY to consummate any financing or refinancing of the HYDROGEN ENERGY Project or any part thereof and will enter into reasonable agreements with such HE Lender that provide that BV will recognize the rights of such HE Lender upon foreclosure of HE Lender's security interest and such other provisions as may be reasonably requested by any such HE Lender, so long as any such certificates, consents, opinion, and other documents do not in materially modify the terms of the Agreement between HYDROGEN ENERGY and BV.

(iii) BV acknowledges that upon an event of default by HYDROGEN ENERGY under any financing documents relating to the HYDROGEN ENERGY Project, any HE Lender may (but shall not be obligated to) assume, or cause its designee or a new lessee or purchaser of the HYDROGEN ENERGY Project to assume, all of the interests, rights, and obligations of HYDROGEN ENERGY thereafter arising under this Agreement. Notwithstanding any such assumption, HYDROGEN ENERGY shall not be released and discharged from and shall remain liable for any and all obligations to BV arising or accruing hereunder.

The provisions of this Section 16.C are for the benefit of any and all HE Lenders as well as the parties to this Agreement and shall be enforceable by any HE Lender as an express third-party beneficiary hereof. BV agrees that no HE Lender shall be obligated to perform any obligation or be deemed to incur any liability or obligation provided in this Agreement on the part of HYDROGEN ENERGY or shall have any obligation or liability to BV with respect to this Agreement except to the extent any HE Lender has assumed the obligations of HYDROGEN ENERGY hereunder pursuant to this Section 16.C.

D. Notwithstanding any of the foregoing provisions contained in this Section 16, BV shall not be obligated to acknowledge or assent to any assignment, delegation, or transfer to any third party in the event BV reasonably determines that such third party does not, or will not, or does not have the financial capability to, perform all of HYDROGEN ENERGY's obligations under this Agreement.

17. Water Acquisition by Hydrogen Energy. HYDROGEN ENERGY shall primarily use water acquired from BV at the HYDROGEN ENERGY Project, except in the event of an occurrence of an insufficient supply as considered in Section 4 L, above, or in Section 19 below. HYDROGEN ENERGY and BV may also enter into a separate agreement regarding water usage on other property owned or controlled by HYDROGEN ENERGY.

18. **Excess Treated Water**. In the event HYDROGEN ENERGY purchases and treats more water than is necessary for use at the HYDROGEN ENERGY Project and elects to sell or transfer such excess to a third party, no such sale or transfer shall take place until the Parties enter into and successfully complete negotiations for a separate agreement for such sale or transfer, pursuant to which BV may be entitled to an agreed upon payment proportionately related to the profits from any such sale or transfer; provided, however, that BV may not unreasonably withhold its approval of such sale or transfer.

19. **Force Majeure; Change in Law**. The respective obligations of each Party hereto shall be suspended while it is prevented from complying by acts of God; war; riots; civil insurrection; acts of civil or military authority; fires; floods; earthquakes; labor accidents or incidents; rules and regulations of any federal, state, or other governmental agency; changes in law, rules, or regulations of any federal, state or other governmental agency; or other cause of the same or other character any of which are beyond the reasonable control of such Party (collectively, "Force Majeure"). In the event of a suspension due to the foregoing, the Party whose obligations are suspended shall promptly notify the other Party in writing of such suspension and the cause and estimated duration of such suspension.

    The Party providing such notice shall be excused from fulfilling its obligations under this Agreement until such time as the Force Majeure has ceased to prevent performance or other remedial action is taken, at which time the Party shall promptly notify the other Party of the resumption of its obligations under this Agreement. Any Party rendered unable to fulfill any of its obligations by reason of a Force Majeure shall exercise due diligence to remove such inability with reasonable dispatch within a reasonable time period and mitigate the effects of the Force Majeure. The relief from performance shall be of no greater scope and of no longer duration than is required by the Force Majeure.

20. **Joint Drafting and Negotiation**. This Agreement has been jointly negotiated and drafted. The language of this Agreement shall be construed as a whole according to its fair meaning and without regard to or aid of Civil Code Section 1654 or similar judicial rules of construction. Each Party acknowledges that it has had the opportunity to seek the advice of experts and legal counsel prior to executing this Agreement and that it is fully aware of and understands all of its terms and the legal consequences thereof.

21. **Headings**. Headings used in this Agreement are for reference only and shall not affect the construction of this Agreement.

22. **No Third Party Beneficiaries**. Except as provided in Section 16, no third party shall be entitled to claim or enforce any rights under this Agreement.

23. **Severability**. In the event that any provision of this Agreement is determined by a court to be invalid, the court shall reform the provision in a manner that is both

consistent with the terms of this Agreement taken as a whole and legally valid. The remainder of this Agreement shall not be affected thereby.

24. **Successors and Permitted Assigns**. All covenants and agreements contained in this Agreement by or on behalf of any of the Parties shall bind and inure to the benefit of their respective successors and permitted assigns under Article 16, whether so expressed or not.

IN WITNESS WHEREOF, each Party has executed this Agreement on the date set forth below, said Agreement to be effective on the Effective Date stated above.

Date: 11/20/09

HYDROGEN ENERGY CALIFORNIA LLC

By: _____

Title: PRESIDENT

Date: _____

By: BUENA VISTA WATER STORAGE DISTRICT

By: _____

Title: Board President

APPROVED AS TO FORM.

McMURTREY, HARTSOCK and WORTH

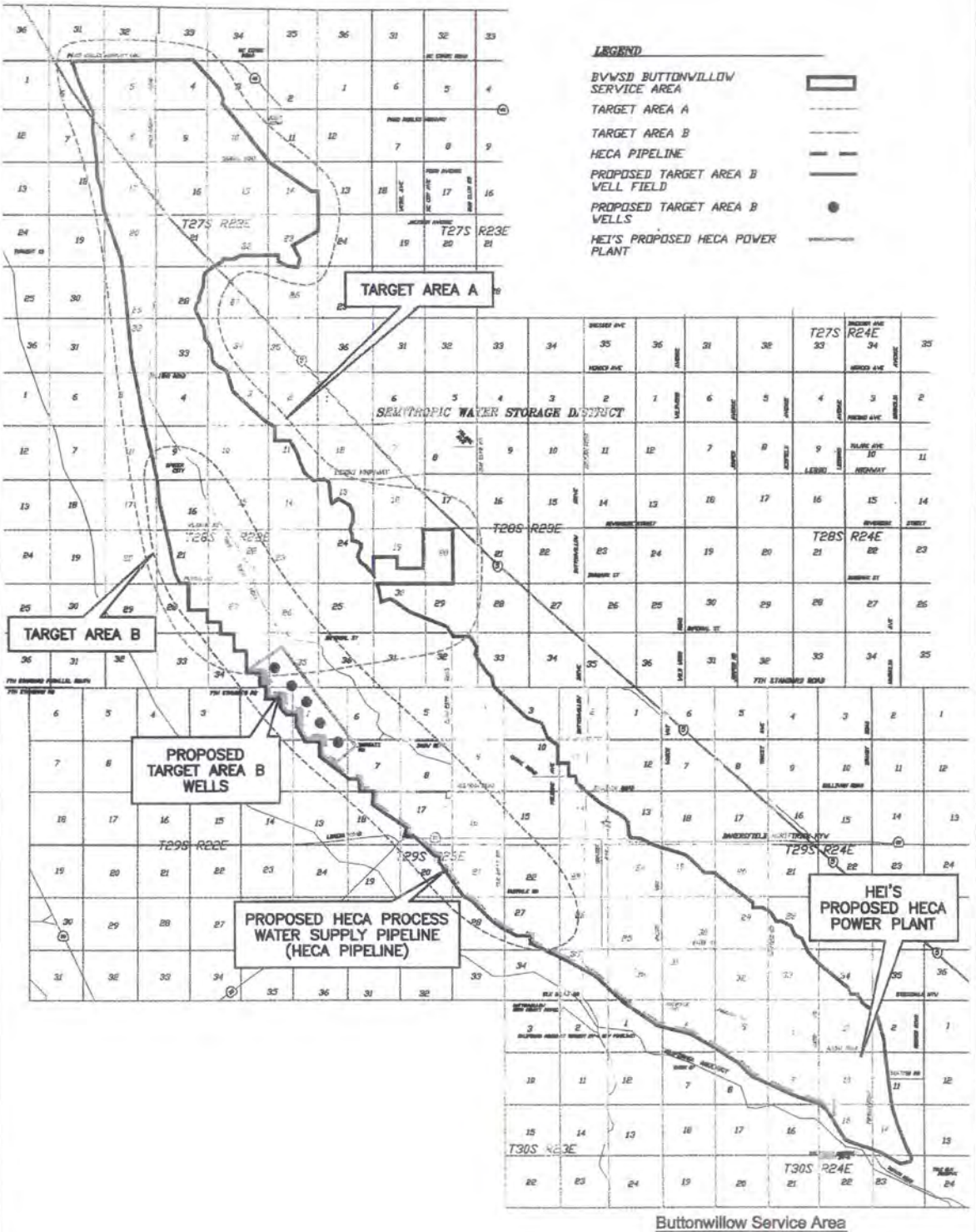
By: _____
ROBERT W. HARTSOCK
Attorneys for Buena Vista Water Storage District

APPROVED
LEGAL
MW

EXHIBIT "A"

FACILTY MAP

Exhibit "A"



Buttonwillow Service Area

NOTE:
BASE MAP PROVIDED BY BUENA VISTA WATER STORAGE DISTRICT.

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

KRIEGER & STEWART INCORPORATED
3602 University Ave. · Riverside, CA. 92501 · 951-684-6900

BUENA VISTA WATER STORAGE DISTRICT
BUENA VISTA WATER MANAGEMENT PROGRAM
BRACKISH GROUNDWATER REMEDIATION PROJECT

SCALE: 1"=10,000' DATE: 09/25/09 DRAWN BY: JGS CHECKED BY: VEM W.O.: 578-8.2

FIGURE 10 OF 10

578-8F10.DWG

EXHIBIT "B"

BRACKISH GROUNDWATER REMEDIATION PROJECT DESCRIPTION

Component 4: Brackish Groundwater Remediation Project (BGRP)

Certain areas in the northern portion of the Buttonwillow Service Area overlie aquifers characterized by TDS concentrations exceeding the California Department of Public Health (CDPH) secondary maximum contaminant level (MCL) of 1,000 mg/l. TDS concentrations in these northern areas (generally north of 7th Standard Road) typically range from 1,000 to 4,000 mg/l. The southern portion of the Buttonwillow Service Area has lower TDS concentrations ranging from 300 to 1,000 mg/l, as shown in Figure 6. A shallow perched groundwater zone within the northern area contains TDS concentrations typically ranging from 1,000 to 5,000 mg/l, as shown in Figure 7.

The BGRP is designed to remediate brackish groundwater conditions and shallow, perched groundwater conditions within the Buttonwillow Service Area by recovering brackish groundwater and shallow brackish perched groundwater from strategic locations within the aquifer. As described in II(B)(4) herein, shallow perched groundwater conditions and elevated TDS concentrations have adversely impacted plant growth and crop yields in affected areas of the District.

While some crops are more salt-tolerant than others, all crops suffer and yields decline as groundwater TDS concentrations increase. Growers on lands overlying higher-TDS groundwater have fewer choices of viable crops, and achieve lower yields on those crops, than growers on lands overlying lower-TDS groundwater (Crewdson 2009).

The BGRP consists of constructing and operating strategically-located shallow- and medium-depth brackish groundwater recovery wells and collection and conveyance pipelines that will recover and transport brackish groundwater to participants at receiving facilities located either inside or outside District boundaries.

The District has identified two types of brackish groundwater problems and has designated two corresponding target areas for remediation, termed Target Area A and Target Area B, which are depicted in Figure 10 and are described in additional detail below. The BGRP includes extraction of up to 12,000 AF/yr of brackish groundwater from Target Area A, Target Area B, or a combination of these areas.

Placing the brackish water back into the ground nearby would not result in a benefit. The initial extent of the BGRP depends upon the rate and volume of brackish water that the District can continually dispose of by delivery to one or more brackish water users. Therefore, implementation of the BGRP in Target Area

A and in Target Area B will each include extraction of brackish groundwater, which the District will transport and deliver to one or more brackish water users who are ready, willing, and able to participate in the BGRP. Potential environmental impacts associated with the construction and operation of participating users' receiving facilities are beyond the scope of this document and will be addressed by the user receiving such brackish water, or by the lead agency for the user's CEQA process.

Potential BGRP participating users have not yet been identified, with the exception of Hydrogen Energy International LLC (HEI), which is contemplating participating in the BGRP as a user to receive brackish groundwater at a future power plant. Potential facilities that would be constructed and operated to serve HEI, should it become a participating user, are described in additional detail in *Target Area B* below.

Target Area A

Target Area A is located throughout the northern portion of the Buttonwillow Service Area generally north of 7th Standard Road, as depicted in Figure 10. A shallow brackish perched groundwater aquifer exists throughout most of this area, typically standing at depths of two to ten feet below ground surface (see Figure 5) and having TDS concentrations ranging from 1,000 to 5,000 mg/l (see Figure 7).

The intent of the BGRP in Target Area A is to improve these lands for agricultural use by physically lowering the level of the shallow brackish perched groundwater aquifer by aquifer dewatering. An additional benefit of this is the possible improvement in groundwater quality in Target Area A.

Implementation of the BGRP in Target Area A includes construction and operation of up to 40 very shallow, low-flow brackish groundwater extraction wells (Target Area A wells) in a grid-array orientation designed to uniformly lower the widespread shallow, perched groundwater. The District has previously experimented with drainage systems to lower the perched groundwater, and with positive results; therefore, the District is aware that a physical lowering of the shallow perched groundwater level is sufficient for improving the growing conditions in the type of problem area typical of Target Area A (Crewdson 2009). Proposed Target Area A wells will additionally include associated transmission and conveyance pipelines, appurtenances, and access features. At this time, potential participants in the BGRP for Target Area A have not yet been identified.

Target Area B

Target Area B is located in lands within the Buttonwillow Service Area that overlie deeper aquifer zones that contain brackish groundwater that occurs in the general depth interval from 200 to 700 feet or more below ground surface. Depth to groundwater in Target Area B, the location of which is depicted in Figure 10, ranges from approximately 20 to 80 feet below ground surface (Crewdson 2009).

Groundwater TDS concentrations in this area broadly range from 700 to 4,000 mg/l, but localized areas and zones containing elevated TDS concentrations in the range of 2,000 to 4,000 mg/l occur along the western District boundary. Target Area B lands overlie part of the larger aquifer system which receives lateral (horizontal) recharge waters from two different sources. Lower-TDS water recharges the aquifer from the east, higher-TDS water recharges the aquifer from the west, and different areas within the Buttonwillow Service Area overlie different types of water (Crewdson 2009).

After decades of irrigation pumping, the District has determined that it is not possible to remove the higher-TDS water from the aquifer simply by extraction in Target Area B, because lateral recharge from the west brings in the brackish groundwater faster than it can be removed. Additionally, existing wells within the District are not specifically situated so as to achieve any such deliberate, permanent extraction. Therefore, the brackish groundwater must be extracted from strategic locations to reduce lateral recharge from the west (Crewdson 2009).

To remediate brackish groundwater conditions in Target Area B, the District intends to construct and operate up to ten brackish groundwater extraction wells in Target Area B. The initial phase of the BGRP includes five proposed Target Area B wells that are preliminarily situated in a linear formation along the approximate center of the western boundary of the Buttonwillow Service Area, in Sections 34 and 35, Township 28 South, Range 22 East and Sections 1, 2, and 12, Township 29 South, Range 22 East MDM.

These five wells, as shown in Figure 10, have been preliminarily sited in such a manner to intercept the inflow of brackish groundwater from the west, creating a "salt-shadow" to the east of the wells. The conceptual design includes a northwesterly trending line of five wells (three operational and two redundant), each spaced at intervals of approximately one-quarter mile and drilled to depths of approximately 300 to 400 feet below ground surface. This configuration is intended to result in a zone of blending to the east of these five Target Area B wells in which the lower-TDS water from the east will have a greater impact on the overall TDS concentration within that zone than the higher-TDS water from the west (Crewdson 2009). The final locations, spacing, and depths of said wells will be determined during well field design, installation, and testing.

The initial zone of benefit for Target Area B is projected to be located directly east of the five proposed initial Target Area B wells (preliminary locations of which are shown on Figure 10), and its beneficial impact will grow slowly over time. The rate of increase and ultimate size of the zone of benefit will depend on the long-term extraction rate, aquifer properties, and locations of additional Target Area B wells (Crewdson 2009).

The BGRP in Target Area B includes constructing and operating the following facilities:

- Ten Target Area B wells, five of which are preliminarily located as shown on Figure 10, with the remaining five wells to be constructed as needed to obtain the full capacity of the BGRP;
- Brackish groundwater conveyance pipeline(s), and
- Associated structures, appurtenances, and access features.

The scope of the initial phase of the BGRP will be determined by the rate and volume of brackish water that the District can continually dispose of by delivery to an initial, long-term consumer of the brackish water. The ultimate number (up to ten) of Target Area B wells will depend upon the following three factors:

1. The locations, depths, and flow rates that would create the greatest benefit to the aquifer TDS concentrations;

2. The volume of recovered water that the District can dispose of by conveyance to brackish water consumers; and

3. The cost of constructing and operating BGRP facilities in Target Area B.

The District estimates that three to eight wells will be sufficient for optimizing the BGRP in Target Area B. The locations and extent of the brackish groundwater conveyance pipeline(s) depend upon the locations of the receiving facilities.

One potential participant in the BGRP for Target Area B is Hydrogen Energy International LLC (HEI), who is considering participating in the BGRP as a brackish water user. If HEI participates, it may receive up to 7,500 AF/yr of brackish groundwater from the District for use as process water at its proposed Hydrogen Energy California power plant facility (HECA power plant), as set forth in its Revised Application for Certification for Hydrogen Energy California, Kern County, California (Volumes I and II), prepared by URS and submitted to the California Energy Commission (CEC) on May 28, 2009. This document is hereinafter referred to as the HECA AFC, and is available to the public on the CEC website at www.energy.ca.gov/sitingcases/hydrogen_energy/ index.html.

The HECA power plant is currently in the planning stages and is preliminarily located in Section 10, Township 30 South, Range 24 East, MDM, in the southerly portion of the Buttonwillow Service Area as shown on Figure 10. The HECA power plant project is subject to separate environmental review and approval by the California Energy Commission (CEC). CEC is lead agency pursuant to CEQA for the HECA power plant project and will prepare and adopt appropriate CEQA-equivalent documents for the HECA power plant project. Therefore, Target Area B wells, pipelines, appurtenances, and access features that would serve the HECA power plant, if HEI participates in the BGRP, would be subject to any mitigation measures required by CEC in addition to those set forth in this EIR. Said Target Area B facilities, once constructed by either HEI, BVWSD, or both, would be owned and operated by BVWSD.

In the event that HEI becomes a participant in the Program, the initial five proposed Target Area B wells will serve the HECA power plant, and a brackish water conveyance pipeline (HECA pipeline) will be included in the BGRP in order to convey brackish groundwater from the Target Area B wells to the HECA power plant. The initial five Target Area B wells and the HECA pipeline are shown on Figure 10 herein.

The HECA pipeline is anticipated to consist of a belowground pipeline, approximately twenty inches in diameter and approximately fifteen miles in length, extending from the initial five proposed Target Area B wells to the HECA power plant. The HECA pipeline would be installed predominately within the District's unpaved service road that is located along the eastern bank of the West Side Canal, and would traverse the following sections:

- Sections 27, 28, and 34, Township 28 South, Range 22 East;
- Sections 1, 2, and 12, Township 29 South, Range 22 East;
- Sections 7, 17, 18, 20, 21, 27, 28, 34, 35, and 36, Township 29 South, Range 23 East;
- Section 1, Township 30 South, Range 23 East; and
- Sections 5, 6, 8, 9, 10, and 15, Township 30 South, Range 24 East.

BGRP facilities described herein, with the exception of the HECA pipeline, will be constructed whether or not HEI becomes a participant in the BGRP. Environmental impacts resulting from implementation of the BGRP will be assessed and mitigated as set forth herein. Environmental impacts resulting from construction and operation of facilities intended to serve the HECA power plant will be mitigated as set forth herein and will also be subject to CEC's environmental review process and any additional mitigation measures required by CEC, as lead agency pursuant to CEQA for the HECA power plant.

Annual brackish groundwater recovery anticipated by the BGRP could be up to 12,000 AF/yr, of which approximately 7,500 AF/yr may be conveyed to the HECA power plant in the event that HEI participates in the BGRP. Remaining quantities may be extracted from either Target Area A or Target Area B using wells constructed pursuant to the BGRP, existing District wells, existing landowner wells, tile drainage systems through individual volunteer landowner agreements, or other methods designed to extract, convey, and dispose of brackish groundwater that may be developed during the environmental review and planning process. The District will manage resultant supplies through programs with in-District entities, out-of-District entities, or a combination of these.

February 14, 2012

Hydrogen Energy California LLC
Attn: Mark Lerdal
30 Monument Square, Suite 235
Concord, MA 01742

RE: Water Service to Hydrogen Energy California
Taft Area

Dear Mr. Lerdal:

This letter will confirm that West Kern Water District is in compliance with all Federal and State Drinking Water Standards and has the capacity to provide water service during the construction and operation to your proposed development. Standard District connection fees will be required prior to service and owner may be required to provide transmission/distribution improvements should District facilities prove inadequate.

If you should have any questions or require additional information please do not hesitate to contact me.

Sincerely,

J.D. Bramlet
Director of Operations

JDB:war

Appendix N-2

Groundwater Modeling Documentation

APPENDIX O2
GROUNDWATER MODEL DOCUMENTATION

HECA Project Site

Buena Vista Water Storage District

Kern County, California

Prepared for

Hydrogen Energy International LLC
One World Trade Center
Suite 1600
Long Beach, CA 90831

April 30, 2009

URS

George Muehleck, P.G.
Jim Zhang, Ph.D., P.E.
Liz Elliott, P.G.

TABLE OF CONTENTS

TABLE OF CONTENTS

List of Tables

List of Figures

Hydrogen Energy International LLC (HEI or Applicant) is jointly owned by BP Alternative Energy North America Inc. and Rio Tinto Hydrogen Energy LLC. HEI is proposing to build an Integrated Gasification Combined-Cycle power generating facility called Hydrogen Energy California (HECA or the Project) in Kern County, California. The Project will produce low-carbon baseload electricity by capturing carbon dioxide (CO_2) and transporting it for CO_2 enhanced oil recovery (EOR) and sequestration (storage)[1].

The Project will use impaired-quality groundwater provided by the Buena Vista Water Storage District (BVWSD) as the source of process water. A three-dimensional groundwater flow model was constructed to evaluate the effects of pumping groundwater for the proposed Project from a proposed well field within the BVWSD Buttonwillow Service Area in Kern County, California (Figure 1). The groundwater flow model was developed to evaluate the potential net impacts of project-specific pumping on the underlying and adjacent aquifer system. This aquifer system has been locally termed as the Buttonwillow Subbasin (KCWA 1991), which is located within the regional Kern County Subbasin. This model is a "superposition model," in which all non–project-specific hydrologic features were excluded, based on the application of the "principle of superposition" (Reilly, et al. 1987). MODFLOW, a groundwater modeling program developed by the U.S. Geological Survey (USGS), was used for model development and simulations.

The primary objective of this superposition model is to evaluate the net effects of project-specific pumping by:

1. Simulating net changes of groundwater flow conditions and aquifer response to project-specific pumping;

2. Providing sufficiently fine grid spacing to simulate groundwater pumping via extraction wells; and

3. Evaluating the sensitivity of groundwater flow in the aquifer to aquifer property assumptions.

[1] This carbon dioxide will be compressed and transported via pipeline to the custody transfer point at the adjacent Elk Hills Field, where it will be injected. The CO_2 EOR process involves the injection and reinjection of carbon dioxide to reduce the viscosity and enhance other properties of the trapped oil, thus allowing it to flow through the reservoir and improve extraction. During the process, the injected carbon dioxide becomes sequestered in a secure geologic formation. This process is referred to herein as CO_2 EOR and Sequestration.

This section discusses the Project's process water supply and the hydrologic setting of the proposed well field.

2.1 PROPOSED WATER SUPPLY

BVWSD will supply the proposed project with impaired-quality groundwater (average total dissolved solids [TDS] approximately equal to 2,000 milligrams per liter [mg/L]) for hydrogen generation, power-plant cooling, gasification, and other industrial processes. The groundwater will be supplied by a proposed well field to be constructed and operated by BVWSD. The proposed well field will intercept groundwater (i.e., first water [30 feet below ground surface (bgs)] to 300+ feet bgs) on the western side of the BVWSD.

As shown on Figure 1, the proposed Project well field is a northwest-oriented rectangular area located on the western side of the BVWSD Buttonwillow Service Area near Seventh Standard Road and the California Aqueduct. It includes portions of Sections 34 and 35 of Township 28S, Range 22E, and portions of Sections 1, 2, and 12 of Township 29S, Range 22E. The water pumped from the well field will be piped approximately 15 miles southeast to the project site.

BVWSD will provide the Project with up to approximately 7,500 acre-feet of groundwater each year. Although the water supply system is anticipated to provide environmental benefits and will not include use of fresh water, the California Energy Commission (CEC) requires evaluation of the potential environmental impacts associated with development of this water supply. Therefore, this groundwater flow model was constructed to evaluate the net effects of project groundwater pumping, and to support the analysis presented in the Project's Revised Application for Certification (AFC).

2.2 HYDROGEOLOGIC SETTING

The proposed well field is located in the Kern County Subbasin (DWR subbasin no. 5-22.14) of the San Joaquin Valley groundwater basin. The southern San Joaquin Valley, of which the Kern County Subbasin is a part, has been further divided into additional hydrogeologic subbasins that are bounded by distinct structural highs due to folding or faulting (KCWA 1991). These subbasins may contain isolated or partially isolated hydrogeologic systems. BVWSD's Buttonwillow Service Area is located in what is locally known as the Buttonwillow Subbasin, which is separated from the Jerry Slough Subbasin to the west, the Tulare Subbasin to the north, and by structural highs to the west.

Although there are many agricultural pumping wells within the region, not much geologic or hydrogeologic data have been collected in the vicinity of the proposed well field. As such, regional and local geologic and hydrogeologic reports from other studies in Kern County, as well as information provided by the BVWSD and their hydrogeologic consultant, Sierra Scientific Services, were used as a basis to develop this groundwater flow model. The region is underlain by unconsolidated sediments originating from an alluvial depositional setting with discontinuous lacustrine clay lenses. Alluvial deposits, by nature, are heterogeneous assemblages of both coarse- and fine-grained material. Based on available geophysical logs, the stratigraphy is

dominated by interbedded sands and gravels with minor vertically and laterally discontinuous silt and clay layers.

The aquifer system is both unconfined, and most likely, semi-confined in places. Based on a 2008 depth to water map provided by BVWSD, depth to groundwater in the vicinity of the proposed well field is approximately 30 feet bgs.

This section briefly describes model computer codes used to build the model.

3.1 GROUNDWATER MODELING SYSTEM INTERFACE

The computer software program chosen as the graphical interface for the modeling effort was the U.S. Department of Defense Groundwater Modeling System (GMS), version 6.0. GMS is a comprehensive graphical user interface (GUI) for performing groundwater simulations. GMS provides a graphical preprocessor and postprocessor interface to several groundwater modeling codes: MODFLOW, MODPATH, MT3DMS, RT3D, FEMWATER, SEEP2D, NUFT, and UTCHEM. The GMS interface was developed by the Environmental Modeling Research Laboratory of Brigham Young University in partnership with the U.S. Army Engineering Waterways Experiment Station. GMS was used to develop a simplified site conceptual hydrogeological model, and to convert it into a groundwater flow model.

3.2 MODFLOW GROUNDWATER FLOW MODEL

The computer code selected to model groundwater conditions was MODFLOW. MODFLOW is a three-dimensional, cell-centered, finite difference, saturated flow model developed by the USGS (McDonald and Harbaugh 1988). GMS provides an interface to the updated version, MODFLOW 2000 (Hill et al. 2000). Based on the information available, the uncertainty associated with site information, and the modeling objectives of evaluating the potential net effects of project-specific pumping, MODFLOW was considered an appropriate groundwater flow code.

3.3 MODPATH PARTICLE TRACKING MODEL

Particle tracking simulations provide a convenient means of visualizing groundwater flow paths. This is particularly useful for evaluating capture zones around a pumping well. MODPATH was selected as the particle tracking program for this effort. MODPATH is a three-dimensional particle tracking program developed by the USGS (Pollock 1994) that enables reverse and forward tracking from sinks (wells) and sources, respectively. GMS has updated the interface for MODPATH to a seamless module that couples with MODFLOW 2000. MODFLOW results are used as input for MODPATH runs.

The data used to develop the groundwater flow model was primarily provided by BVWSD, on behalf of Sierra Scientific Services, during meetings and in the form of e-mails, published reports (Sierra Scientific Services 2003; Sierra Scientific Services 2004; Sierra Scientific Services 2007a; and Sierra Scientific Services 2007b), and reports in preparation (Sierra Scientific Services 2009a and Sierra Scientific Services 2009b).

4.1 MODEL DOMAIN AND GRID

To eliminate the boundary effects on the simulated groundwater conditions, a model domain of 100 by 100 miles was specified, with the well field at the center of the model domain. This exaggerated domain size was created to ensure that drawdown simulated by well-field pumping was only affected by aquifer properties (e.g., hydraulic conductivity and storativity) and not by water flowing into or out of the boundary.

Because the proposed wells are arranged linearly in a northwest-trending direction, the model domain is rotated 49 degrees from north to west so that the rows and columns of the discretized grid are perpendicular and parallel to the arranged well line. This oriented model domain allows the proposed wells to be in the same column so that the simulation results are more easily processed.

The model domain has three layers extending from ground surface to 2,000 feet bgs. The model layers extend from 0 (ground surface) to 300 feet bgs (shallow zone), 300 to 600 feet bgs (deep zone), and 600 to 2,000 feet bgs (deeper zone).

The model grid contains 243,789 cells, spatially discretized into 247 columns and 329 rows in the plan view, as shown in Figure 2. The model grid is refined in the vicinity of the pumping wells. Lateral cell size of 20 by 20 feet was specified in the vicinity of the pumping wells, and the grid size increases towards the model domain boundaries. The maximum cell size, at the model boundary, is 2,500 by 2,500 feet.

4.2 HYDRAULIC CONDUCTIVITY

The lithology underlying the proposed well field area is characterized by heterogeneous unconsolidated deposits characteristic of an alluvial depositional system. Geophysical logs within and in the vicinity of the well field area indicate that the aquifer system is dominated by coarse-grained sediments with discontinuous interbedded fine-grained sediments. The 3-layer computer model is a simplification of the many-layered aquifer system in the well field area. As such, aquifer properties of the three model layers are assigned so that they will correctly simulate the behavior of the multi-layered aquifer system. Our basis for model parameterization is to make the Transmissivity (T) and storativity (S) values of the three model layers equivalent to the aggregate average T and S values of the same respective thicknesses of the actual aquifer system.

As demonstrated by Sierra Scientific Services, 2004 (p. 53), if the sand fraction (Fsd) in a total thickness interval (H) of the aquifer is at least 20 percent, and if the sand intervals are at least 100 times more permeable than the interbedded silty or clayey strata, then the T of the aquifer

equals T = Ksd*H*Fsd, where K is hydraulic conductivity and Ksd is the K of the sand units, without knowing the K values of the interbedded silts or clays. This condition may be implemented in the computer model by substituting a value of effective conductivity (K*) which is applicable to the entire interval thickness, H, where K* = Ksd*Fsd. This implementation will then yield the correct value of T for aquifer modeling. The same mathematical equivalence is applied to derive a value of equivalent storativity, (S*).

Based on a review of geophysical logs, the range of sand in the aquifer is approximately 60 to 90 percent. It is assumed that the horizontal K value of the sand is 57 feet per day (ft/day); horizontal K assumed to be uniform throughout the model domain. In the baseline simulation it was assumed that 75 percent of the aquifer thickness contained sand at a horizontal K value of 57 ft/day.

In alluvial aquifer systems of this type, vertical hydraulic conductivity is less than the horizontal hydraulic conductivity. The vertical anisotropic ratio, defined as the ratio of horizontal hydraulic conductivity to the vertical hydraulic conductivity, ranges from approximately 10 to 50 ft/day. With the assumption that horizontal conductivity is 57 ft/day, vertical conductivity is estimated to range from 1.1 ft/day to 5.7 ft/day. A mid-range anisotropic ratio value of 30 is used for the baseline simulation, which corresponds to a vertical conductivity value of 1.9 ft/day. The anisotropic ratio is assumed to be uniform throughout the model domain.

4.3 SPECIFIC YIELD AND SPECIFIC STORAGE

Local information provided by the BVWSD and their hydrogeologic consultant, Sierra Scientific Services, was reviewed to develop estimates for specific storage and specific yield. The specific yield of the local aquifer system was estimated to range from approximately 0.15 to 0.20. A mid-range value of 0.18 is used in the model for the baseline simulation.

The specific storage of the local aquifer system was estimated to range from approximately 0.00004 to 0.00007 (1/ft). A mid-range value of 0.0000551/ft is used in model for the baseline simulation.

4.4 PUMPING

The model simulates project-specific pumping from a proposed well field. The well field is assumed to include five wells arranged linearly in a northwest-trending direction and spaced approximately 0.25 mile apart (Figure 3). The model simulates a well field pumping rate of 7,500 acre-feet per year (afy), or 4,650 gallons per minute (gpm), which represents the upper-limit water demand for the proposed Project. Three of the five wells would be pumping at once, while the other two wells would be redundant. Therefore, the total pumping rate is divided evenly among the three pumping wells, resulting in a pumping rate of 1,550 gpm per pumping well. To be conservative, the model assumes that the three pumping wells are adjacent to one another in the center of the well field. The wells are placed in the uppermost model layer to simulate shallow pumping. The pumping rate is steady and continuous throughout the 25-year model simulation.

To evaluate the net effect of project-specific pumping, all other existing pumping wells are excluded from the model.

4.5 RECHARGE

From 1962 to 2000, the BVWSD's operations in its 50,000-acre Buttonwillow Service Area have resulted in a positive groundwater balance of approximately 46,000 afy. BVWSD projects that a positive groundwater balance of approximately 25,000 afy will be maintained in the future (BVWSD – personal communications January through May 2009). Therefore, even though the southern San Joaquin Valley has been classified by the DWR as an overdrafted groundwater basin, the BVWSD has historically been able to achieve a positive groundwater balance. Water levels in the BVWSD Buttonwillow Service Area have and are expected to continue to rise in response to BVWSD's recharge/replenishment operations.

Recharge within BVWSD is primarily attributable to infiltration from over-irrigation, as well as seepage loss from the BVWSD irrigation ditch and canal system. The model simulates recharge of 7,500 afy from BVWSD positive water balance operations that can be attributed to offset Project-specific pumping. The infiltration rate in the vicinity of the well field is approximately 0.4 ft/year. Therefore, recharge is applied to the model within an area around the pumping wells that is approximately 29.3 square miles (i.e., 18,750 acres), in order to yield a total recharge volume of 7,500 afy. According to the BVWSD, seepage loss from the irrigation ditch and canal system occurs for about two-and-a-half months during the irrigations months. Therefore, recharge is simulated 75 days per year.

4.6 INITIAL AND BOUNDARY CONDITIONS

Because the primary model objective is to evaluate the aquifer response to Project-specific pumping, the initial head distribution was specified as a constant head distribution. Based on data collected in 2008 and provided by BVWSD, average depth to water in the vicinity of the proposed well field is approximately 30 feet bgs; therefore, initial heads were specified as 30 feet bgs throughout the model domain.

Because the model domain (100 by 100 miles) far exceeds the area of influence of project pumping, the model boundary will not have an effect on groundwater conditions. Consequently, boundary conditions do not have an effect on the model so long as they are consistent with the initial condition. Therefore, a general head boundary condition with a constant reference head of 30 feet bgs was specified along the edges of the model domain for all three model layers.

4.7 TIMING OF MODEL STRESSES

The model simulated transient flow conditions for 25 years. Stress periods were set to 75 days and 290 days to allow simulation of annual recharge events. Well pumping is constant throughout the simulation.

The model was used to simulate groundwater pumping and response in one base case and eight sensitivity runs. The total pumping volume, number of pumping wells, pumping well locations and depth, recharge rate and area, boundary conditions, initial head, model timing, and stress period setup remained the same for all simulation runs. Sensitivity runs were conducted to test the effect of sand percentage (equivalent horizontal K values), vertical anisotropic ratio, specific yield, and specific storage on resulting simulated drawdown. Model parameters are summarized in Table 1, and simulation results are summarized in Table 2.

5.1 BASE CASE

Mid-range aquifer parameters were simulated under the base case. Based on an assumed total sediment thickness of 75 percent sand, the horizontal hydraulic conductivity was estimated to be 43 ft/day. The anisotropic ratio was defined as 30, resulting in a vertical hydraulic conductivity value of 1.9 ft/day. Specific yield and specific storage were defined as 0.18 and 5.5×10^{-5} 1/ft, respectively. In addition to simulating the net changes of groundwater flow conditions and aquifer response to project-specific pumping, particle tracking using MODPATH (Pollock 1994), a particle-tracking post-processing model for MODFLOW, was conducted to estimate the groundwater movement towards the well field induced by project pumping. Simulation results are presented in a hydrograph for hypothetical observation points (i.e., wells) at various distances from the pumping wells (Figure 4); a hydrograph for hypothetical observation points 0.5 mile to the east, west, north, and south of the pumping wells (Figure 5); contour maps (Figures 6, 7, and 8); groundwater table profiles (Figures 9 and 10); and a groundwater pathline map (Figure 11).

Simulation results show a decline in water level on the order of about 30 feet near the pumping wells during the first 3 years of pumping. Approximately 90 percent of the drawdown occurs during the first 3 years of pumping. After 3 years of pumping, the water-level decline stabilizes until maximum drawdown is reached after approximately 9 years of pumping. The water level remains relatively stable throughout the remainder of the 25-year simulation. The water level response is cyclic in nature due to the application of recharge for 75 days out of every year. Water levels vary between approximately 1 and 2 feet on an annual basis throughout the duration of the simulation.

Results show an asymmetric cone of depression due to the asymmetric application of recharge. The cone of depression extends further west of the pumping wells than it does to the east, north, or south, because the pumping wells are located near the western boundary of the recharge area, which is limited to BVWSD's Buttonwillow Service Area. After 25 years of pumping, the cone of depression extends approximately 1.4 miles from the pumping wells to the north, south, and east of the pumping wells, and approximately 2.5 miles to the west of the pumping wells. Slightly more drawdown is simulated perpendicular (to the east and west) than parallel (to the north and south) to the pumping wells due to the linear alignment of the three pumping wells.

Maximum simulated drawdown of approximately 37 feet occurs at the central pumping well. Drawdown decreases radially outward from the pumping wells such that maximum drawdown 200 feet east, 0.5 mile east, and 1 mile east of the pumping wells is 18.5, 5.2, and 2.0 feet,

respectively. Drawdown is slightly less to the north and south of the pumping wells at these same distances. Beyond 2 miles, drawdown is almost non-existent. Maximum drawdown 0.5 mile from the pumping wells was simulated to be at 5.2 feet to the east, 5.6 feet to the west, 3.9 feet to the north, and 3.9 feet to the south. Groundwater contour maps show that the cone of depression extends from the shallow zone (model layer 1), where the pumping wells are located, to the base of the model (model layer 3).

The hydrograph shows that a slight rise in water level occurs 2 miles north of the pumping wells due to the influence of recharge and lack of pumping well influence. Groundwater table profiles show that water level rises at a distance beyond the influence of the pumping wells to the north, south, and east of the pumping wells due to recharge.

Particle tracking results show that the maximum net movement of the groundwater induced by project pumping is approximately 0.8 mile towards the well field after 25 years of project pumping. Note that these derived groundwater pathlines exclude the effect of the natural groundwater gradient.

5.2 SENSITIVITY SIMULATIONS

Sensitivity simulations were conducted to test the sensitivity of the model results with respect to aquifer parameters for sand percentage, anisotropic ratio, specific yield, and storativity. Only one parameter was modified from the base case in each sensitivity run. Resulting hydrographs at an observation point located at the central pumping well, 200 feet east of the pumping wells, and 0.5 mile east of the pumping wells are presented on Figures 12, 13, and 14, respectively.

5.2.1 Sand Percentage

The model was used to simulate total sediment thickness at 60 and 90 percent sand, which corresponds to equivalent horizontal K values of 34 ft/day and 51 ft/day, respectively.

The drawdown response is similar to the base case in that the water level drop begins to flatten out after approximately 3 years of pumping. As in the base case, a cyclic water level response occurs due to the intermittent annual application of recharge. Maximum drawdown, which occurs at the central pumping well, is 47 feet with 60 percent sand, and 30.5 feet with 90 percent sand. This can be compared with the maximum base case drawdown of 37 feet, as summarized above.

As expected with a lower sand percentage (smaller equivalent horizontal K value), the cone of depression is deeper, yet aerially smaller, than with a higher sand percentage. The difference in drawdown between the lower-end and upper-end sand percentage simulations decreases with distance from the pumping wells. For example, at a distance of 1 mile from the pumping wells, drawdown is greater with a lower sand percentage (i.e., 2.4 feet of drawdown for 60 percent sand versus 1.7 feet of drawdown for 90 percent sand). At a distance of 0.5 mile from the pumping wells, drawdown would be 6.5 feet at 60 percent sand versus 4.4 feet of drawdown for 90 percent sand.

Overall, model results show that drawdown is sensitive to sand percentage.

5.2.2 Anisotropic Ratio

Anisotropic ratios of 10 and 50 were simulated, which correspond to vertical K values of 5.7 ft/day and 1.1 ft/day, respectively.

The behavior of the water level response is similar to the base case. Maximum drawdown at the central pumping well is approximately 32 feet with an anisotropic ratio of 10 and approximately 39 feet with an anisotropic ratio of 50. These results bracket the maximum drawdown in the base case (37 feet).

As the anisotropic ratio increases (the vertical hydraulic conductivity decreases), there is greater drawdown because less water flows from the deeper zones to the shallow zone of the model. For example, at a distance of one-half mile from the pumping wells, the model simulates maximum drawdown of 3.6 feet with an anisotropic ratio of 10, and 6.2 feet with an anisotropic ratio of 50. The cone of depression is larger as the anisotropic ratio increases, but the effect of variable anisotropy becomes increasingly muted at distance from the pumping wells.

Overall, model results show that drawdown is sensitive to the anisotropic ratio.

5.2.3 Specific Yield

A specific yield of 0.15 and 0.20 was simulated.

As with the previous sensitivity simulations, the behavior of the water level response is similar to the base case. The magnitude of the drawdown and the aerial extent of the cone of depression is very similar to the base case. The only difference from the base case is the timing at which the maximum drawdown occurs. When specific yield is lower, maximum drawdown is achieved quicker. As specific yield increases, the time at which maximum drawdown occurs increases because more water is released from storage.

Model results show that drawdown is insensitive to the change in specific yield. This is because the pumped groundwater is mainly from water transmission, due to the high K value, not from the storage change of the aquifer.

5.2.4 Specific Storage

Specific storage values of 4×10^{-5} 1/ft and 7×10^{-5} 1/ft were simulated. Results are very similar to both the base case and specific yield sensitivity simulations. Model results show that drawdown is relatively insensitive to the change in specific storage. This is also because the pumped groundwater is mainly from water transmission, not from the storage change of the aquifer.

Simulation results show that the net effect of project-specific pumping is a cone of depression that extends approximately 1.4 miles to the north, south, and east of the well field and approximately 2.5 miles to the west of the well field. Beyond those distances, drawdown is almost nonexistent, and to the north, south, and east, water levels rise slightly due to BVWSD's positive water balance recharge. Maximum drawdown one-half mile from the pumping wells was simulated to be 5.2 feet to the east, 5.6 feet to the west, 3.9 feet to the north, and 3.9 feet to the south. Accordingly, wells within 0.5 mile of the pumping wells exhibited greater drawdowns, and wells further than 0.5 mile of the pumping wells exhibited lower drawdowns until distances of approximately 1.4 miles to the north, south, and east and 2.5 miles to the west were reached, at which point drawdown would be almost nonexistent. In the base case, using mid-range values of sand percentage and anisotropic ratio, maximum drawdown at the central pumping well is approximately 37 feet, and only approximately 2 feet at a distance of 1 mile from the pumping wells.

Simulation results show that approximately 90 percent of the drawdown occurs during the first 2 to 3 years of pumping. After 2 to 3 years, drawdown gradually continues to increase until maximum drawdown is reached at approximately Year 9. After Year 9, water levels remain relatively stable throughout the remainder of the 25-year simulation. The water level response is cyclic in nature due to the application of recharge for 75 days out of every year. Water levels vary between approximately 1 and 2 feet on an annual basis throughout the duration of the simulation.

Simulation results show that the model is insensitive to the specific yield and specific storage of the aquifer, but sensitive to both horizontal and vertical K, as defined by the sand percentage and anisotropic ratio, respectively.

Particle tracking results show that the net movement of groundwater induced by Project pumping is approximately 0.8 mile towards the well field.

The model was developed to evaluate the potential impacts of pumping on water levels within the aquifer system under and adjacent to the BVWSD Buttonwillow Service Area (i.e., the Buttonwillow Subbasin). Any groundwater model, including this screening-type model, is a simplification of the natural environment and therefore has recognized limitations.

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TABLES

Model Parameter	Model Simulation								
	Base Case	Sensitivity Simulation							
		Sand %		Anisotropy		Specific Yield		Specific Storage	
		Lower End	Upper End	Lower End	Upper End	Lower End	Upper End	Lower End	Upper End
Pumping									
Total Rate (AFY)	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Number of Pumping Wells	3	3	3	3	3	3	3	3	3
Rate per Well (AFY)	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Schedule	constant	constant	constant	constant	constant	constant	constant	constant	constant
Duration (years)	25	25	25	25	25	25	25	25	25
Recharge									
Total Rate (AFY)	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Area (acre)	18,750	18,750	18,750	18,750	18,750	18,750	18,750	18,750	18,750
Rate (ft/year)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Schedule (days/year)	75	75	75	75	75	75	75	75	75
Duration (years)	25	25	25	25	25	25	25	25	25
Hydraulic Conductivity (K)									
K sand (ft/day)	57	57	57	57	57	57	57	57	57
Sand percentage (%)	75	60	90	75	75	75	75	75	75
Horizontal K (ft/day)	42.8	34.2	51.3	42.8	42.8	42.8	42.8	42.8	42.8
Anisotropic ratio	30	30	30	10	50	30	30	30	30
Vertical K (ft/day)	1.9	1.9	1.9	5.7	1.1	1.9	1.9	1.9	1.9
Storage									
Specific Yield	0.18	0.18	0.18	0.18	0.18	0.15	0.20	0.18	0.18
Specific Storage	5.5E-05	5.5E-05	5.5E-05	5.5E-05	5.5E-05	5.5E-05	5.5E-05	4.0E-05	7.0E-05
Simulation Time (years)	25	25	25	25	25	25	25	25	25

Notes:

1. Sensitivity simulations were conducted for the lower end and upper end of the estimated aquifer parameter range.
2. One parameter was modified in each sensitivity simulation (see highlighted parameter).

Table 1: Model Parameters

Results	Model Simulation								
	Base Case	Sensitivity Simulation							
		Sand %		Anisotropy		Specific Yield		Specific Storage	
		Lower End	Upper End	Lower End	Upper End	Lower End	Upper End	Lower End	Upper End
Pumping Wells									
maximum drawdown (ft)	36.9	47.0	30.5	32.3	39.2	36.9	36.9	36.9	36.9
time to maximum drawdown (yr)	9	13	12	8	7	6	12	8	10
200 feet east of pumping wells									
maximum drawdown (ft)	18.5	23.2	15.4	14.3	20.6	18.5	18.4	18.5	18.5
time to maximum drawdown (yr)	19	14	12	9	10	9	7	15	23
1/2 mile east of pumping wells									
maximum drawdown (ft)	5.2	6.5	4.4	3.6	6.2	5.2	5.2	5.2	5.2
time to maximum drawdown (yr)	7	21	9	6	7	5	10	7	8
1 mile east of pumping wells									
maximum drawdown (ft)	2.0	2.4	1.7	1.5	2.4	2.0	2.0	2.0	2.0
time to maximum drawdown (yr)	8	7	6	7	10	5	12	7	9

Notes:

1. Results are summarized for observation points east of the pumping wells because this is the direction in which maximum drawdown occurs within BVWSD.

Table 2: Summary of Simulation Results

FIGURES

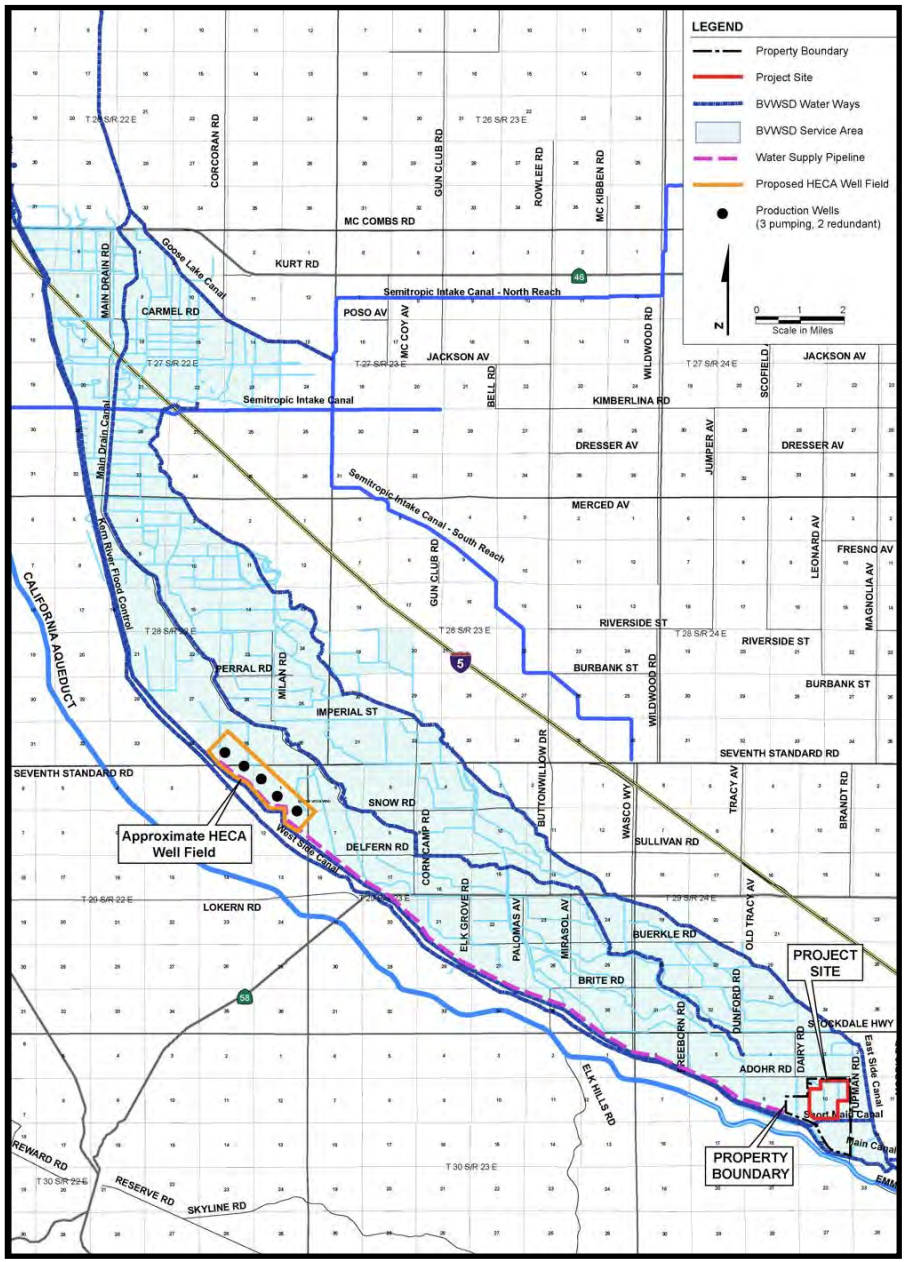


Figure 1: Project Site and Water Supply Well Field Location

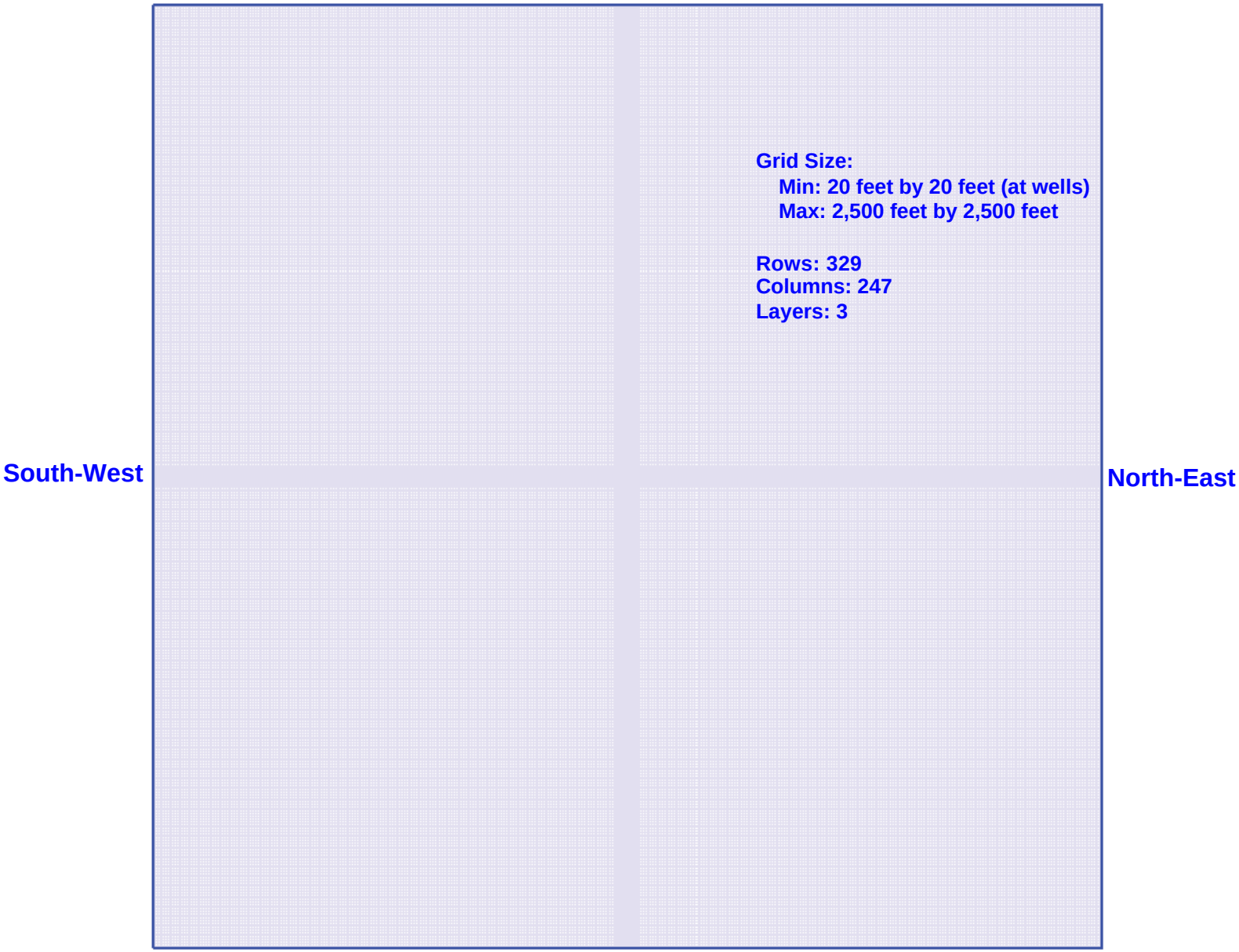


Figure 2: Model Domain and Finite-difference Discretization

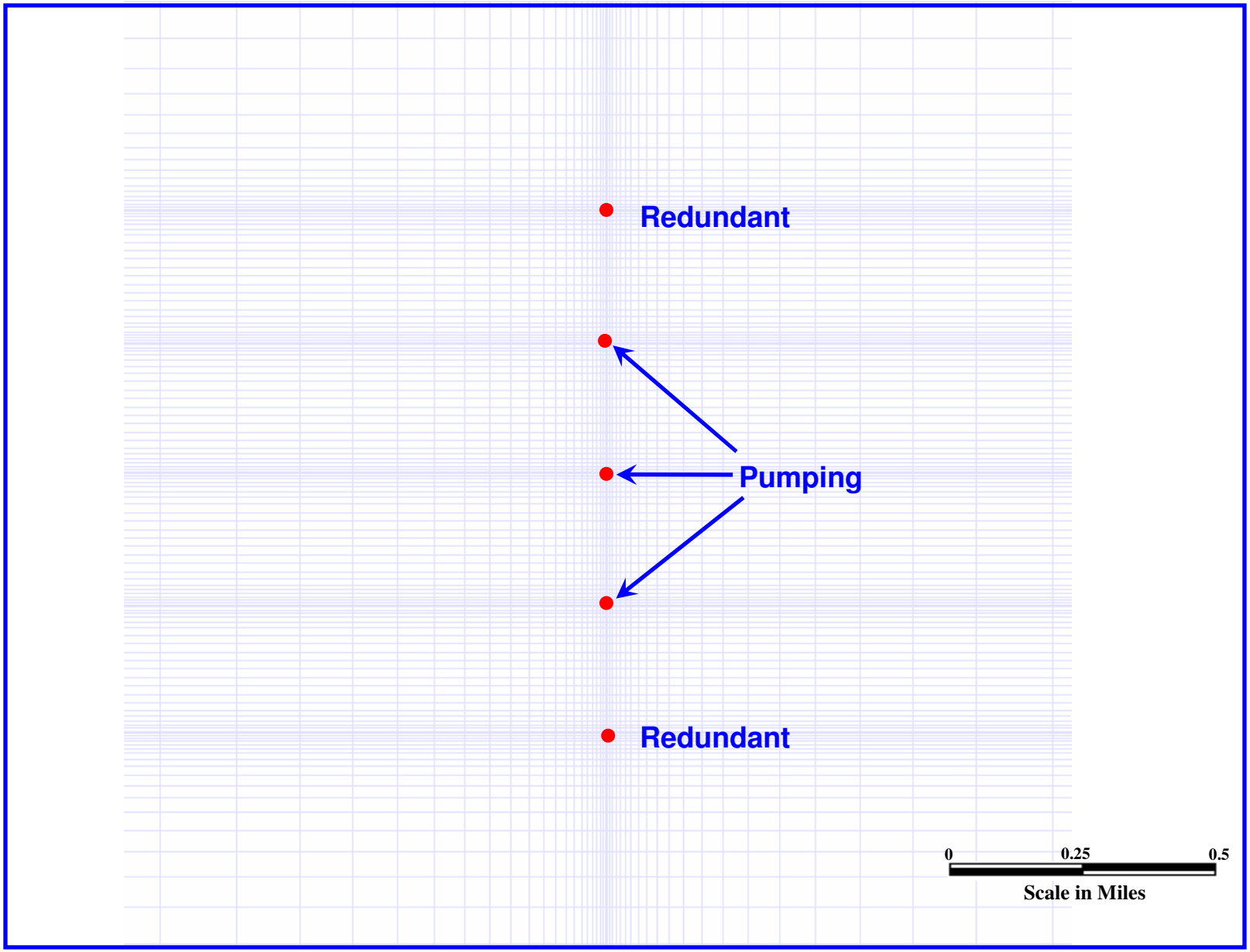


Figure 3: Pumping Well Locations in Model

(Well Spacing = 0.25 mile)

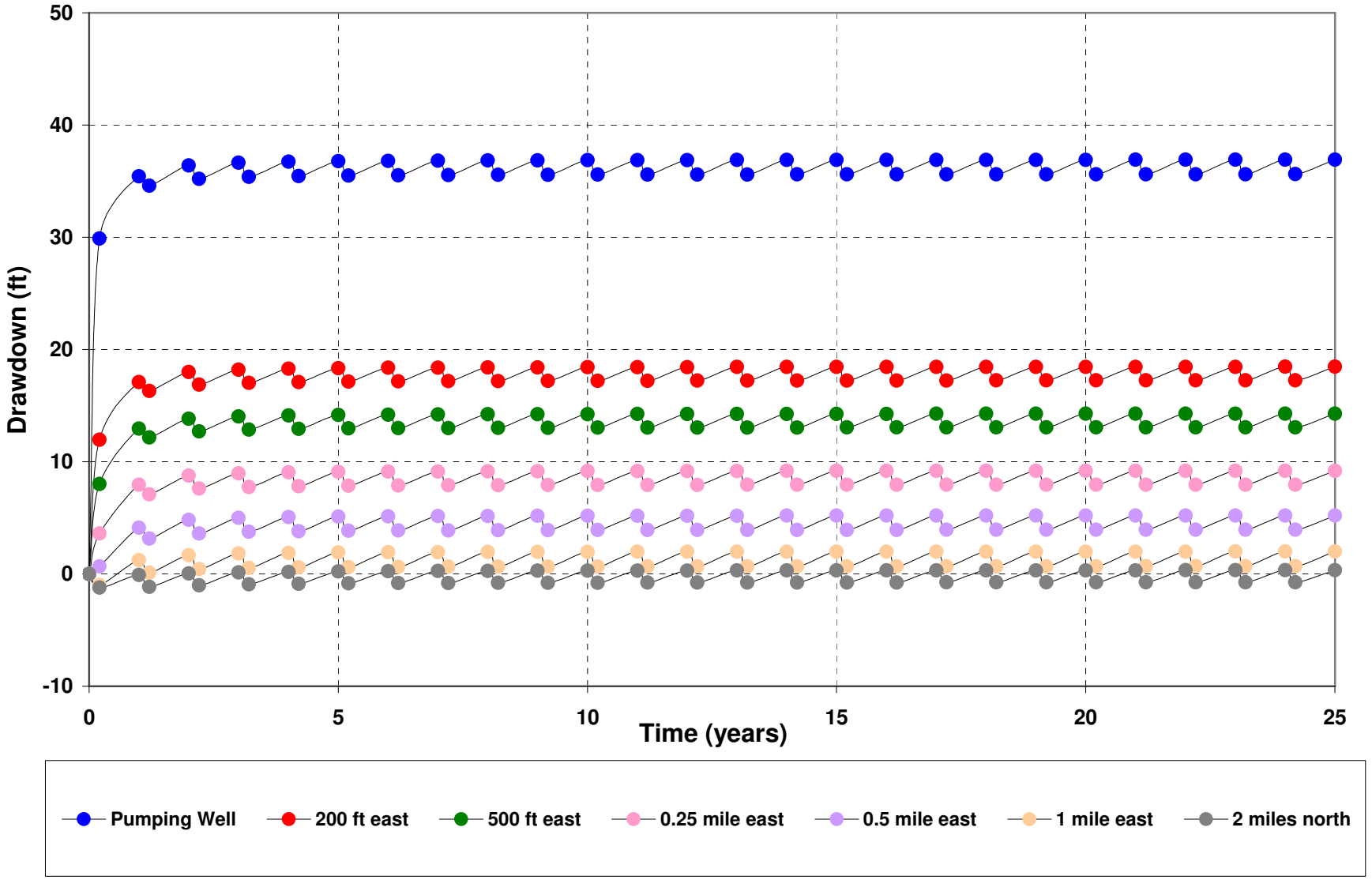


Figure 4: Simulated Drawdown at Select Observation Points

Base Case

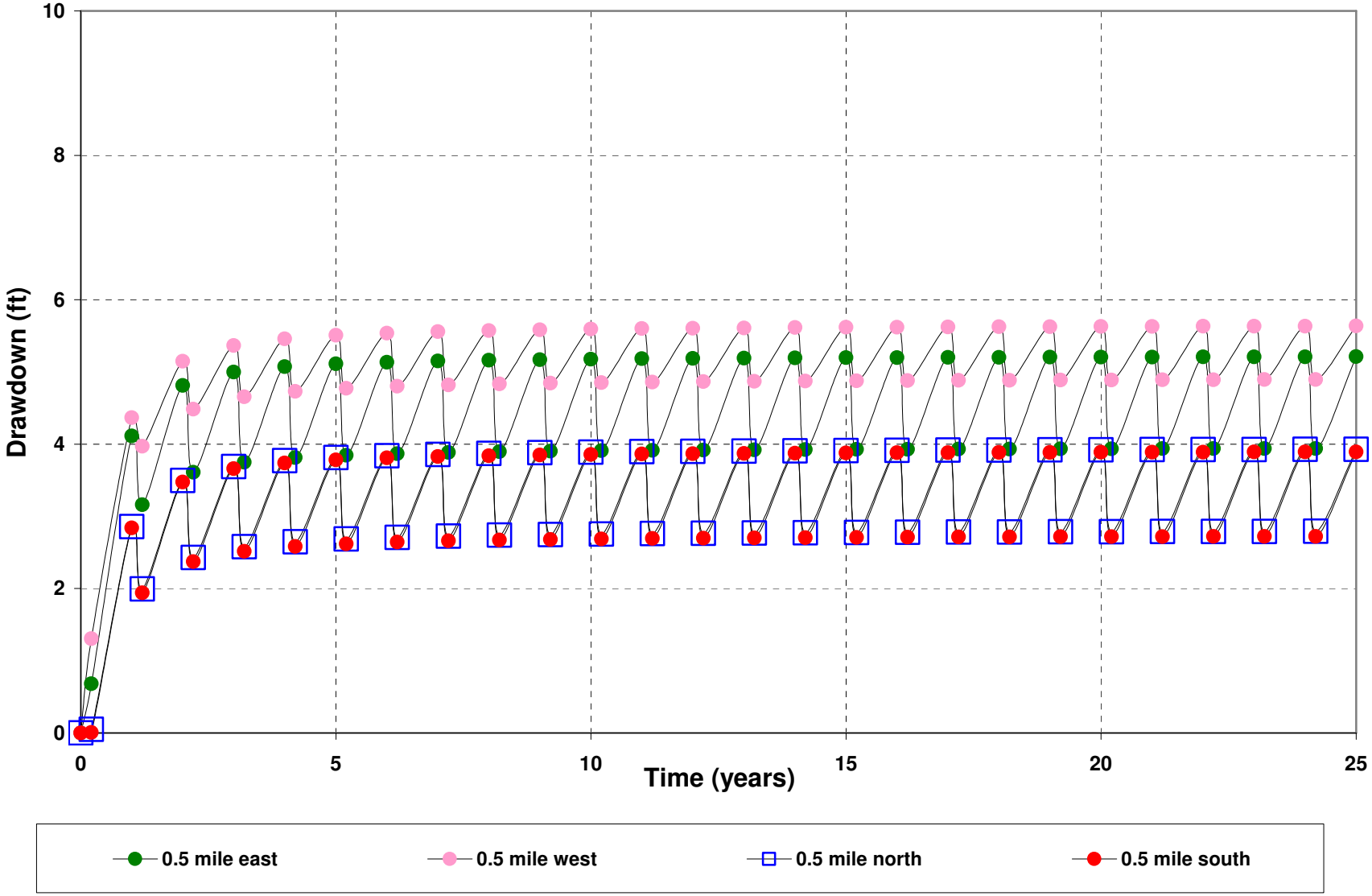


Figure 5: Simulated Drawdown at 0.5 Mile from the Pumping Wells in East, West, North, and South Directions - Base Case

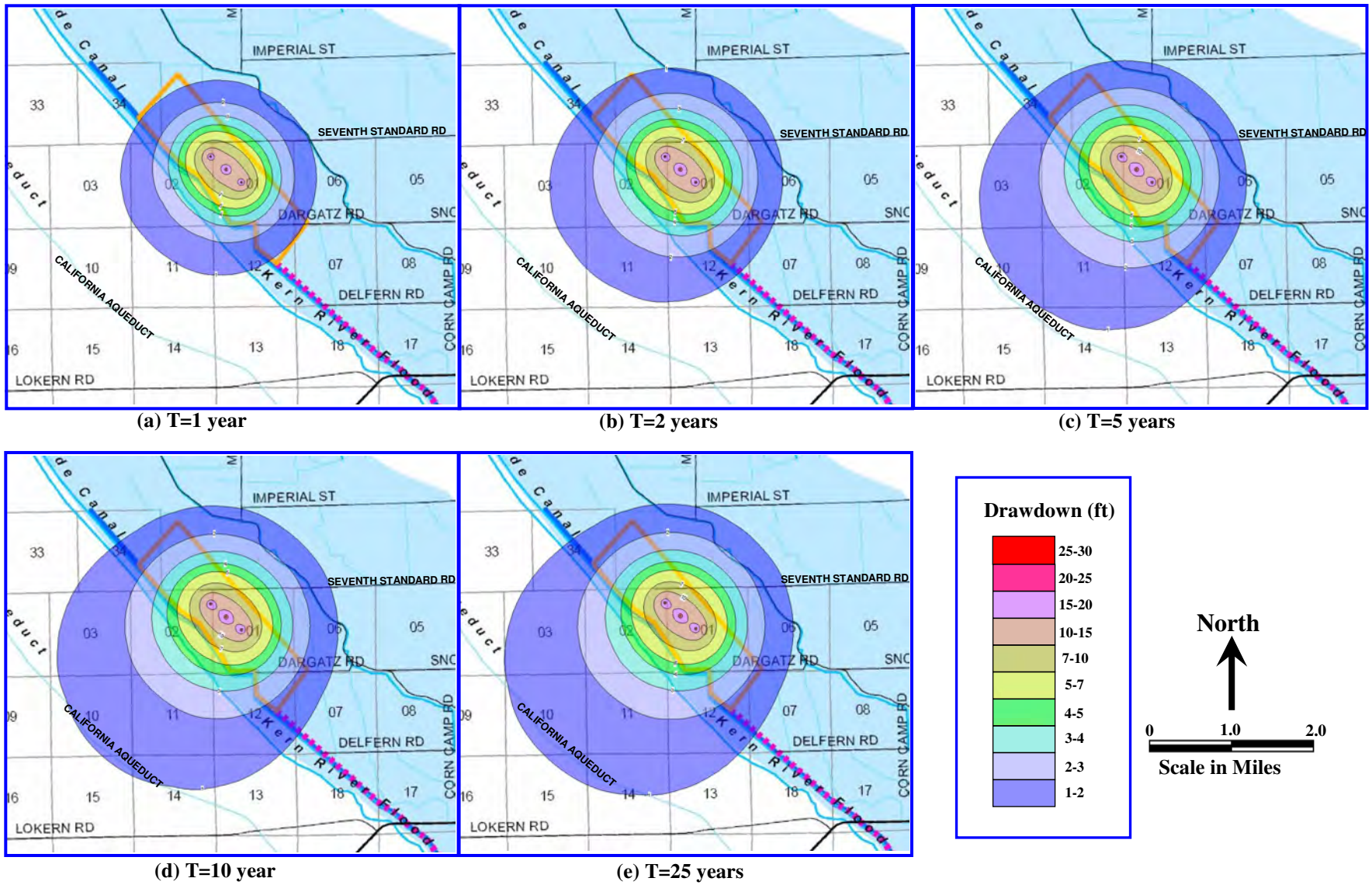
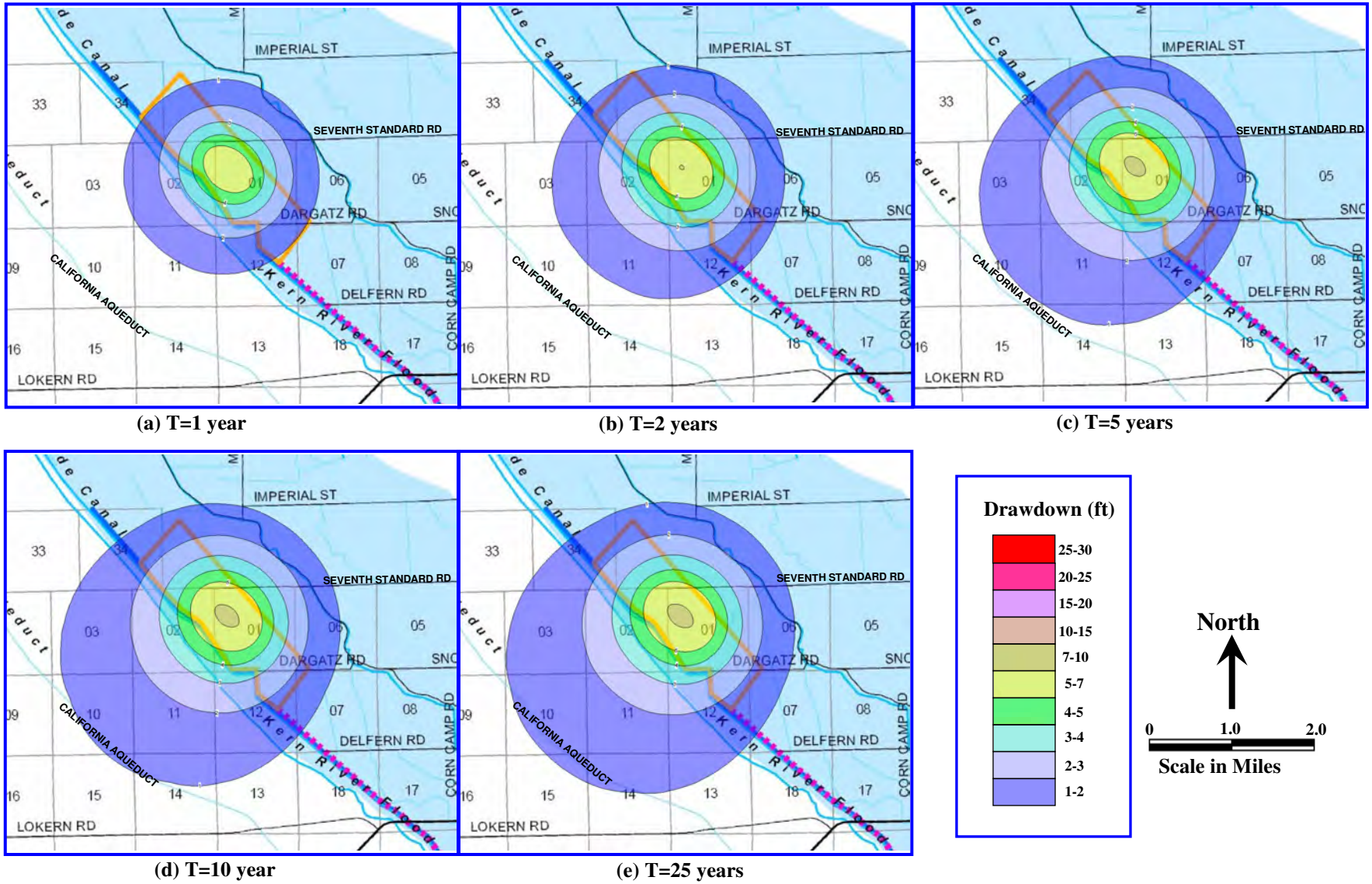


Figure 6: Contour Maps of Simulated Drawdown in Shallow Zone (Model Layer 1) at Various Times – Base Case

(Contour intervals = 1, 2, 3, 4, 5, 7, 10, 15, 20, 25, and 30 ft)



(a) T=1 year (b) T=2 years (c) T=5 years

(d) T=10 year (e) T=25 years

Figure 7: Contour Maps of Simulated Drawdown in Deep Zone (Model Layer 2) at Various Times – Base Case

(Contour intervals = 1, 2, 3, 4, 5, 7, 10, 15, 20, 25, and 30 ft)

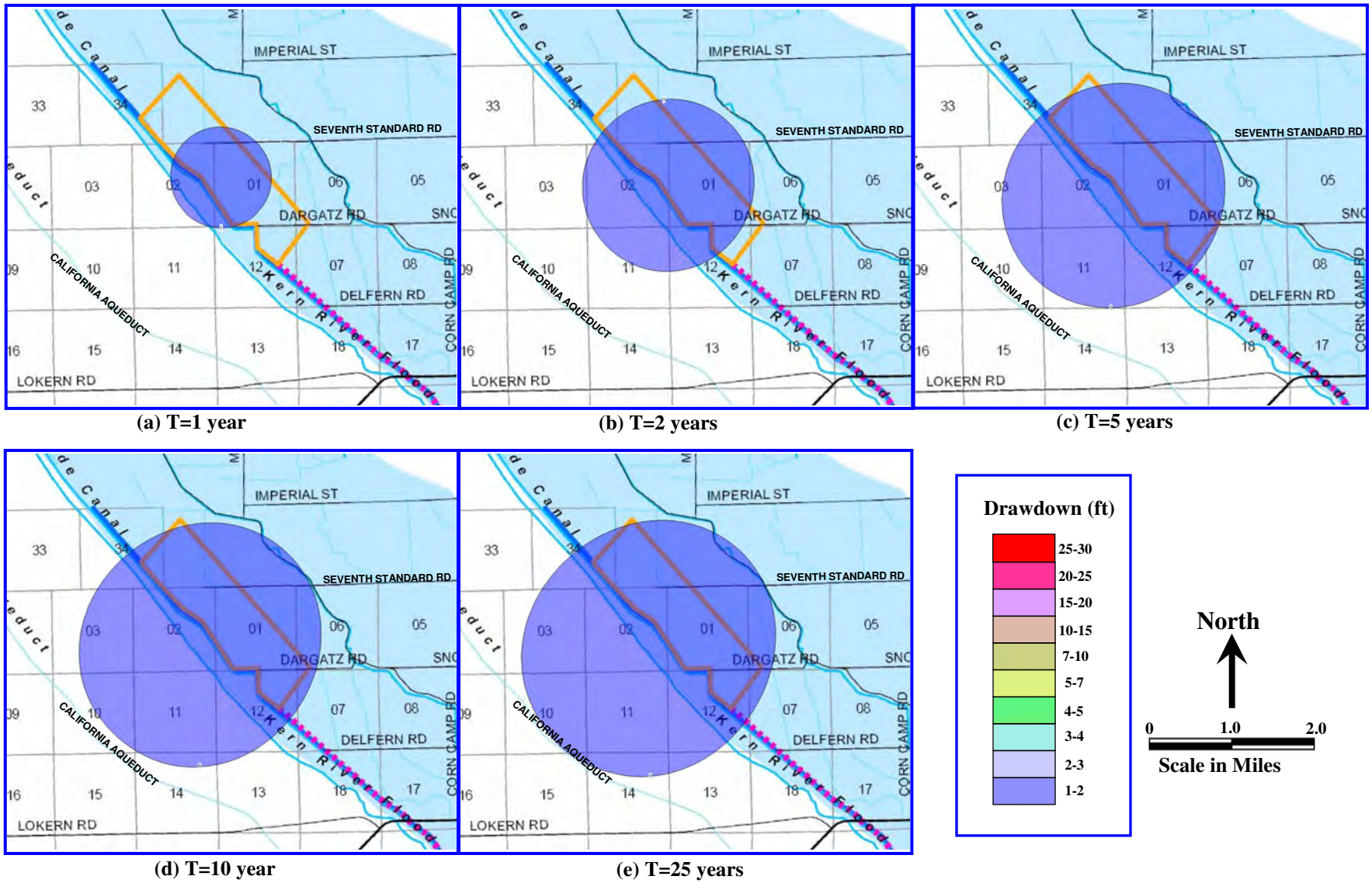


Figure 8: Contour Maps of Simulated Drawdown in Deeper Zone (Model Layer 3) at Various Times – Base Case

(Contour intervals = 1, 2, 3, 4, 5, 7, 10, 15, 20, 25, and 30 ft)

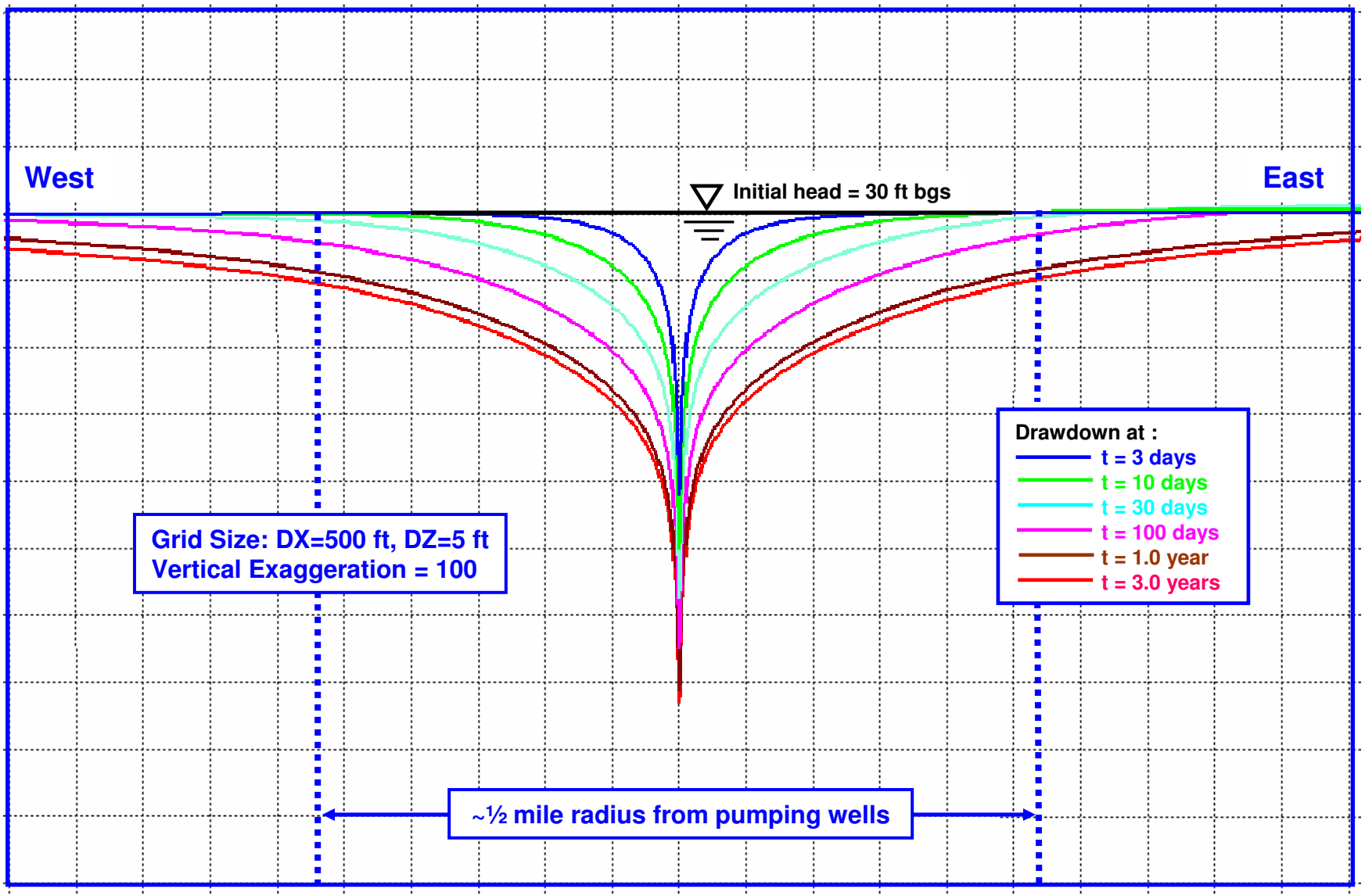


Figure 9: Simulated Groundwater Table Profiles at Various Simulation Times (perpendicular to well line)

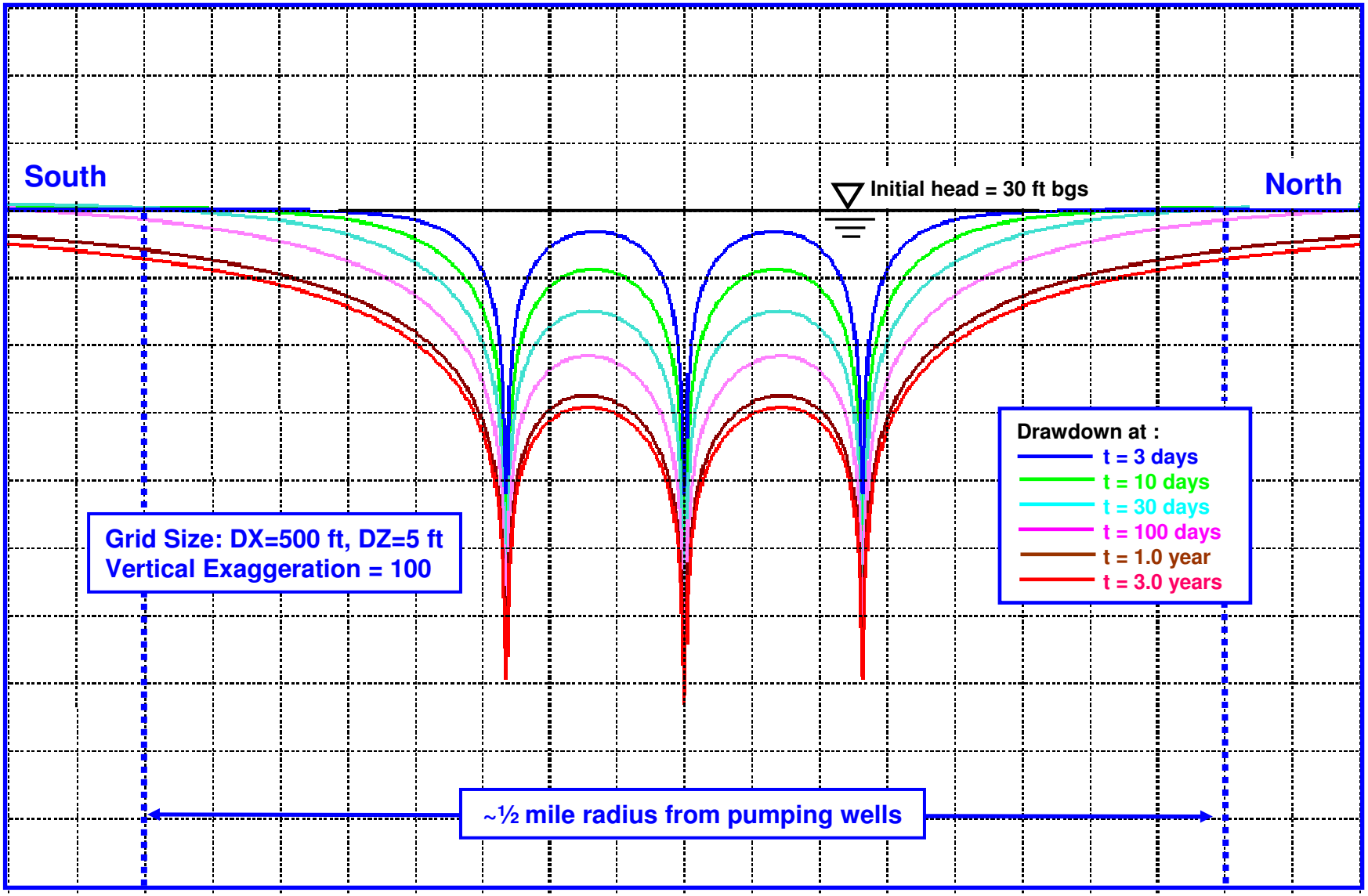


Figure 10: Simulated Groundwater Table Profiles at Various Simulation Times (along well line)

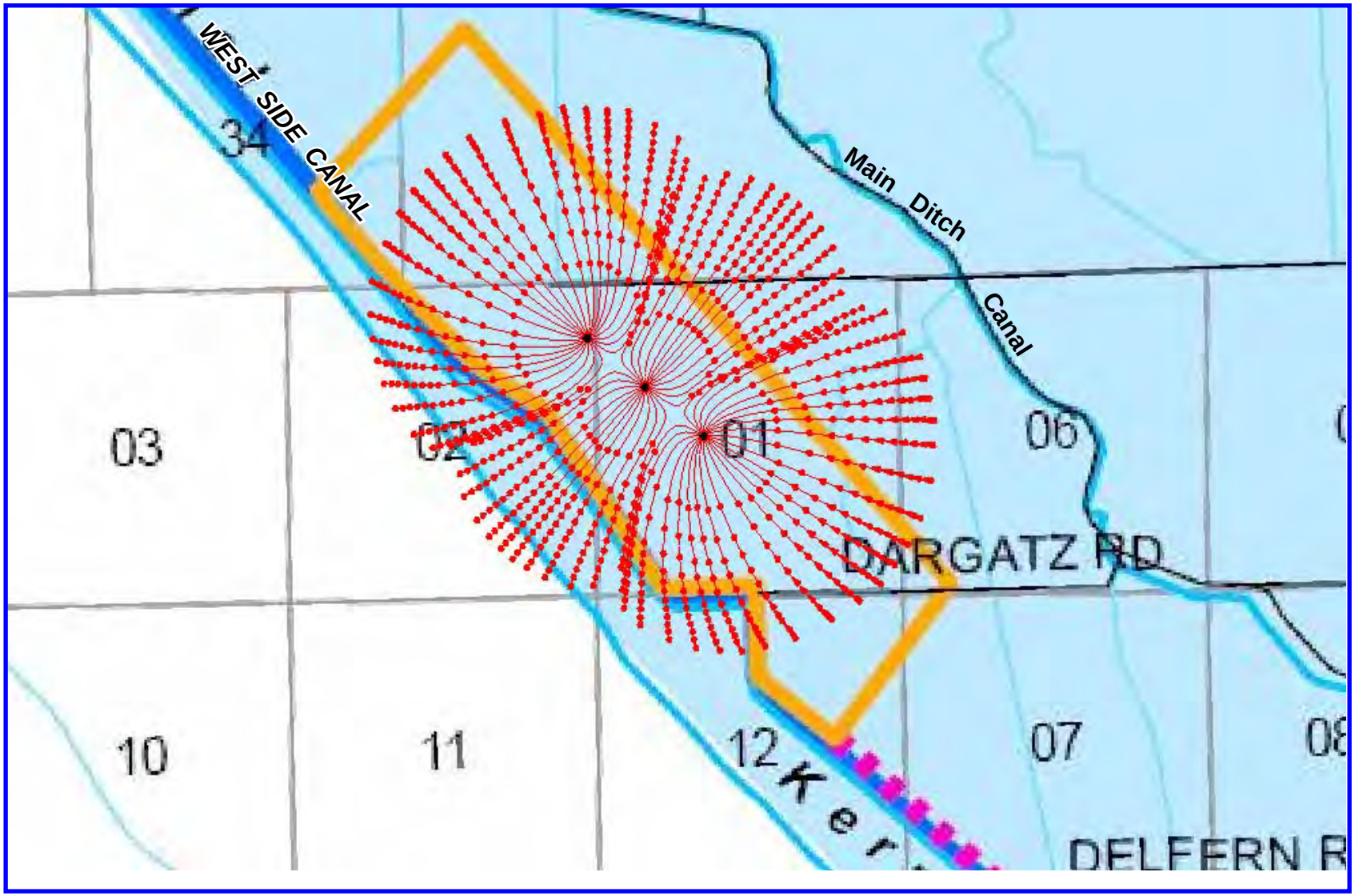


Figure 11: Simulated Groundwater Pathlines Induced by Project Pumping (travel time between arrow intervals = 2.0 years)

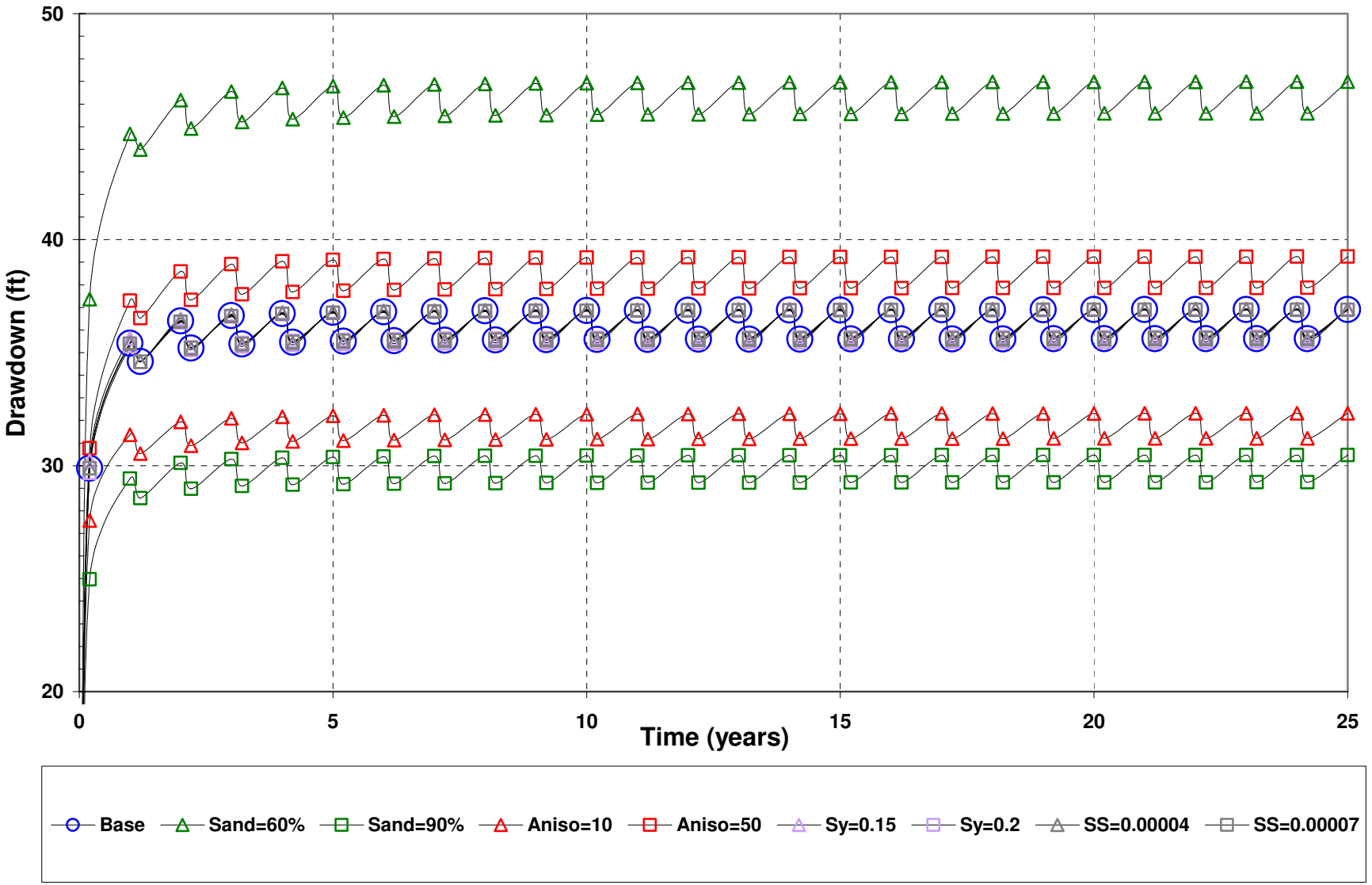


Figure 12: Sensitivity Comparison –

Simulated Drawdown at Pumping Wells

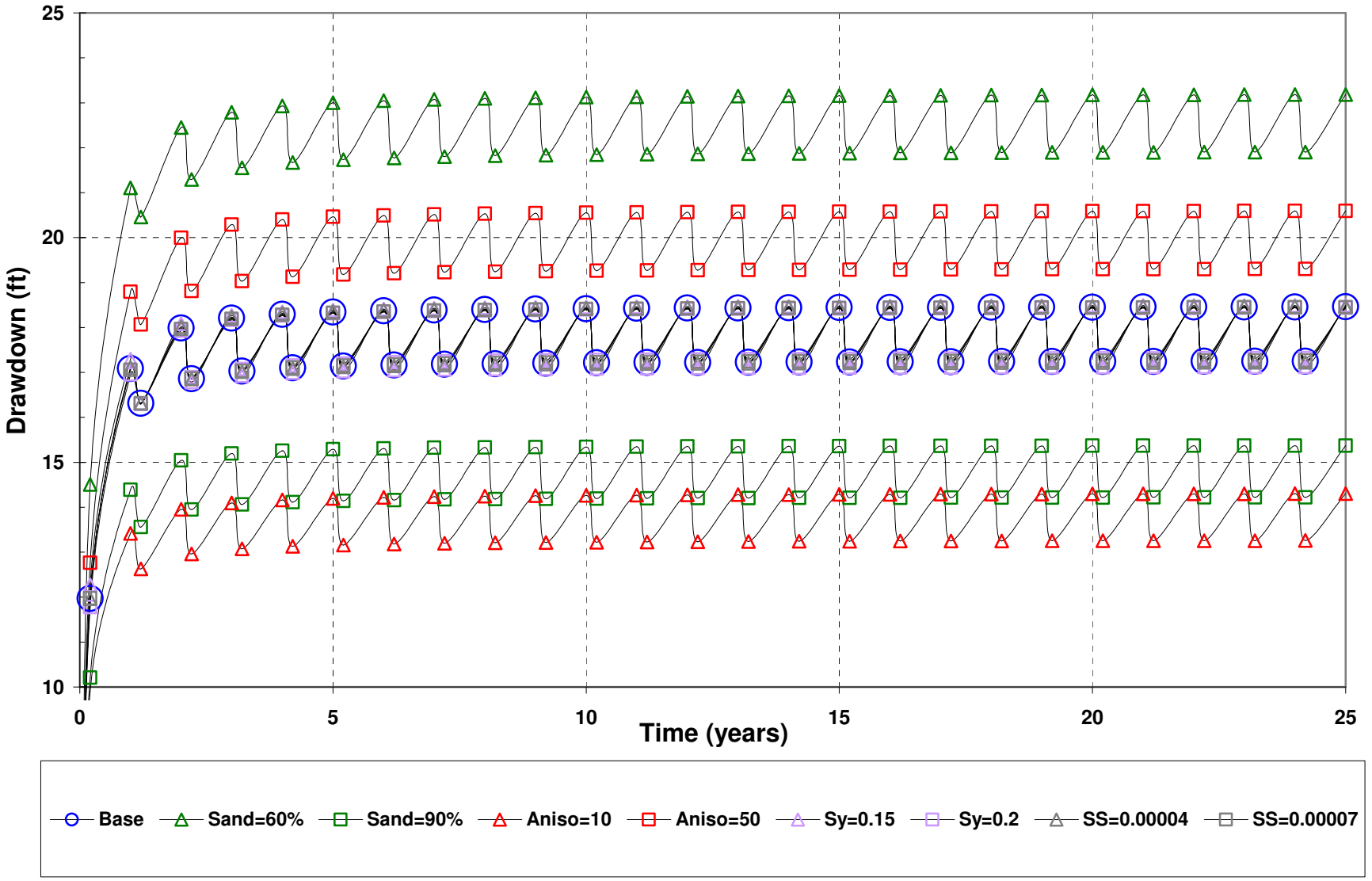


Figure 13: Sensitivity Comparison –

Simulated Drawdown 200 ft East of Pumping Wells

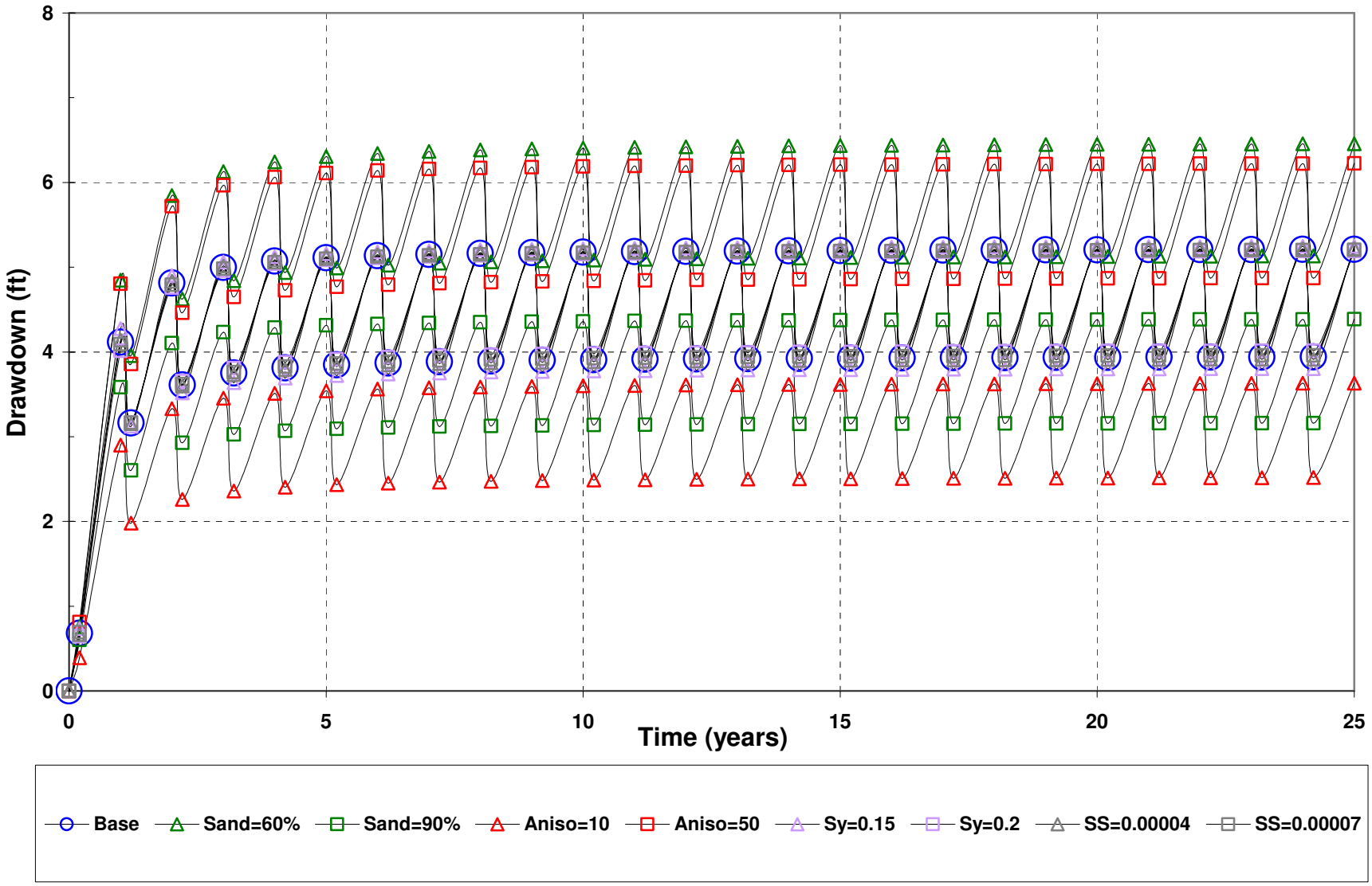


Figure 14: Sensitivity Comparison –

Simulated Drawdown 0.5 Mile East of Pumping Wells

Appendix N-3

BVWSD Groundwater Monitoring Plan

FINAL ENVIRONMENTAL IMPACT REPORT
FOR THE
BUENA VISTA WATER STORAGE DISTRICT
BUENA VISTA WATER MANAGEMENT PROGRAM

Submitted pursuant to the requirements of the
California Environmental Quality Act

by the

BUENA VISTA WATER STORAGE DISTRICT

State Clearinghouse No.
2009011008

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BUENA VISTA WATER STORAGE DISTRICT
FINAL ENVIRONMENTAL IMPACT REPORT
FOR THE
BUENA VISTA WATER MANAGEMENT PROGRAM

DECEMBER 2009

Prepared by

KRIEGER & STEWART, INCORPORATED
ENGINEERING CONSULTANTS
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RIVERSIDE, CALIFORNIA 92501
(951) 684-6900

SIGNATURE _____

DATE 12/21/09

578-8.2
(REPORTS/CEQA/578-8.2-DEIR)
VEM/DFS/jcb

APPENDIX B

BVWSD GROUNDWATER MONITORING PLAN

BUENA VISTA WATER STORAGE DISTRICT

GROUNDWATER MONITORING PLAN

The landowners of the District have long realized the importance of their groundwater supply. District staff, as directed by the Board of Directors, began monitoring the groundwater as early as the 1940s. Today the District not only maintains explicit surface water delivery records, but comprehensive groundwater monitoring records as well. Both of these programs have progressed with new technologies as new concerns for our basin's protection materialize. The goal of groundwater monitoring is to identify the causes of and find solutions to increasing pumping depths, perched water tables, and groundwater quality degradation. Of course, pumping costs increase as the depth to groundwater increases. Crop yields suffer due to shallow, saline groundwater continually in the root zone. Crop yields also decrease as groundwater quality degrades. The cause and effect relationship of such groundwater and water quality parameters provides for better management decisions. It is expected the District will continue to cooperate, participate, and contribute to the local water management community which is tasked to improve data collection and understanding of the Kern groundwater basin and how to best and equitably manage it. To that end this plan is always subject to modification and revision.

Production Well Surveys. The District currently measures the depth to groundwater in 57 of more than 200 irrigation wells quarterly. Water quality samples are also taken from about 25 wells and analyzed for standard irrigation constituents and other constituents of concern annually or when possible due to pumping cycles. Every five years, a full well survey monitors and classifies all irrigation wells within the District. Recorded data includes well location, state of use, depth to water, and any available pumping equipment physical characteristics.

Monitoring Wells. Currently there are 19 designated monitoring wells throughout the District (shown on attached map, "Monitored Pumping Zone Wells"). The District most recently completed three new monitoring wells in early 1994 (DMW-6, DMW-7, and DMW-8). They were located within the central part of the Buttonwillow service area to better cover the North-South alignment of the existing monitoring well grid. In 1992, in cooperation with the Kern Water Bank, the Department of Water Resources (DWR) installed three double completion monitor wells in the southern portion of the Buttonwillow service area to coordinate monitoring with the Kern Water Bank activities. All of the monitor wells are measured for depth to water quarterly and samples are taken and analyzed for standard irrigation constituents and other constituents of concern annually (summer).

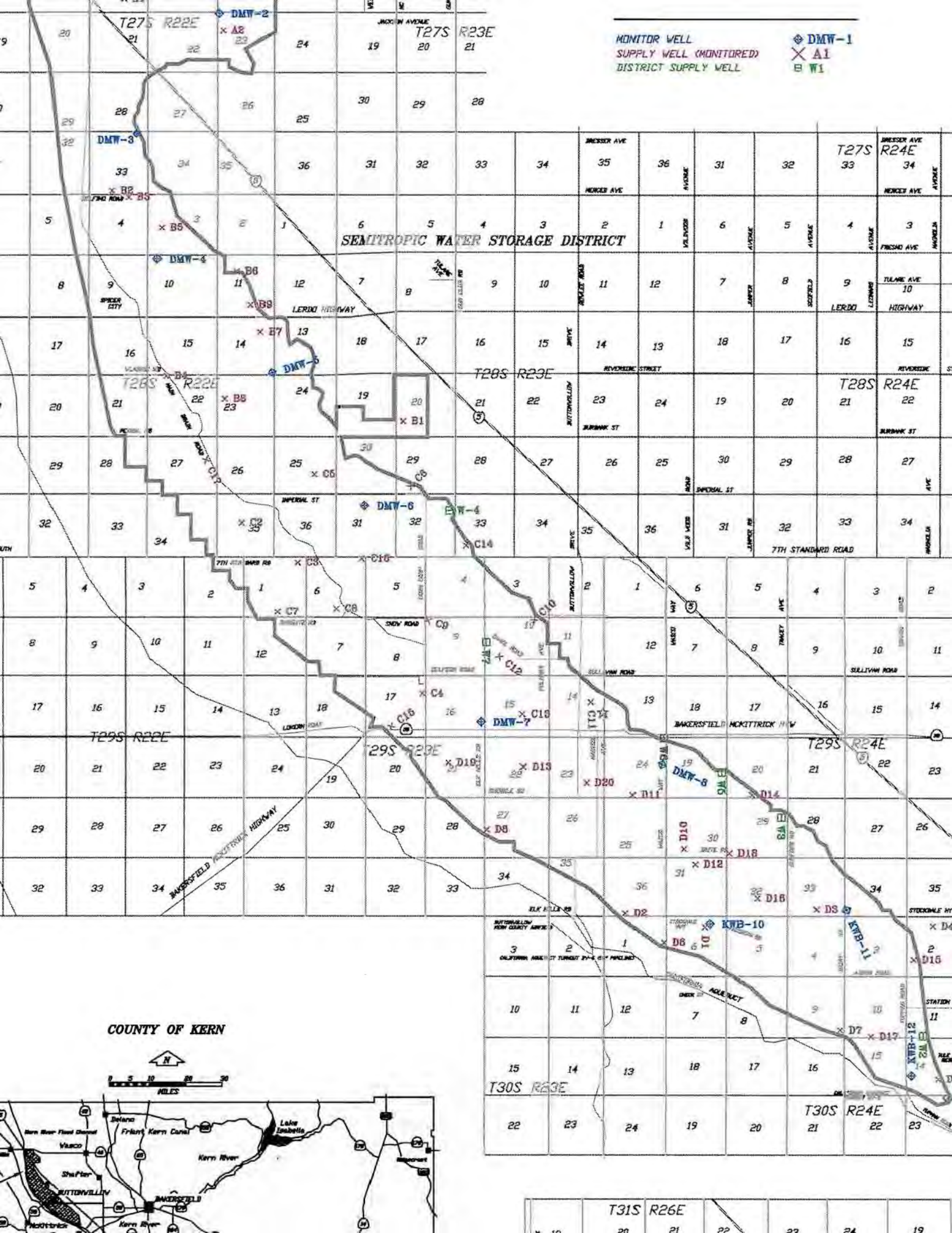
Shallow Piezometers. The District, in conjunction with the Department of Water Resources (DWR), has also installed 94 shallow piezometers, designed to assist in monitoring the shallow groundwater table within the northern portion of the District. These 20 foot deep wells measure the groundwater found in the upper zone of the soil profile. They are measured for depth to water quarterly and for salinity levels annually (spring). This data provides the information needed to plot shallow groundwater level contours to denote annual fluctuations as well as changes over time for both water levels and groundwater quality.

Crop Surveys. Annual Crop surveys provide data so that water demands can be better quantified. For that reason District staff annually produces crop survey maps and these maps are compiled in numerical spreadsheets so that total specific crop acreage can be calculated and summarized.

Surface Delivery Records. In part, surface delivery records are kept so that actual field delivery use can be determined. The District's Hydrography Department maintains detailed surface delivery records that show where, when, and how each acre-foot of

District water is utilized. Uses include such areas as: irrigation, canal losses, intentional recharge, reservoir losses, and conjunctive use programs.

Groundwater Balance Studies. An annual groundwater balance, reflecting groundwater recharge and recovery over time, has been continually updated for the District's operations since 1970. This is done so that the District can evaluate water put into basin storage for future use in the basin for a variety of purposes as deemed appropriate by the District.


MONITOR WELL
SUPPLY WELL (MONITORED)
DISTRICT SUPPLY WELL
DMW-1
A1
W1
SEMITROPIC WATER STORAGE DISTRICT
T27S R22E
T27S R23E
T27S R24E
T28S R22E
T28S R23E
T28S R24E
T29S R22E
T29S R23E
T29S R24E
T30S R23E
T30S R24E
T31S R26E
DMW-2
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D20
E7
W2
W3
W4
W5
W6
JACKSON AVENUE
MERCER AVE
FRESNO AVE
TULARE AVE
HIGHWAY
RIVERSIDE STREET
BURBANK ST
IMPERIAL ST
7TH STANDARD ROAD
SNOW ROAD
SULLIVAN ROAD
LERDO HIGHWAY
BAKERSFIELD MCKITTRICK HWY
BUTTONWILLOW
LOKERN ROAD
MAIN ROAD
ELK HILLS RD
STOCKDALE HWY
STATION
COUNTY OF KERN
N
0 5 10 20 30
MILES
Delano
Friant Kern Canal
Lake Isabella
Kern River Flood Channel
Visalia
Kern River
Shafter
BUTTONWILLOW
BAKERSFIELD
Kern River
McKittrick

APPENDIX C

MEMORANDUM OF UNDERSTANDING REGARDING OPERATION AND MONITORING OF THE BVWSD GROUNDWATER BANKING PROGRAM

MEMORANDUM OF UNDERSTANDING

REGARDING OPERATION AND MONITORING OF THE BUENA VISTA WATER STORAGE DISTRICT GROUNDWATER BANKING PROGRAM

This Memorandum of Understanding is entered into the Effective Date hereof by and among BUENA VISTA WATER STORAGE DISTRICT, hereinafter referred to as "Buena Vista", and SEMITROPIC WATER STORAGE DISTRICT, HENRY MILLER WATER DISTRICT, KERN COUNTY WATER AGENCY, KERN DELTA WATER DISTRICT, KERN WATER BANK AUTHORITY, ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT, and WEST KERN WATER DISTRICT, collectively referred to as "Adjoining Entities."

RECITALS

WHEREAS, Buena Vista expects that certain real property more particularly shown on the map attached hereto as Exhibit A and incorporated herein by this reference ("Project Site"), or portions thereof, will be used in connection with the Project; and

WHEREAS, Buena Vista intends to develop and improve the Project Site as necessary to permit the importation, percolation and storage of water in underground aquifers for later recovery, transportation and use for the benefit of Buena Vista, all as more fully described in Exhibit B attached hereto and incorporated herein by this reference ("Project"); and

WHEREAS, Adjoining Entities encompass lands and/or operate existing projects lying adjacent to the Project Site as shown on said Exhibit A; and

WHEREAS, in recent years, water banking, recovery and transfer programs in Kern County have become increasingly numerous and complex; and

WHEREAS, it is appropriate and desirable to mitigate or eliminate any short-term and long-term significant adverse impacts of new programs upon potentially affected projects and landowners within the boundaries of Adjoining Entities; and

WHEREAS, Adjoining Entities and Buena Vista desire that the design, operation and monitoring of the Project be conducted and coordinated in a manner to insure that the beneficial effects of the Project to Buena Vista are maximized but that the Project does not result in significant adverse impacts to water levels, water quality or land subsidence within the boundaries of Adjoining Entities, or otherwise interfere with the existing and ongoing programs of Adjoining Entities; and

WHEREAS, on October 26, 1995, the Kern Water Bank Authority and its Member Entities, as the "Project Participants," and Buena Vista Water Storage District, Rosedale-Rio Bravo Water Storage District, Kern Delta Water District, Henry Miller Water District and West Kern Water District, as the "Adjoining Entities," entered into a Memorandum of Understanding, similar to this Memorandum of Understanding, which provided among other things at Paragraph 8 that for "any future project within the Kern Fan Area, the Parties hereto shall use good faith efforts to negotiate an agreement substantially similar in substance to this MOU," and by entering into this MOU the Adjoining Entities find that this MOU satisfies such requirement for the Project; and

WHEREAS, Buena Vista intends to operate its Project such that the same does not cause or contribute to overdraft of the groundwater basin; and

WHEREAS, in connection with its environmental review for the Project, Buena Vista commissioned a hydrologic balance study for the period 1962 - 2000, which study shows that the District is not currently operating in a state of overdraft, and, further, Buena Vista has projected said hydrologic balance study into the future, assuming completion of the Project, and said projection demonstrates that the District is not expected to operate in state of overdraft following implementation of the Project which studies have not been independently verified by the Adjoining Entities; and

WHEREAS, in the hydrologic balance studies conducted by Buena Vista in connection with the Project, the annual safe yield from the groundwater basin is assumed to be .3 acre-feet per acre times the gross developed acres in the District and no assumption is included with respect to groundwater inflow or outflow; and

WHEREAS, this MOU affects banking programs operated directly or indirectly for the benefit of third parties involving, (1) construction of new facilities or (2) direct or indirect sale of stored groundwater by Buena Vista, as more particularly described in Exhibit B.

NOW, THEREFORE, BE IT RESOLVED that, based upon the mutual covenants contained herein, the parties hereto agree as follows:

1. Project Description and Construction. Buena Vista has completed a preliminary Project Description described in Exhibit B hereto representing the contemplated facilities for the Project. Said preliminary description has been reviewed by the parties hereto except, however, the Adjoining Entities have not reviewed, approved or agreed to any wells located outside the existing District boundary. The

foregoing shall not be interpreted to imply consent to any aspect of any future project not described in the Environmental Impact Report, certified October 11, 2002, for the Buena Vista/Rosedale Rio Bravo Water Banking and Recovery Program. Buena Vista will construct the Project consistent with such preliminary description. Any major modifications of the facilities and/or significant changes from that described in Exhibit B and in the environmental documentation for the Project will be subject to additional environmental review pursuant to CEQA and will be subject to review of the Monitoring Committee prior to implementation.

2. Project Operation. The Project shall be operated to achieve the maximum water storage and withdrawal benefits for Buena Vista consistent with avoiding, mitigating or eliminating to the greatest extent practicable, significant adverse impacts resulting from the Project. To that end, the Project shall be operated in accordance with the following Project Objectives and Minimum Operating Criteria:

a. Project Objectives. Consistent with the Project description, Buena Vista will make a good faith effort to meet the following objectives, which may or may not be met:

(1) The parties should operate their projects in such manner as to maintain and, when possible, enhance the quality of groundwater within the Project Site and the Kern Fan Area as shown in Exhibit C.

(2) If supplies of acceptable recharge water exceed recharge capacity, all other things being equal, recharge priority should be given to the purest or best quality water.

(3) Each project within the Kern Fan Area should be operated with the objective that the average concentration of total dissolved salts in the recovered water will exceed the average concentration of total dissolved salts in the recharged water, at a minimum, by a percentage equal to or greater than the percentage of surface recharge losses. The average shall be calculated from the start of each project.

(4) To maintain or improve groundwater quality, recovery operations should extract poorer quality groundwater where practicable. Blending may be used to increase recovery of lesser quality groundwater unless doing so will exacerbate problems by generating unfavorable movement of lesser quality groundwater. It is recognized that the extent to which blending can help to resolve groundwater quality problems is limited by regulatory agency rules regarding discharges into conveyance systems used for municipal supplies, which may be changed from time to time.

(5) All groundwater pumpers should attempt to control the migration of poor quality water. Extensive monitoring will be used to identify the migration of poor quality water and give advance notice of developing problems. Problem areas may be dealt with by actions including, but not limited to:

(a) limiting or terminating extractions that tend to draw lesser quality water toward or into the usable water areas;

(b) increasing extractions in areas that might generate a beneficial, reverse gradient;

(c) increasing recharge within the usable water area to promote favorable groundwater gradients.

(6) It is intended that all recovery of recharged water be subject to the so-called "golden rule." In the context of a banking project, the "golden rule" means that, unless acceptable mitigation is provided, the banker may not operate so as to create conditions that are worse than would have prevailed absent the project giving due recognition to the benefits that may result from the project, all as more fully described at paragraph 2(b)12 below.

(7) The Project shall be developed and operated so as to prevent, eliminate or mitigate significant adverse impacts. Thus, the Project shall incorporate mitigation measures as necessary. Mitigation measures to prevent significant adverse impacts from occurring include but are not limited to the following: (i) spread out recovery area; (ii) provide buffer areas between recovery wells and neighboring overlying users; (iii) limit the monthly, seasonal, and/or annual recovery rate; (iv) provide sufficient recovery wells to allow rotation of recovery wells or the use of alternate wells; (v) provide adequate well spacing; (vi) adjust pumping rates or terminate pumping to reduce impacts, if necessary; (vii) impose time restrictions between recharge and recovery to allow for downward percolation of water to the aquifer; and (viii) provide recharge of water that would otherwise not recharge the Kern Fan Basin. Mitigation measures that compensate for unavoidable adverse impacts include but are not limited to the following: (i) with the consent of the affected groundwater pumper, lower the pump bowls or deepen wells as necessary to restore

groundwater extraction capability to such pumper; (ii) with the consent of the affected groundwater pumper, provide alternative water supplies to such pumper; and (iii) with the consent of the affected groundwater pumper, provide financial compensation to such pumper.

b. Minimum Operating Criteria.

(1) The Monitoring Committee shall be notified prior to the recharge of potentially unacceptable water, such as "produced water" from oilfield operations, reclaimed water, or the like. The Monitoring Committee shall review the proposed recharge and make recommendations respecting the same as it deems appropriate. Where approval by the Regional Water Quality Control Board is required, the issuance of such approval by said Board shall satisfy this requirement.

(2) Recharge may not occur in, on or near contaminated areas, nor may anyone spread in, on or near an adjoining area if the effect will be to mound water near enough to the contaminated area that the contaminants will be picked up and carried into the uncontaminated groundwater supply. When contaminated areas are identified within or adjacent to the Project, Buena Vista shall also:

(a) participate with other groundwater pumpers to investigate the source of the contamination;

(b) work with appropriate authorities to ensure that the entity or individual, if any, responsible for the contamination meets its responsibilities to remove the contamination and thereby return the Project Site to its full recharge and storage capacity;

(c) operate the Project in cooperation with other groundwater pumpers to attempt to eliminate the migration of contaminated water toward or into usable water quality areas.

(3) Operators of projects within the Kern Fan Area will avoid operating such projects in a fashion so as to significantly diminish the natural, normal and unavoidable recharge of water native to the Kern Fan Area as it existed in pre-project condition. If and to the extent this occurs as determined by the Monitoring Committee, the parties will cooperate to provide equivalent recharge capacity to offset such impact.

(4) The mitigation credit referenced in 2.b(12) for fallowed Project land shall be .3 acre-feet per acre per year times the amount of fallowed land included in the Project Site in the year of calculation.

(5) The District Lands shown in Exhibit A may be utilized for any purpose provided, however, the use of said property shall not cause or contribute to overdraft of the groundwater basin.

(6) Each device proposed to measure recharge water to be subsequently recovered and/or recovery of such water will be initially evaluated and periodically reviewed by the Monitoring Committee. Each measuring device shall be properly installed, calibrated, rated, monitored and maintained by and at the expense of the owner of the measuring device.

(7) It shall be the responsibility of the user to insure that all measuring devices are accurate and that the measurements are provided to the

Monitoring Committee at the time and in the manner required by the Monitoring Committee.

(8) A producer's flow deposited into another facility, such as a transportation canal, shall be measured into such facility by the operator thereof and the measurement reported to the Monitoring Committee at the time and in the manner required by such Monitoring Committee.

(9) The Monitoring Committee or its designee will maintain official records of recharge and recovery activities, which records shall be open and available to the public. The Monitoring Committee will have the right to verify the accuracy of reported information by inspection, observation or access to user records (i.e., P.G.&E. bills). The Monitoring Committee will publish or cause to be published annual reports of operations.

(10) Losses shall be assessed as follows:

(a) Surface recharge losses shall be fixed and assessed at a rate of 6% of water diverted for direct recharge.

(b) To account for all other actual or potential losses (including migration losses), a rate of 4% of water placed in a bank account (including District accounts when designated for potential sale) shall be deducted to the extent that Buena Vista has been compensated within three (3) years following the end of the calendar year in which the water was designated as banked at the SWP Delta Water Rate charged by DWR at the time of payment; provided further, however, that the water

purchased and subtracted from a groundwater bank account pursuant to this provision shall only be used for overdraft correction within the district purchasing the water.

(c) An additional 5% loss shall be assessed against any water diverted to the Project Site for banking by, for, or on behalf of any out-of-County person, entity or organization and/or against any banked water sold or transferred to any out-of-County person, entity or organization (except current SWP Agricultural Contractors).

(d) All losses provided for herein represent amounts of water that are non-bankable and non-recoverable by Buena Vista.

(11) Recovery of banked water shall be from the Project Site and recovery facilities shall be located therein. Recovery from outside the Project Site may be allowed with the consent of the District or entity having jurisdiction over the area from which the recovery will occur and upon review by the Monitoring Committee.

(12) Recovery of banked water may not be allowed if not otherwise mitigated if it will result in significant adverse impacts to surrounding overlying users. "Adverse impacts" will be evaluated using data applicable in zones including the area which may be affected by the Project of approximately five miles in width from the boundaries of the Project as designated by the Monitoring Committee. In determining "adverse impacts," as provided at this paragraph and elsewhere in this MOU, consideration will be given to the benefits accrued over time during operation of the Project to landowners surrounding the Project Site including higher groundwater levels as a result of operation of the Project. In determining non-Project conditions vs. Project

conditions, credit toward mitigation of any otherwise adverse impacts shall be recognized to the extent of the 4% loss and 5% losses recognized under paragraphs 2.b.(10)(b) and (c), for the mitigation credit recognized under paragraph 2.b.(4), if any, and to the extent of recharge on the Project Site for overdraft correction.

(13) To the extent that interference, other than insignificant interference, with the pumping lift of any existing active well as compared to non-Project conditions, is attributable to pumping of any wells on the Project Site, Buena Vista will either stop pumping as necessary to mitigate the interference or compensate the owner for such interference, or any combination thereof. The Monitoring Committee will establish the criteria necessary to determine if well interference, other than insignificant interference, is attributable to pumping of Project wells by conducting pumping tests of Project wells following the installation of monitoring wells (if not already completed) and considering hydrogeologic information.

(14) The Kern Fan Element Groundwater Model, with input from Buena Vista and the Adjoining Entities, and utilizing data from a comprehensive groundwater monitoring program, may be used by the Monitoring Committee as appropriate to estimate groundwater impacts of the Project.

(15) The Project shall be operated with a positive balance, i.e., there shall be no "borrowing" of water for recovery from the basin.

3. Project Monitoring. Adjoining Entities agree to participate in a comprehensive monitoring program and as members of a Monitoring Committee, as hereinafter more particularly described, in order to reasonably determine groundwater

level and water quality information under Project and non-Project conditions. The monitoring program will more particularly require the following:

a. Monitoring Committee: Buena Vista and the Adjoining Entities shall form a Monitoring Committee for the Project upon terms and conditions acceptable to the participants. The Monitoring Committee shall:

(1) Engage the services of a suitable independent professional groundwater specialist who shall, at the direction of the Committee, provide assistance in the performance of the tasks identified below;

(2) Meet and confer ~~monthly or at other intervals deemed to be~~ appropriate in furtherance of the monitoring program;

(3) Establish a groundwater evaluation methodology or methodologies;

(4) Prepare a monitoring plan and two associated maps, "Well Location, Water Quality Network," and "Well Location, Water Level Network," which plan and maps depict the location and types of wells anticipated to be used in the initial phase of groundwater monitoring (said plan and maps are expected to be modified from time to time as the monitoring program is developed and operated);

(5) Specify such additional monitoring wells and ancillary equipment as are deemed to be necessary or desirable for the purposes hereof;

(6) Prepare annual water balance studies and other interpretive studies, which will designate all sources of water and the use thereof within the study area;

(7) Develop criteria for determining whether excessive mounding or withdrawal is occurring or is likely to occur in an area of interest;

(8) Annually or as otherwise needed determine the impacts of the Project on each of the Adjoining Entities by evaluating with and without Project conditions; and

(9) Develop procedures, review data, and recommend Project operational criteria for the purpose of identifying, verifying, avoiding, eliminating or mitigating, to the extent practicable, the creation of significant imbalances or significant adverse impacts.

b. Collection and Sharing of Data. The Adjoining Entities will make available to the Monitoring Committee copies of all relevant groundwater level, groundwater quality, and other monitoring data currently collected and prepared by each. Buena Vista shall annually report, by areas of interest, water deliveries for banking and other purposes, groundwater withdrawals from bank accounts, transfers and other changes in account balances.

c. Monitoring Costs.

(1) The cost of constructing any necessary monitoring wells and ancillary equipment within Buena Vista shall be borne by Buena Vista. The cost of any new or additional monitoring wells and ancillary equipment outside of the boundaries of Buena Vista shall be borne as may be determined by separate agreement of Buena Vista and Adjoining Entities.

(2) Each of the parties shall be responsible for the personnel costs of its representative on the Monitoring Committee. In addition, the Adjoining Entities shall be responsible for all costs of monitoring operations and facilities within their respective boundaries and Buena Vista shall be responsible for all costs of monitoring operations and facilities within the Project Site.

(3) All other groundwater monitoring costs, including employment of the professional groundwater specialist, collection, evaluation and analyses of data as adopted by the Monitoring Committee, shall be allocated among and borne by the parties as they shall agree among themselves. Cost sharing among Adjoining Entities shall be as agreed by them. Any additional monitoring costs shall be determined and allocated by separate agreement of those parties requesting such additional monitoring.

4. Modification of Project Operations. The Monitoring Committee may make recommendations to Buena Vista, including without limitation recommendations for modifications in Project operations based upon evaluation(s) of data which indicate that excessive mounding or withdrawal is occurring or is likely to occur in an area of interest. The Monitoring Committee and its members shall not act in an arbitrary, capricious or unreasonable manner.

5. Dispute Resolution.

a. Submission to Monitoring Committee. All disputes regarding the operation of the Project or the application of this MOU, or any provision hereof, shall first be submitted to the Monitoring Committee for review and analysis. The Monitoring

Committee shall meet and review all relevant data and facts regarding the dispute and, if possible, recommend a fair and equitable resolution of the dispute. The Monitoring Committee and its members shall not act in an arbitrary, capricious or unreasonable manner. In the event that (1) the Monitoring Committee fails to act as herein provided, (2) any party disputes the Monitoring Committee's recommended resolution or (3) any party fails to implement the Monitoring Committee's recommended resolution within the time allowed, any party to this MOU may seek any legal or equitable remedy available as hereinafter provided.

b. Arbitration. If all of the parties agree that a factual dispute exists regarding any recommendation of the Monitoring Committee made pursuant hereto, or implementation thereof, such dispute shall, be submitted to binding arbitration before a single neutral arbitrator appointed by unanimous consent and, in the absence of such consent, appointed by the presiding judge of the Kern County Superior Court. The neutral arbitrator shall be a registered civil engineer or a registered geologist or other person acceptable to the Parties, preferably with a background in groundwater hydrology. The arbitration shall be called and conducted in accordance with such rules as the contestants shall agree upon, and, in the absence of such agreement, in accordance with the procedures set forth in California Code of Civil Procedure section 1282, et seq. Any other dispute may be pursued through a court of competent jurisdiction as otherwise provided by law.

c. Burden of Proof. In the event of arbitration or litigation under this MOU, all parties shall enjoy the benefit of such presumptions as are provided by law

but, in the absence thereof, neither party shall bear the burden of proof on any contested legal or factual issue.

d. Landowner Remedies. Nothing in this MOU shall prevent any landowner within the boundaries of any party from pursuing any remedy at law or in equity in the event such landowner is damaged as a result of projects within the Kern Fan Area.

6. Term. The Effective Date of this MOU shall be January 1, 2003 regardless of the date of actual execution. This MOU shall continue in force and effect from and after the Effective Date until terminated by (1) operation of law, (2) unanimous consent of the parties, or (3) abandonment of the Project and a determination by the Monitoring Committee that all adverse impacts have been fully eliminated or mitigated as provided in this MOU.

7. Complete Agreement/Incorporation Into Banking Agreements. This MOU constitutes the whole and complete agreement of the parties regarding Project operation, maintenance and monitoring. Buena Vista shall incorporate this MOU by reference into any further agreement it enters into respecting banking of water in or withdrawal of water from the Project Site.

8. Future Projects. With respect to any future project within the Kern Fan Area, the Parties hereto shall use good faith efforts to negotiate an agreement substantially similar in substance to this MOU.

9. Notice Clause. All notices required by this MOU shall be sent via first class United States mail to the following and shall be deemed delivered three days after deposited in the mail:

Buena Vista:

Buena Vista Water Storage District (Martin Milobar)
P. O. Box 756
Buttonwillow, CA 93206

Adjoining Entities:

Kern County Water Agency (Tom Clark)
P. O. Box 58
Bakersfield, CA 93301-0058

Kern Delta Water District (Mark Mulkay)
501 Taft Highway
Bakersfield, CA 93307-6247

Semitropic Water Storage District (Wil Boschman)
P. O. Box Z
Wasco, CA 93280-0877

Henry Miller Water District (Joe Lutje)
P. O. Box 9759
Bakersfield, CA 93389-9759

Kern Water Bank Authority (Bill Phillimore)
P. O. Box 80607
Bakersfield, CA 93380-0607

Rosedale-Rio Bravo Water Storage District (Hal Crossley)
P. O. Box 867
Bakersfield, CA 93302-0867

West Kern Water District (Jerry Pearson)
P.O. Box ~~MM~~ 1105
Taft, CA 93268-~~2735~~ 1105

Notice of changes in the representative or address of a party shall be given in the same manner.

10. California Law Clause. All provisions of this MOU and all rights and obligations of the parties hereto shall be interpreted and construed according to the laws of the State of California.

11. Amendments. This MOU may be amended by written instrument executed by all of the parties. In addition, recognizing that the parties may not now be able to contemplate all the implications of the Project, the parties agree that on the tenth anniversary of implementation of the Project, if facts and conditions not envisioned at the time of entering into this MOU are present, the parties will negotiate in good faith amendments to this MOU. If the parties cannot agree on whether conditions have changed necessitating an amendment and/or upon appropriate amendments to the MOU, such limited issues shall be submitted to an arbitrator or court, as the case may be, as provided above.

12. Successors and Assigns. This MOU shall bind and inure to the benefit of the successors and assigns of the parties.

13. Severability. The rights and privileges set forth in this MOU are severable and the failure or invalidity of any particular provision of this MOU shall not invalidate the other provisions of this MOU; rather all other provisions of this MOU shall continue and remain in full force and effect notwithstanding such partial failure or invalidity.

14. Force Majeure. All obligations of the parties shall be suspended for so long as and to the extent the performance thereof is prevented, directly or indirectly, by earthquakes, fires, tornadoes, facility failures, floods, drownings, strikes, other casualties, acts of God, orders of court or governmental agencies having competent

jurisdiction, or other events or causes beyond the control of the parties. In no event shall any liability accrue against a party, or its officers, agents or employees, for any damage arising out of or connected with a suspension of performance pursuant to this paragraph.

15. Counterparts. This MOU, and any amendment or supplement thereto, may be executed in two or more counterparts, and by each party on a separate counterpart, each of which, when executed and delivered, shall be an original and all of which together shall constitute one instrument, with the same force and effect as though all signatures appeared on a single document. In proving this MOU or any such amendment, supplement, document or instrument, it shall not be necessary to produce or account for more than one counterpart thereof signed by the party against whom enforcement is sought.

IN WITNESS WHEREOF the parties have executed this MOU the day and year first above written at Bakersfield, California.

BUENA VISTA WATER STORAGE DISTRICT

By: _____

By: _____

SEMITROPIC WATER STORAGE DISTRICT

By: _____

By: Gen. Mgr.

HENRY MILLER WATER DISTRICT

By: _____

By: Joe Hatje

KERN COUNTY WATER AGENCY

By: Adrienne J. Mathews

By: _____

KERN DELTA WATER DISTRICT

By: L. Mark Mulkay

By: L. Mark Mulkay

KERN WATER BANK AUTHORITY

By: _____

By: William Phillimore

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

BY: Hal Crossley

BY: Hal Crossley

WEST KERN WATER DISTRICT

BY: _____

BY: _____

REQUIRED ATTACHMENTS:

EXHIBIT A:	**MAP OF DISTRICT**
EXHIBIT B:	**NARRATIVE DESCRIPTION OF PROJECT FACILITIES**
EXHIBIT C:	**MAP OF KERN FAN AREA**

banking MOU.wpd

HENRY MILLER WATER DISTRICT

By:_____

By:_____

KERN COUNTY WATER AGENCY

By:_____

By:_____

KERN WATER BANK AUTHORITY

By:_____

By:_____

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

BY:_____

BY:_____

WEST KERN WATER DISTRICT

BY:_____

BY:_____

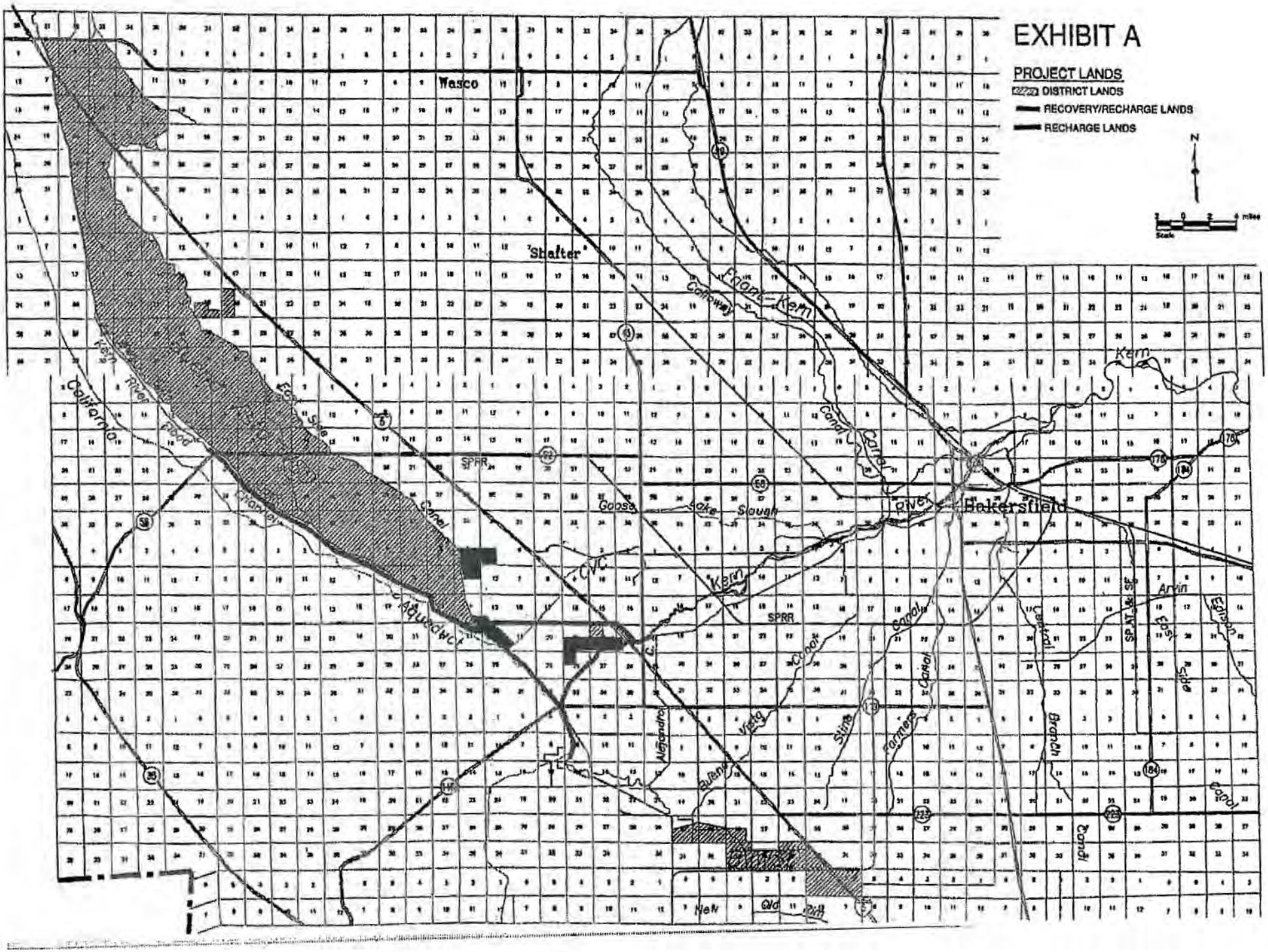


EXHIBIT A
PROJECT LANDS
DISTRICT LANDS
RECOVERY/RECHARGE LANDS
RECHARGE LANDS
N
Wasco
Shafter
Bakersfield
Kern
California
Aqueduct
Canal
River
Lake
Slough
Goose
Calloway
Farmers
Branch
SPRR
Scale

EXHIBIT B

PROJECT DESCRIPTION

Purposes

The primary water management objective of Buena Vista Water Storage District (Buena Vista) is to enhance water supplies for its landowners. Under the project, surface water will be stored in aquifers during times of surplus and recovered when needed either through district or landowner wells. Through its ongoing conjunctive use program, the District has stored, and will continue to store more water that can be beneficially used by its landowners. The new project involves the continuation and expansion of the conjunctive use program and the sale of a portion of its stored water that is surplus to its long-term needs.

Sources of Water

Kern River water, being Buena Vista WSD's primary supply water right, as well as other sources will be recharged. Such sources include: the Kern River, Friant-Kern, SWP, CVP, flood water and other sources that may be available from time to time.

Buena Vista has assessed its water needs for irrigation, its available water sources, and the amount of direct and in-lieu recharge that can occur effectively (i.e. be recovered and still be consistent with this MOU). It has concluded that at least 30,000 acre feet, as a long term average, is effective recharge that is surplus to its needs and can be recovered either directly, or through exchange of Buena Vista's SWP entitlement. Therefore, Buena Vista plans to sell a portion of its surplus water inside and/or outside the county.

Facilities

Buena Vista has historically recharged water on Project Lands as shown on Exhibit A. Recharge has also occurred through the delivery of surface water to landowners who would otherwise pump groundwater on "District Lands" and "Recovery/Recharge Lands" outside the District's boundaries. These activities will continue and may be expanded.

Of the approximately 50,000 acres that presently constitute Buena Vista "District Lands", all may be used for in-lieu recharge and some areas are suitable for direct recharge. In addition, the "Recharge Lands" and "Recovery/Recharge Lands" identified on Exhibit A may also be used for in-lieu and direct recharge.

It is proposed that water would be conveyed to and from project facilities using available capacity in any of the canals and conveyance facilities that may serve the Project including: the Cross Valley Canal, the River Canal, the Kern River, the Friant Kern Canal, the California Aqueduct, the Alejandro Canal, and the Main Canal/KWB Canal. Additional conveyance facilities may be constructed as future projects are developed.

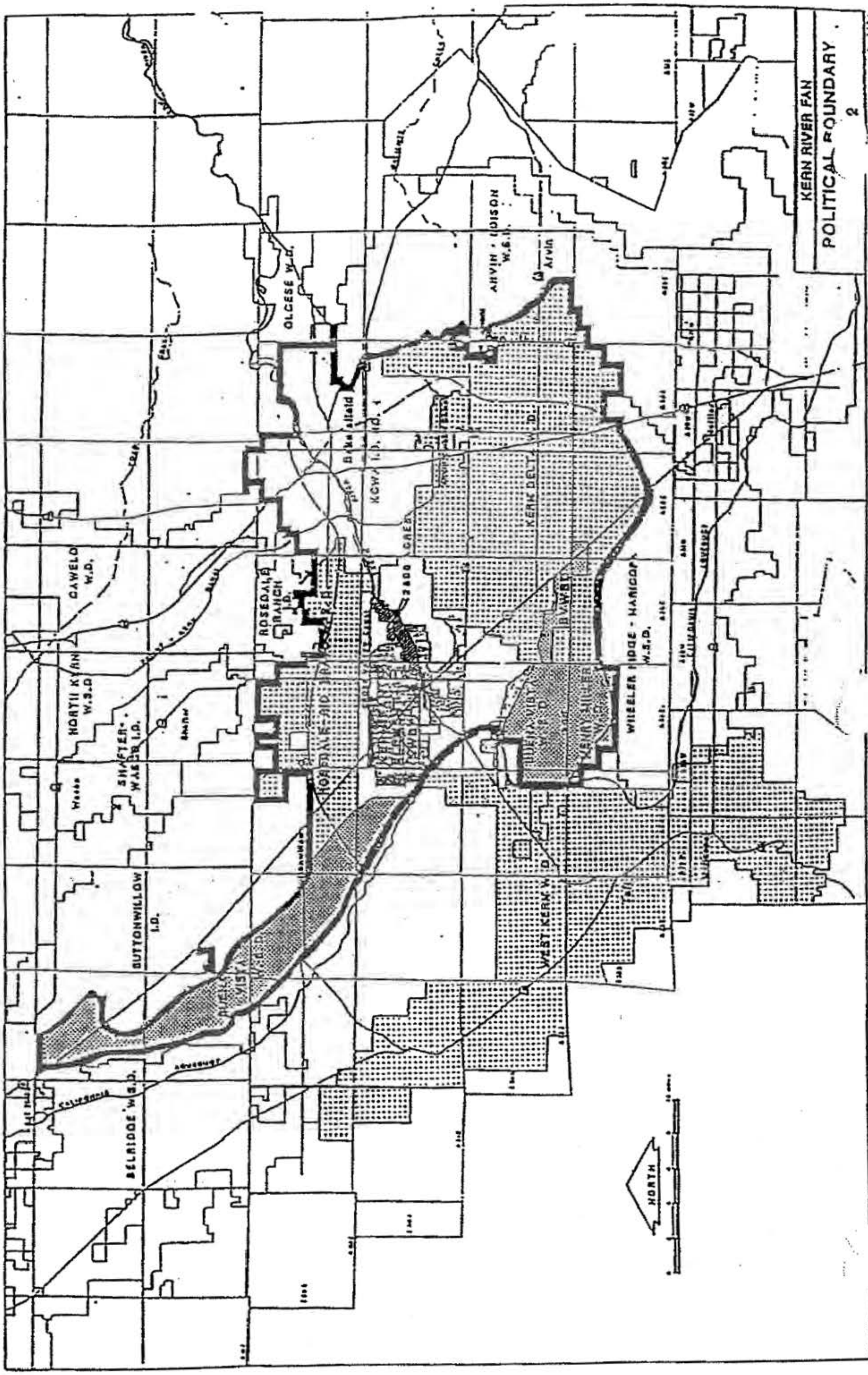
Buena Vista may construct additional recharge ponds, water conveyance facilities, and water wells. Currently the District has four District owned wells within the Buttonwillow service area. According to a 2000 survey, there are approximately 200 landowner wells. Another 20 District owned wells may be added within the "District Lands" and "Recovery/Recharge Lands" as shown on Exhibit A before the project is complete to provide adequate recovery capacity and the necessary operational flexibility to avoid or minimize adverse impacts. District/Landowner programs may include the use of landowner wells by District-wide reduction in surface supply allocations or by individual volunteer well lease programs. Once build out of the recovery facilities is complete, the recovery capacity will be maintained by constructing new wells to replace the capacity of older wells as they fail. New District owned wells shall be placed no

closer than one-third mile from any functioning wells outside the project boundaries. Project wells shall be located and operated so as to prevent significant non-mitigable adverse impacts to neighboring landowners.

Operation

The project shall be managed by the Buena Vista Water Storage District. Day-to-day operation of portions of the project may be contracted to other parties. Operation of the project shall be coordinated with adjoining projects.

Buena Vista has historically managed its groundwater and surface supplies to protect water users within the District and assure an affordable water supply of sufficient quality and quantity to meet future needs. This Project will not alter that mission. The District will maintain a groundwater storage account considered adequate to ensure that the District will have sufficient water in storage to meet its continuing in-district needs.


KERN RIVER FAN
POLITICAL BOUNDARY
2
OLCESE W.D.
ARVIN - EDISON W.S.D.
Arvin
KERN DELTA W.D.
CAWELO W.D.
NORTH KERN W.S.D.
SHAFTER - WASCO I.D.
BUTTONWILLOW I.D.
BELRIDGE W.S.D.
ROSEDALE RANCH I.D.
WHEELER RIDGE - MARICOPA W.S.D.
WEST KERN W.D.
NORTH

Appendix O

Paleontological Resources

(Submitted Separately Under the Rules of Confidentiality)

Appendix P

PG&E Company Will Serve Letter

Pacific Gas and Electric Company

Wholesale Marketing & Business Development

Via Mail and Email

December 14, 2010

Mr. John O'Brien
HECA Engineering
1500 Hughes Way – Pod B
Long Beach, CA 90810

Subject: Preliminary Application for Gas Service – Hydrogen Energy California

Dear Mr. O'Brien:

Pursuant to Hydrogen Energy's (Applicant) request, Pacific Gas & Electric Company (PG&E) provides Applicant with a response to its request for a Preliminary Application for Gas Service for a proposed Hydrogen Energy California project (Facility) to be located near Section 10, Township 30 South, Range 24 East, Kern County, California. This review is based upon a request for gas service of September 1, 2014, for a gas load of 3,120 MMBTU/Hr year round at a requested elevated service delivery gas pressure of 450 psig.

At no time does PG&E guarantee pressures above that which is specified in PG&E's Gas Rule 2 (7-inches water column). The pressures provided herein are based on computer models, which contain various assumptions and uncertainties, and therefore represent our best estimate of expected pressures available on your requested service date. The studies provided herein are based upon PG&E's current plans for the future design and operation of its gas transmission systems and existing residential load forecasts, but does not include any commercial or industrial loads that may request service from our system. Any change in the Applicant's requested gas loads, the way PG&E operates its gas system, or PG&E's customer load forecasts and investment plans may impact the pressures provided herein. Applicant is responsible for any changes required to their operations or equipment, now or in the future, due to lower delivery pressures from PG&E than stated herein. PG&E encourages the Applicant to request updated studies to ensure the information provided herein is still valid.

G-EG "All Other Customers" Rate Design:

Standard Facilities

PG&E proposes to tap its Line 300 near Magnolia Station and install approximately 10.2 miles of 12-inch steel pipe to an 8-inch ultrasonic meter at the Facility. Depending upon the final route, a smaller diameter pipeline may be feasible but would provide gas service at a lower pressure for the standard facilities design. For this estimate, PG&E has assumed a 12-inch pipeline design can provide Applicant with a minimum floating delivery pressure of 360 psig as measured downstream of a non-regulated meter set.

Special Facilities

In order to provide Applicant with an elevated service delivery pressure of 440 to 445 psig downstream of the meter set, PG&E would increase the diameter of the 12-inch steel pipeline to 16-inch.

In order to provide Applicant with an elevated service delivery pressure of 465 psig downstream of the meter set, PG&E would increase the diameter of the 12-inch steel pipeline to 24-inch.

Costs:

PG&E's estimated Applicant order-of-magnitude cost for the project, plus-or-minus 50 percent follows. Costs are based upon 2010 estimates and have not been adjusted for inflation of future project costs. These costs do not include disposal of hazardous material or associated environmental mitigation if required, or procurement of land rights.

PG&E notes that if Applicant's actual load is significantly less than the projected load upon which PG&E designs and installs upgraded facilities such that some of the work by PG&E was not necessary, PG&E reserves the right to treat the excess work as Excess Facilities as set forth in PG&E's tariffs. If that occurs, Applicant would be responsible for additional charges.

Special Facilities costs are in addition to the Standard Facilities costs and would be provided under a separate agreement. Special Facilities costs and service will be in accordance with PG&E Gas Rule 2. Should Applicant request a Special Facilities Design, a Special Facilities contract would be required which is in addition to the costs identified in the Standard Facilities Design.

Estimated Cost for Standard Facilities Design at Prevailing Service Delivery Pressure – 12-inch pipeline option	Costs +/- 50%
Tap Line 300	$70,000
Install 10.2 miles of 12-inch steel pipeline	$19,223,000
Install 8-inch ultrasonic meter	$750,000
Sub Total:	$20,043,000
Income Tax Contribution to Construction (ITCC @ 35%):	$7,015,000
Total:*	**$27,058,000**

*Costs do not include allowances, if any.

For the Special Facilities Design the following additional cost would be incurred by the Applicant.

Estimated Cost for Special Facilities Design at Elevated Service Delivery Pressure – 16-inch pipeline option	Costs +/- 50%
Incremental costs for 10.2 miles of 16-inch steel pipeline	$9,629,000
Income Tax Contribution to Construction (ITCC @ 35%):	$3,370,000
Cost of Service, Customer Financed One Time Payment Option	$7,563,000
Total Costs for Special Facilities:	**$20,562,000**

Special Facilities for the 24-inch alternative are not presented but can be estimated at Applicant's request. Again, the Special Facilities option is in addition to the Standard Facilities cost and would be served under a separate Special Facilities agreement.

"Backbone Level End-Use Customer" Rate Design

Line 300 is a backbone transmission pipeline, a connection to which may qualify Applicant as a Backbone Level End-Use Backbone Customer subject to meeting the conditions in PG&E's Gas Rule 1 definitions; http://www.pge.com/tariffs/doc/GR1.doc. PG&E now provides information on this rate design for PG&E to construct, own and operate the pipeline from the backbone pipeline to a meter set at Applicant's Facility. However, the Special Facilities costs provided could be reduced if Applicant would prefer to construct, own and operate its own pipeline from the facility to a meter set located near the backbone pipeline. Applicant should contact Mike O'Brien at the phone number listed below if Applicant is interested in the costs for an alternative meter site location.