PUNA GEOTHERMAL VENTURE

HAWAII

AN ORMAT COMPANY

ACKNOWLEDGMENT OF RECEIVING THE PUNA GEOTHERMAL VENTURE (PGV) EMERGENCY RESPONSE PLAN (ERP), HAZWOPER AND EMERGENCY ACTION PLAN (EAP) UPDATE

I have received an updated Emergency Response Plan (ERP), HAZWOPER and Emergency Action Plan (EAP) Update.

PRINT NAME: _____

TITLE: _____

AGENCY: _____

COMPANY NAME: _____

SIGNED: _____

DATE: _____

Please email a signed copy of this receipt to rquesada@ormat.com or fax to (808) 965-7254. Any questions please contact:

Ronald P. Quesada
Puna Geothermal Venture
Safety & Environmental Coordinator
(808) 965-2848

PUNA GEOTHERMAL VENTURE

An ORMAT Company

EMERGENCY RESPONSE PLAN

EMERGENCY RESPONSE PLAN

Puna Geothermal Venture Geothermal Facility

January 1, 2021

Geothermal Resource Permit: GRP 87-2

TMK: 1-4-01: por. 2, 3, por. 19 & 58

Puna, Hawaii

Island of Hawaii

Puna District

Puna Geothermal Venture

P.O. Box 30

Pahoa, Hawaii 96778

808.965.6233

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INTRODUCTION

Puna Geothermal Venture (PGV) is a geothermal powered electric generating project within a designated area of about 500 acres located on State Highway 132 and Pahoa-Pohoiki Roads (Figure 1-1 and Figure 1-2) . The project occupies about 25 acres of surface area consisting of production and injection wells and a power plant. A detailed description of the project facilities and operations is presented in Appendix A.

1.1 Objective

This Facility Emergency Response Plan (ERP) has been developed to comply with Condition #26 of Geothermal Resource Permit GRP 87-2, approved by the County of Hawaii Planning Commission on October 3, 1989, and in conformance with discussions with the County of Hawaii Civil Defense Agency (CDA), Hawaii Department of Health (HDOH), and the staff of the Hawaii State Emergency Response Commission (ERC). This ERP is specifically required to provide a plan of action to deal with facility emergency situations which may threaten the health, safety, and welfare of the employees and other persons in the vicinity of the project site. This plan is the basis of all actions by PGV's personnel and management staff in responding to these situations, and is updated appropriately when necessary. Site personnel also follow related site Safety, Environmental and Operating Procedures.

Any change to the plan is the responsibility of:

Puna Geothermal Venture
P.O. Box 30
Pahoa, Hawaii 96778

1.2 Scope

The required Scope of the ERP, as in Condition #26 of the GRP, items a through k, requires that the following elements be included as a minimum:

a. A description of the project facilities and operations, with site plans identifying areas of potential hazards, such as high pressure piping and the presence, storage and transportation of flammable or hazardous materials, such as lubrication or fuel oil, pentane, hydrogen sulfide, and sodium hydroxide;

b. A description of emergency services available off-site to respond to any emergency;

c. A description of the current on-site chain-of-command and responsibilities of project personnel in the event of an emergency; and,

d. A description of potential project emergency situations, such as loss of well control, chemical spills, hydrogen sulfide exposure, pipeline rupture, fires, contaminated solids, etc. identifying;

(i) technical data on the nature of the hazard (for example, the concentrations of hydrogen sulfide in the various areas and the hazard associated with these concentrations, the corrosive characteristics of the abatement chemicals), or any data regarding the possible aerial extent of each potential emergency situation;

(ii) the warning systems (such as hydrogen sulfide detectors) used to alert personnel of the hazard;

(iii) the location and use of equipment used to control the hazard (such as fire protection equipment or isolation valves) or repair hazardous equipment (such as welding equipment or casing sleeves), and safety equipment for personnel (such as respiratory packs), including identification of the personnel trained in the use of that equipment; and

(iv) provisions for the monitoring, detection, and inspection of wells and plant facilities for the prevention of emergency situations.

e. Provisions to address natural hazards (such as lava flows, earthquakes, and storms) that identify warning systems, control options, steps for securing and shutting down the facility, personnel evacuation, and notification to appropriate agencies;

f. The location and capabilities of available medical services and facilities and plans for treating and transporting injured persons;

g. Evacuation plans, including meeting points, personnel rosters, and escape routes;

h. Training requirements for personnel, including procedures for emergency shutdown, handling of emergency equipment, spill prevention, first aid and rescue, fire fighting procedures, and evacuation training;

i. Provisions for periodic emergency preparedness drills for personnel;

j. Detailed procedures to be used to facilitate coordination with appropriate federal, state, and county officials during and after any emergency situation; and,

k. Procedures to be used to identify and inform all residents within applicable distances of the project of the possible emergency situations, warnings, and responses in advance of commencement of project operation and the methods by which all individuals affected by a given emergency will be notified and evacuated, as necessary.

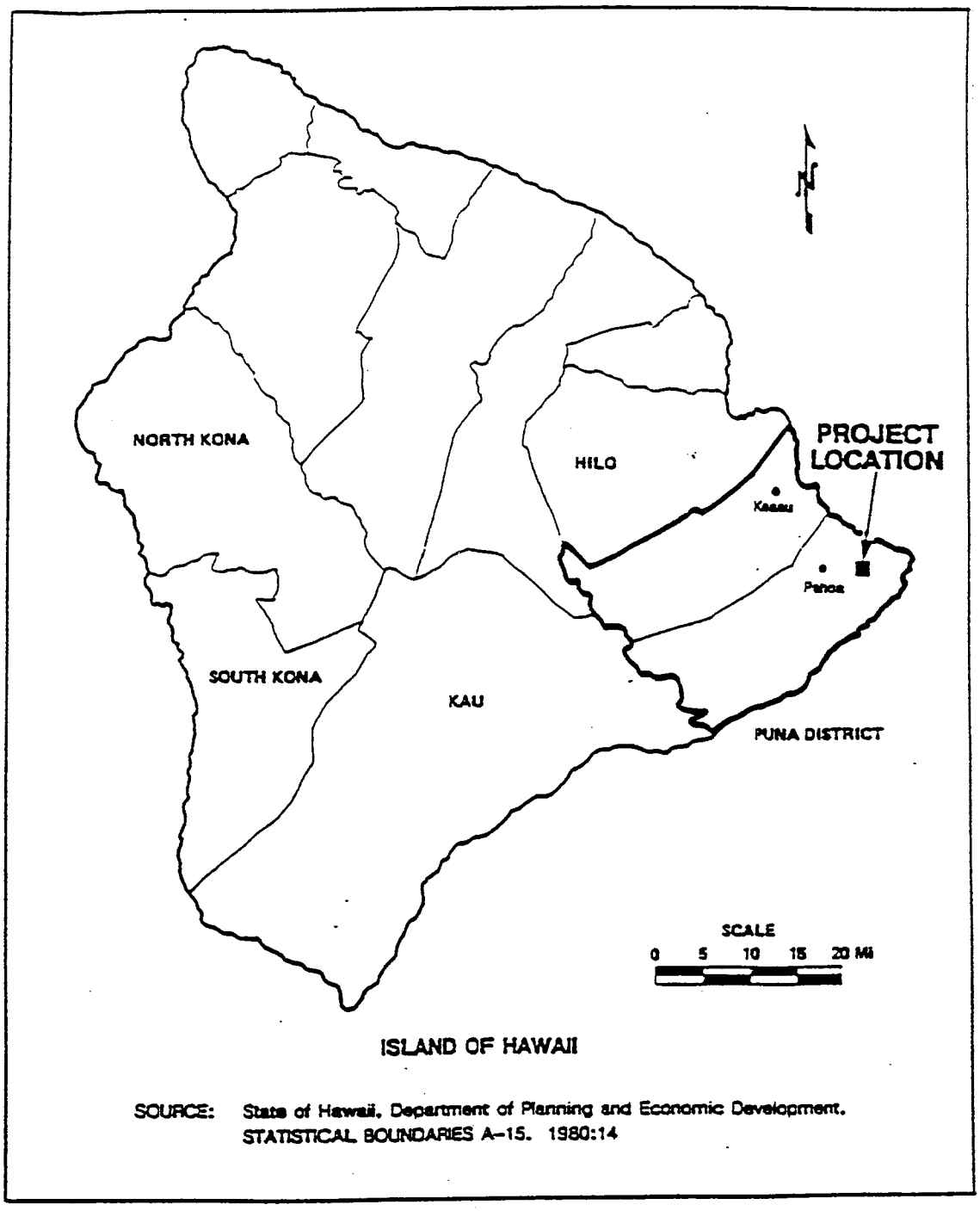
Table 1-1 identifies where the components of each of these GRP requirements are located in this document.

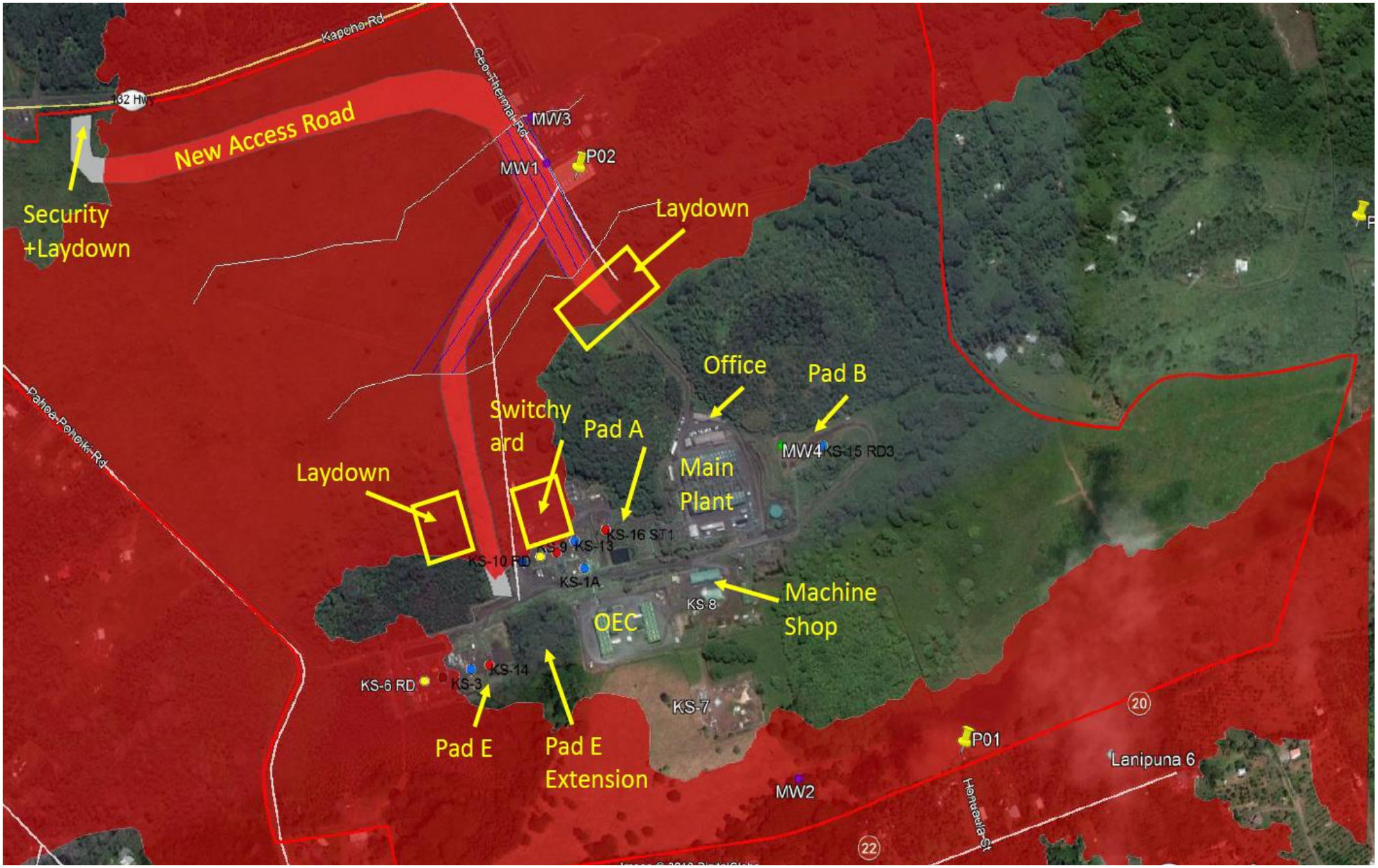
Table 1-1 Index of GRP Condition #26 Requirements in the Emergency Response Plan

a	A description of the project facilities and operations, with site plans identifying areas of potential hazards, such as high pressure piping and the presence, storage and transportation of flammable or hazardous materials such as lubrication or fuel oil, n-pentane, hydrogen sulfide, and sodium hydroxide;	Appendix A (A.1 - A.10.1) Section 4.2
b	A description of emergency services available off-site to respond to any emergency;	Section 4
c	A description of the current on-site chain-of-command and responsibilities of project personnel in the event of an emergency; and	Section 3
d	A description of potential project emergency situations, such as loss of well control, chemical spills, hydrogen sulfide exposure, pipeline rupture, fires, contaminated solids, etc. identifying;	Section 8
	(i) technical data on the nature of the hazard (for example, the concentrations of hydrogen sulfide in the various areas and the hazard associated with these concentrations, the corrosive characteristics of the abatement chemicals), or any data regarding the possible aerials extent of each potential emergency situation;	Section 8, Appendix F, Appendix G, Appendix H, Attachments 1-3
	(ii) the warning systems (such as hydrogen sulfide detectors) used to alert personnel of the hazard;	Section 4 Section 5 Section 6 Section 8 Appendix A
	(iii) the location and use of equipment used to control the hazard (such as fire protection equipment or isolation valves) or repair hazardous equipment (such as welding equipment or casing sleeves), and safety equipment for personnel (such as respiratory packs), including identification of the personnel trained in the use of that equipment; and	Section 4 Section 8
	(iv) provisions for the monitoring, detection, and inspection of wells and plant facilities for the prevention of emergency situations.	Appendix A Section 4
e	Provisions to address natural hazards (such as lava flows, earthquakes, and storms) that identify warning systems, control options, steps for securing and shutting down the facility, personnel evacuation, and	Section 5 Section 8

	notification to appropriate agencies;	
f	The location and capabilities of available medical services and facilities and plans for treating and transporting injured persons;	Section 4
g	Evacuation plans, including meeting points, personnel rosters, and escape routes;	Section 5
h	Training requirements for personnel, including procedures for emergency shutdown, handling of emergency equipment, spill prevention, first aid and rescue, fire fighting procedures, and evacuation training;	Section 6, Appendix B, C
i	Provisions for periodic emergency preparedness drills for personnel;	Section 6 Section 7
j	Detailed procedures to be used to facilitate coordination with appropriate federal, state, and county officials during and after any emergency situation; and,	Section 3, Appendix D
k	Procedures to be used to identify and inform all residents within applicable distances of the project of the possible emergency situations, warnings, and responses in advance of commencement of project operation and the methods by which all individuals affected by a given emergency will be notified and evacuated, as necessary.	Section 3.3

Figure 1.1 Site Location Map




Kapoho Rd
Geo-Thermal Rd
162 Hwy
New Access Road
MW3
P02
MW1
Security
+Laydown
Laydown
Office
Pad B
Switchy
ard
Pad A
MW4
KS-15 RD3
Main
Plant
Laydown
KS-16 ST1
KS-9
KS-13
KS-10 RD
KS-1A
Machine
Shop
KS-8
OEC
KS-14
KS-6 RD
KS-3
KS-7
Pad E
Pad E
Extension
P01
Lanipuna 6
MW2
Pahoa-Pohoiki Rd
Honuaula St
20
22

2 REGULATORY AUTHORITY AND DEFINITIONS

2.1 Regulatory Authority

As discussed above in Chapter, this ERP has been developed specifically to satisfy Condition No. 26 of GRP 87-2, which requires a plan of action to deal with emergency situations which may threaten the health, safety, or welfare of the employees and other persons in the vicinity of the proposed project site. GRP 87_2 presents fifty other conditions of approval which, among other things, set limits on the amount of several pollutants that PGV may emit into the environment, and also set limits on the ambient (environmental) concentrations of these pollutants which result from PGV's operations. So that the PGV Project will not become a nuisance to the community, these permitted emission limits and ambient concentrations are intentionally set at very low levels.

PGV has also been issued three permits by the Hawaii State Department of Health (HDOH). They limit the emissions of several pollutants, principally hydrogen sulfide, and limit the concentration levels that these pollutants can reach in the ambient environment as a result of PGV's operations. The operation of the PGV well field is regulated by the Permit to Operate, (PTO) # P833-1524, issued by the HDOH. PTO # P834-1582 has been issued by HDOH to regulate the operation of the Project Power Plant. Well construction, when underway, is regulated by a Non-covered Source Permit (NSP) # 0008-01-N issued by HDOH.

Exceeding either the emission limits or ambient concentrations set in these permits, either during otherwise permitted operations or during upset conditions, would be considered a violation of the permits and would subject the permit holder (PGV) to the penalties described in the permits and applicable laws and regulations. PGV is generally also required to immediately respond to exceedances of the permitted emission limits or ambient concentrations by reducing or eliminating the source of the exceedance, so that the project permitted operations are reduced to within permitted limits.

Some upset conditions, although they do not result in the emission or ambient concentration of any pollutant above the permitted level and do not pose any threat to the health, safety, or welfare of the persons in the vicinity of the community, may nonetheless result in the need for one or more of the County normal emergency response organizations (police, fire department, etc.) to respond to the site. The County of Hawaii Plan for Emergency Preparedness, Vol. III, Disaster Preparedness and Response, recognizes these as "everyday" emergency situations, the type of emergency situations which frequently arise in a community and which are handled routinely by normal emergency services. However, should the exceedance of the permitted limits or concentrations during an upset or accident be so great as to endanger, or potentially endanger, the public health, safety, or welfare, an emergency response by the Hawaii County Civil Defense Agency (CDA) and/or other County emergency response organizations would likely occur.

2.2 Definitions

Normal Plant Operations	As defined in the Non-covered Source Permit (NSP), a condition when both the power plant and geothermal well field are operating normally, that is, when the power plant is operating without any upsets, equipment failure, malfunction or which is otherwise operating normally and when no well drilling, flow testing, or venting activities are occurring and where the completed wells are not experiencing any equipment failure or malfunction and are either shut-in, being used as an injection well, or connected to a sound geothermal resource distribution system.
Routine Operations	Those operations over and above normal operations, including, but not limited to, periods of well drilling, well flow testing, well or pipe clean out, but not including periods of well or power plant upset, failure or malfunction.
Upset Conditions	Those situations which are not normal or routine operations.
Permitted Operations	Those normal, routine, and upset operations and/or conditions which are permissible under permits granted by the Hawaii County Planning Commission (Geothermal Resource Permit GRP 87-1) and the Hawaii Department of Health (Permit to Operate Permits No. P-833-1524 and No. P-834-1582), whether by explicit statement or through producing impacts which do not exceed stated limits.
Permitted Upset Conditions	Those situations which are not normal or routine operations, but which are otherwise anticipated and approved by the appropriate regulatory agencies, such as steam release through the emergency steam release facility; or those circumstances, such as turbine trips, minor leaks, component malfunctions, etc., which are not expressly approved in any permits, but the impacts of which fall within permitted limits and do not have the potential to produce emergency situations which could threaten the health, safety, or welfare of the employees and other persons in the vicinity of the proposed project site.
Ambient Level	That concentration of a pollutant, such as hydrogen sulfide, or level of an environmental factor, such as noise, which is measured or predicted at a specified point or points in the air or environment.

Emission Level	That quantity of a pollutant or environmental factor which is, or could be, discharged into the environment.
Facility Emergency Situation	An upset condition which results in the need for immediate action by facility operation personnel to restore normal or routine operations.
Everyday Emergency Situation	As defined by the County of Hawaii Plan for Emergency Preparedness, Vol. III, Disaster Preparedness and Response, those emergency situations which are handled routinely by project personnel and/or normal emergency services such as police, fire, emergency medical service, public works, or utilities.
Hazard	Any situation that has the potential for causing damage to life, property, or the environment.

1 NOTIFICATION AND CHAIN-OF-COMMAND

1.1 Notification Lists

Table 3-1 provides phone contacts for County, State, and Federal government agencies, PGV staff, and the project 24-hour information line.

1.2 PGV Emergency Response Organization

Table 3-2 illustrates the chain of command and emergency response team that is in effect to deal with site emergencies and summarizes the responsibilities of the site staff during an emergency situation.

TABLE 3-1 EMERGENCY NOTIFICATION CONTACT LIST

INTERNAL

POSITION	ADDRESS	BUS. PH.	AFTER HOURS	MOBILE PH.
1. Plant Manager Jordan Hara	17-4487 Huina Road Kurtistown, HI 96760	808-965-2835	808-896-8551	808-896-8551
2. Vice President, U.S. Operations Ohad Zimron	Ormat Technologies, Inc. 6225 Neil Road Reno, NV 89511	775-356-9029	775-240-7102	775-240-7102
3. Director of Hawai'i Affairs Michael Kaleikini	1134 Ainalako Road Hilo, HI 96720	808-965-2838	808-959-1422	808-936-8161
4. Operations Supervisor Zachery Adachi	17-102 N Ipuaiwaha Keauu, HI. 96749	808-965-2842	808-936-3242	808-936-3242
5. Safety & Environmental Manager Ronald Quesada	15-1643 Lokelani Street Kea'au, HI. 96749	808-965-2828	808-982-3948	808-430-8679

PGV EMERGENCY EXTERNAL CALL LISTS

EXTERNAL (PRIMARY)

POSITION	BUS. PH.	AFTER HOURS	MOBILE PH.
1. Civil Defense Agency	935-0031	935-3311	
2. Department of Health David Wong Honolulu Clean Air (Darin Lum) Drinking Water (Norris Uehara) Noise (James Toma) Haz Evaluation/Emergency Resp. 24 Hour - Operator	 808-586-4200 1-808-586-4200 1-808-586-4258 1-808-586-4700 933-9921	 1-808-734-2161 1-808-247-2191	
3. Fire Department/Emergency 4. Fire Department/Pahoa	911 965-2708		
5. Police Department Pahoa	935-3311 966-7432	935-3311 966-7432	
6. Dept. of Land & Natural Resources Hilo Honolulu (Suzanne Case)	961-9588 808-587-0266 808-587-0227	961-6586	987-9184

EXTERNAL (SECONDARY)

POSITION	BUS. PH.	AFTER HOURS	MOBILE PH.
1. Security: Ron Quesada	**808-965-2848**	**808-965-2848**	**808-430-8679**
2. Monitoring: Matthew Seymour	**1-808-371-2560**		
3. HELCO	**969-0411**	**969-0411**	
4. *PGV Response Line	**965-8843**		
5. **PGV Information Line	**934-9072**	**934-9072**	
6. For reportable quantities: (H_2S $\geq$ 100 lbs; caustic $\geq$ 1,000 lbs.)			
a. Hawaii State Emergency Response Commission (HSERC)	**1-808-586-4249**	**1-247-2191**	
b. Hawaii County Fire Department	**961-6022**	**961-6022**	
c. Hawaii County Division of Industrial Safety (LEPC)	**936-0858**		
d. National Response Center	**1-800-424-8802**	**1-800-424-8802**	

* Call this number to give current information to the operators at the response line answering service.
** PGV Information Line: CSC will change message to update situation.
*** For emergencies, call 911

3.3 EMERGENCY RESPONSE TEAM

	PRIMARY	ALTERNATES
Incident Commander (Emergency Coordinator)	**Ron Quesada** **Jordan Hara** **Fire Department**	**Zach Adachi**
Hazardous Materials Specialists	**Ron Quesada** **Jordan Hara** **Zach Adachi**	**Guy Ha** **Gary Dahl** **Stan Magnuson**
Hazardous Material Technicians	**Zach Adachi** **Josh Serrao** **Paul Fernandez** **Guy Ha** **Alberto Velazquez** **Randy Teeples** **Mark Nakasato** **Lyle Olivar** **Todd Gaskin** **Joseph Andrade**	**Gary Dahl** **Jack "Kaliko" Lee**
Media Coordinator/Spokesperson	**Mike Kaleikini**	
First Responder Awareness Level	**All Personnel**	
Post Emergency Responder	**Ron Quesada** **Jordan Hara**	**Outside Contractors** **Environmental Firms**
Safety Official	**Ron Quesada**	

TABLE 3.3.1 PUNA GEOTHERMAL OPERATIONS STAFF RESPONSIBILITIES DURING EMERGENCY SITUATIONS

Should an emergency situation occur, specific management personnel will assume leadership roles in the emergency response scenario. These key positions and basic responsibilities are as follows:

PLANT AND WELL FIELD OPERATIONS: (No Well Drilling)

MANAGEMENT POSITION	EMERGENCY TITLE	RESPONSIBILITIES
Plant Manager	Incident Commander	-Will oversee broad implementation of the Emergency Plan. -Will oversee effective and timely communications with Government Agencies, Civil Defense and other key personnel. -Assures site personnel are prepared and trained to respond to emergency situations as identified in the plan. -Reviews assessments of response actions and assures modification of plan as necessary. -Manages the site emergency response activities and related personnel/responders. -Implements the Emergency Response Plan -Will assess danger/situation and account for personnel. -Assures first aid/medical attention is given. -Will establish command center -Will assure all non-essential personnel are out of danger zone. -Coordinates and directs response actions and response personnel. -Coordinates actions, as applicable, with outside support groups (fire, police, ambulance/medical, cleanup teams etc.) -Advises General Manager. -Arranges transportation of personnel. -Confirms reporting/notifications are implemented timely. -Directs contractor support

-Assures shut off of all unnecessary electricity, flammable fluid pipes etc.
-Directs removal, control, or relocation of at risk chemicals.
-Directs security forces and assures traffic and property control.
-Arranges removal of equipment, records etc.
-Assures only trained and qualified personnel respond and conduct themselves in accordance with safety and environmental procedures.
-Determines when emergency is under control.

-Arranges and directs additional air monitoring, where pertinent.
-Assesses response actions and modifies procedures as needed.

Production & Maintenance Manager
Safety and Environmental Coordinator

Support to Incident Commander

Manage personnel actions within in their departments and Manager assures they follow incident directives.
-Serve as an alternate Incident Commander, if pre-qualified.

Hazardous Material Specialists/Technicians

Providing ongoing monitoring of local environmental conditions during Task Force operations.
• Providing an initial and ongoing survey for and identification of the presence of hazardous materials at search and rescue sites.
• Implementing defensive mitigation practices when indicated.
• Directing emergency decontamination procedures for any Task Force member or victim.
• Provide assistance to medical personnel for information regarding chemical exposure and injuries.
• Documenting all related information.
• Adhering to all safety procedures.
• Providing accountability, maintenance, and minor repairs for all issued equipment.
• Performing additional tasks or duties as assigned during a mission.
• Ensuring Safety Data Sheets (SDS) are provided for all hazardous materials carried or used by the Task Force; and
• Ensuring all specialized equipment is maintained and

	calibrated according to the manufacturer's specifications.
Safety and Environmental Coordinator	-Assure required government notifications have been made and aid. -Conduct response actions as directed by IC. -Assist incident commander -Direct actions to mitigate spills or releases of chemicals/hazardous substances. -Direct decontamination procedures. -Assists IC with level of response determination.

Selected Maintenance	First Responders	-Follow the emergency plan as trained.
Operations Personnel	Operations Level or HazMat. Technicians	-Follow directives of the IC and Haz Mat Specialist -Assure all Personal Protection Equipment is inspected prior to use and donned as required. -Conduct additional monitoring as requested and make initial verbal notifications as plan designates

FOR DRILLING EMERGENCY RESPONSE

During drilling activities, designated Well field personnel will take the required actions as directed by the emergency plan, drilling plans, procedures and as per technical training. The General Manager and Site Manager will assure drilling personnel are informed and trained.

Drilling Superintendent	-Assure response procedures are current and relevant. -Assure personnel are trained and assigned to response tasks. -Supervise drilling response. -Coordinate drilling crew response. -Initiate additional monitoring as appropriate. -Assure all required notifications are made immediately.

	-Assure personnel don appropriate personal protective equipment. -Inspect wells and related equipment for damage.
Well field Management Consultant	-Coordinate plan activities with Drilling Superintendent.

TABLE 3.3.2 PLANT PERSONNEL MEDICAL DUTIES

All PGV response team members are trained to provide CPR/AED and basic first-aid in a medical emergency up to their level of training while awaiting arrival of emergency medical service (EMS) personnel.

3.4 Notification to Public

GRP Condition #26 (k) requires PGV to outline:

1. "Procedures to be used to identify and inform all residents within applicable distances of the project of the possible emergency situations, warnings, and responses, in advance of commencement of the project, and,"

2. "The methods by which all individuals affected by a given emergency will be notified and evacuated, as necessary."

PGV considers that within the context of this condition that:

1. The applicable distances from the project to be the 3,500 feet from the Project's 500 acres leasehold boundary, as specified in the GRP.

2. Commencement of project operation is considered as the beginning of drilling of the first geothermal well on the site,

3. The CDA will have the responsibility for, and be in charge of, any notification and evacuation of the public arising from emergency conditions existing at the site,

4. This ERP identifies the possible emergency situations, warnings and responses and the methods by which all individuals affected by a given emergency will be notified and evacuated, as necessary, and,

5. Informing all residents within applicable distances of the project of the presence of the ERP constitutes compliance with Condition #26 (k), and,

6. The public will be informed of the presence of the ERP by (1) announcement in the local newspapers, and (2) receipt of written letters to all residents within the applicable distance as noted above.

7. These notification events will occur within one week after the CDA has provided approval of this ERP in advance of commencement of project operation.

3.3.1 Public Notification During Nuisance/Disturbance Situations

PGV, in conformance with conditions of the GRP and the Power Plant and Well Field PTOs, has established a 24-hour information line for use by the public. PGV recognized that, at times, nearby residents may have questions or concerns related to facility activities. In some situations, these conditions could be perceived by the public as potentially related to an emergency condition. In these instances, individuals may call the PGV 24-HOUR INFORMATION LINE. The caller will hear recorded information on current plant activities. If this information is not sufficient the individual may call PGV's 24-hour response line. The caller will be asked to provide the following information:

1) The general description of the situation, location and any other relevant information.
2) The caller's name and contact phone number and/or address.

All calls and their respective conversations will be logged. The PGV person-in-charge will be immediately notified of an inquiry or complaint that could be related to a facility emergency situation. Corrective actions, if any, will be taken to appropriately rectify any condition which is in violation of the GRP or NSP conditions or could potentially magnify into an emergency situation.
Table 3-3 identifies the response PGV will take to deal with requests for information and complaints when they come from the public either in writing or over the 24-hour response line.

PGV will not contact CDA when a complaint is received unless there is a potential emergency condition at the site.

4.0 RESPONSE FACILITIES

4.1 Emergency Facilities Available Off-Site

Figure 4-1 shows the location of facilities available in Pahoa, Keaau, and Hilo that can respond during on-site or off-site emergencies. Table 4-1 lists the emergency response and medical facilities that could reasonably be expected to provide support if a facility emergency arose.

4.2 On-Site Safety Facilities

Figures 4-2 and 4-3 show the power plant and wellpad potential hazard areas, respectively. Locations of on-site safety equipment relative to the hazard areas are clearly marked. All response and safety facilities have been located so as to be close to the potential hazard area yet isolated from the immediate impact of the hazard during a facility emergency situation (such as placing air packs in elevated areas where H_2S would not collect). Table 4-2 lists the types and numbers of safety and first aid equipment located in the wellpad, power plant and staging areas of the project. Table 4-3 lists the on-site hydrogen sulfide detection equipment. More detailed descriptions of the on-site safety equipment are presented in Appendix A.

4.3 On-Site Meeting Points

On-site meeting points are described in Section 5.1 and shown in Figure 5-1. The primary on-site meeting place will be the control building. This site is located upwind from well field and power plant operations under prevailing wind conditions. The control building will contain primary communications equipment (telephones, radio base station, etc.) and other emergency equipment along with the plant process controls. These factors make it the logical meeting area. If the control building cannot be used for any reason, site personnel will proceed along the emergency route entrance guard shack through the entrance road. If this area is inaccessible or unsafe, site personnel will proceed by way of alternate emergency route to the clearing at the intersection of Kapoho and Pohoiki Roads.

OFF-SITE EMERGENCY FACILITY CAPABILITIES

LOCATION	DISTANCE FROM SITE	FIRE	POLICE	MEDICAL
PAHOA	3 MILES	1 ENGINE 1 TANKER 6 FIREFIGHTERS	2 POLICE OFFICERS	1 AMBULANCE
KEAAU	14 MILES	1 ENGINE 1 TANKER 6 FIRE FIGHTERS	1 RANKING OFFICER 6 POLICE OFFICERS	1 AMBULANCE
HILO	20 MILES	KAWAILANI STATION 1 ENGINE 4 FIREFIGHTERS	10 OFFICERS	HILO HOSPITAL 12 EMERGENCY ROOMS 8 OPERATING ROOMS 166 BEDS 1 DOCTOR (24 HOURS) 2 AMBULANCES
		CENTRAL STATION 1 ENGINE 1 TANKER 11 FIREFIGHTERS		
		WAIAKEA STATION 1 ENGINE 1 HEAVY RESCUE RIG 1 HELICOPTER 5 FIREFIGHTERS		DOES NOT HANDLE SERIOUS BURNS
		PUNA DISTRICT HAWAIIAN PARADISE PARK 1 ENGINE FIREFIGHTERS ON CALL		
		HAWAIIAN BEACHES 1 ENGINE FIREFIGHTERS ON CALL		

ON-SITE EMERGENCY AND SAFETY EQUIPMENT

LOCATIONS	FIRST AID	SCBA	FIRE EXTINGUISHERS	EYE WASH	O_2 KITS
Wellpad A	0	2	2	1	2
Wellpad E	1	2	2	1	1
Expansion Plant	1	2	8	1	1
Power Plant	3	8	54	3	4

LOCATIONS	FIRST AID	AIR PACKS	FIRE EXTINGUISHERS	EYE WASH	O_2 KITS
Wellpad (during drilling activity)	3	12*	10	7	2

***Three additional air packs are located as follows:**
One each in CSC, Training Unit in CSC and operation truck.
****Hoses, special/protective clothing, extra breathing cylinders and spill/leak response equipment are located at various points throughout the plant and well field area.**

ON-SITE HYDROGEN SULFIDE DETECTION EQUIPMENT

Locations	Jerome 631-X	Industrial Scientific ITX	Industrial Scientific PMP	Det-Tronics U/88	Monitor Labs
Well Pad A				8	
Well Pad E				2	
Power Plant	4	1	17	25	
Project Boundary					3

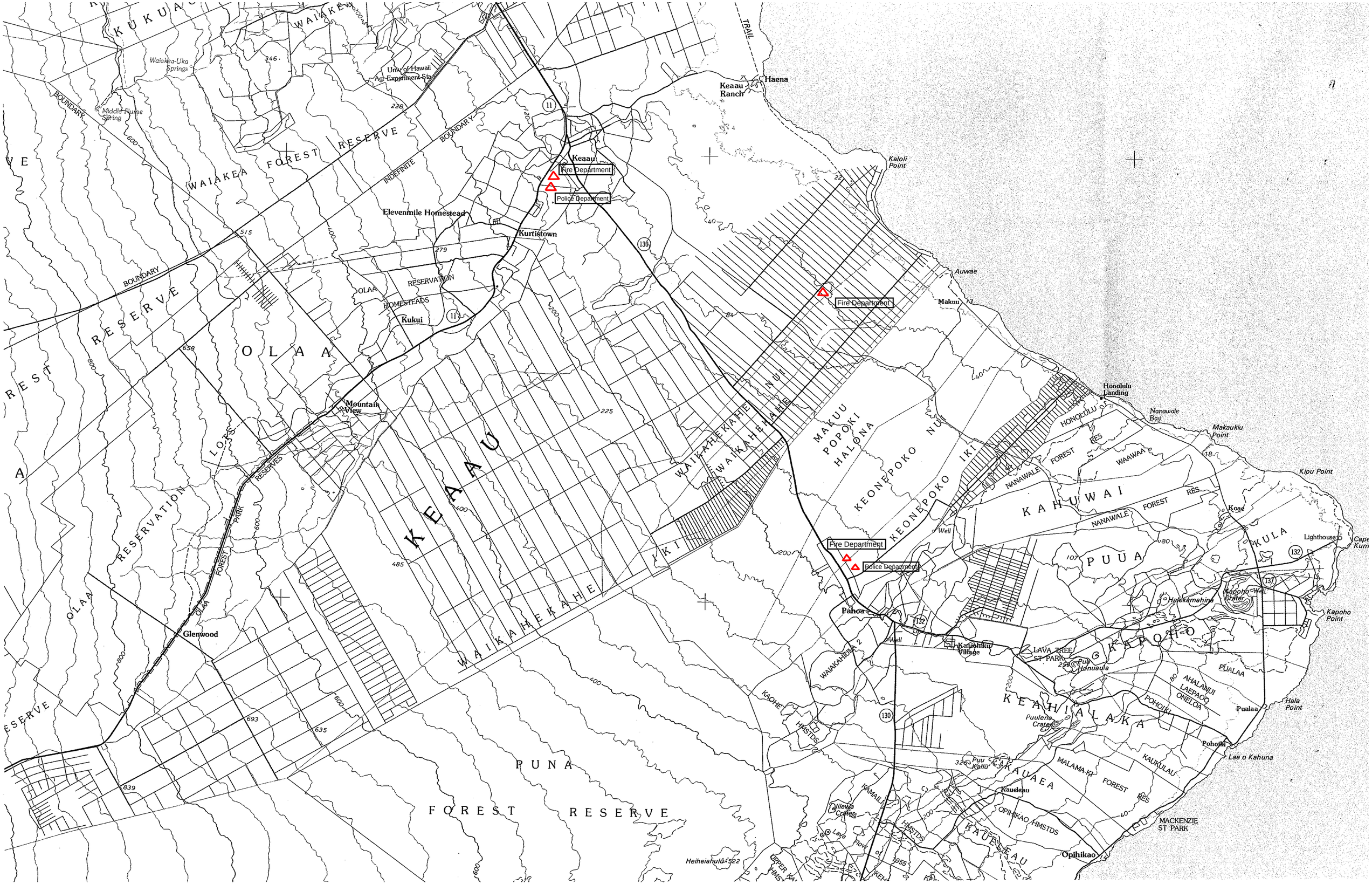
1. **Jerome 631-X Portable H_2S Monitor**
2. **Industrial Scientific ITX - Portable H_2S Monitor**
4. **Det-Tronics U88/U8000 Fixed H_2S Monitor**
5. **Monitor Labs Model 8780 H_2S Detector**

ON-SITE PORTABLE PENTANE, FIXED FIRE AND GAS DETECTION EQUIPMENT

Locations: Portable Detectors	Jerome 631-X Portable H2S Monitor	H2S Personal Monitors	H2S Personal Monitors	Industrial Scientific ITX
CSC Building	4	4	Each Employee	4

Locations:	Fixed Combustible Gas Detectors
OECs	10
VRU	2
NCG	5
WellPad A South & East	3
Pentane Storage Tank	1
Shop Lanai	1

Note: All Fixed Detection devices are hard wired to the Control Rooms panel


Waiakea-Uka Springs
Middle Fume Spring
Univ of Hawaii Ag Experiment Sta
WAIAKEA FOREST RESERVE
BOUNDARY
INDEFINITE
Elevenmile Homestead
Kurtistown
Keaau
Fire Department
Police Department
Haena
Keaau Ranch
Kaloli Point
Auwae
Makuu
Honolulu Landing
Nanawale Bay
Makaukiu Point
Kipu Point
Koae
Lighthouse
Cape Kumu
OLAA RESERVATION
OLAA HOMESTEADS
Kukui
Mountain View
Glenwood
KEAAU
WAIKAHEKAHE
MAKUU
POPOKI
HALONA
KEONEPOKO
KAHUWAI
PUUA
KULA
Halekamahina
Kapoho Crater
Kapoho Point
Pahoa
Kapohiki Village
LAVA TREE ST PARK
KAPOHO
KEAHIALAKA
Puu Honuaula
Puulena Crater
PUALAA
AHALANUI
LAEPAOO
ONELOA
POHOIKI
Pualaa
Hala Point
Lae o Kahuna
KAUAEA
KAUKULAU
MALAMA-KI FOREST RES
Kauleau
OPIHIKAO HMSTDS
Opihikao
MACKENZIE ST PARK
PUNA FOREST RESERVE
Heiheiahulu
Puu Kahu
Lava Flow
Kaohe
WAIAKAHEKA 2
NANAWALE FOREST RES
WAAWAA
HONOLULU
TRAIL

ON-SITE EMERGENCY AND SAFETY EQUIPMENT

LOCATIONS	FIRST AID	AIR PACKS	FIRE EXTINGUISHERS	EYE WASH	O_2 KITS
Wellpads	**0**	**4**	**3**	**1**	**2**
Power Plant	**3**	**8**	**54**	**3**	**4**

LOCATIONS	FIRST AID	AIR PACKS	FIRE EXTINGUISHERS	EYE WASH	O_2 KITS
Wellpad (during drilling activity)	**3**	**12***	**10**	**7**	**2**

***Three additional air packs are located as follows:**
One each in CSC, Training Unit in CSC and operation truck.
****Hoses, special/protective clothing, extra breathing cylinders and spill/leak response equipment are located at various points throughout the plant and well field area.**

ON-SITE HYDROGEN SULFIDE DETECTION EQUIPMENT

Locations	Jerome 631-X	Industrial Scientific ITX	Industrial Scientific PMP	Det-Tronics U/88	Monitor Labs
Well Pad A				8	
Well Pad E				2	
Power Plant	4	1	17	25	
Project Boundary					3

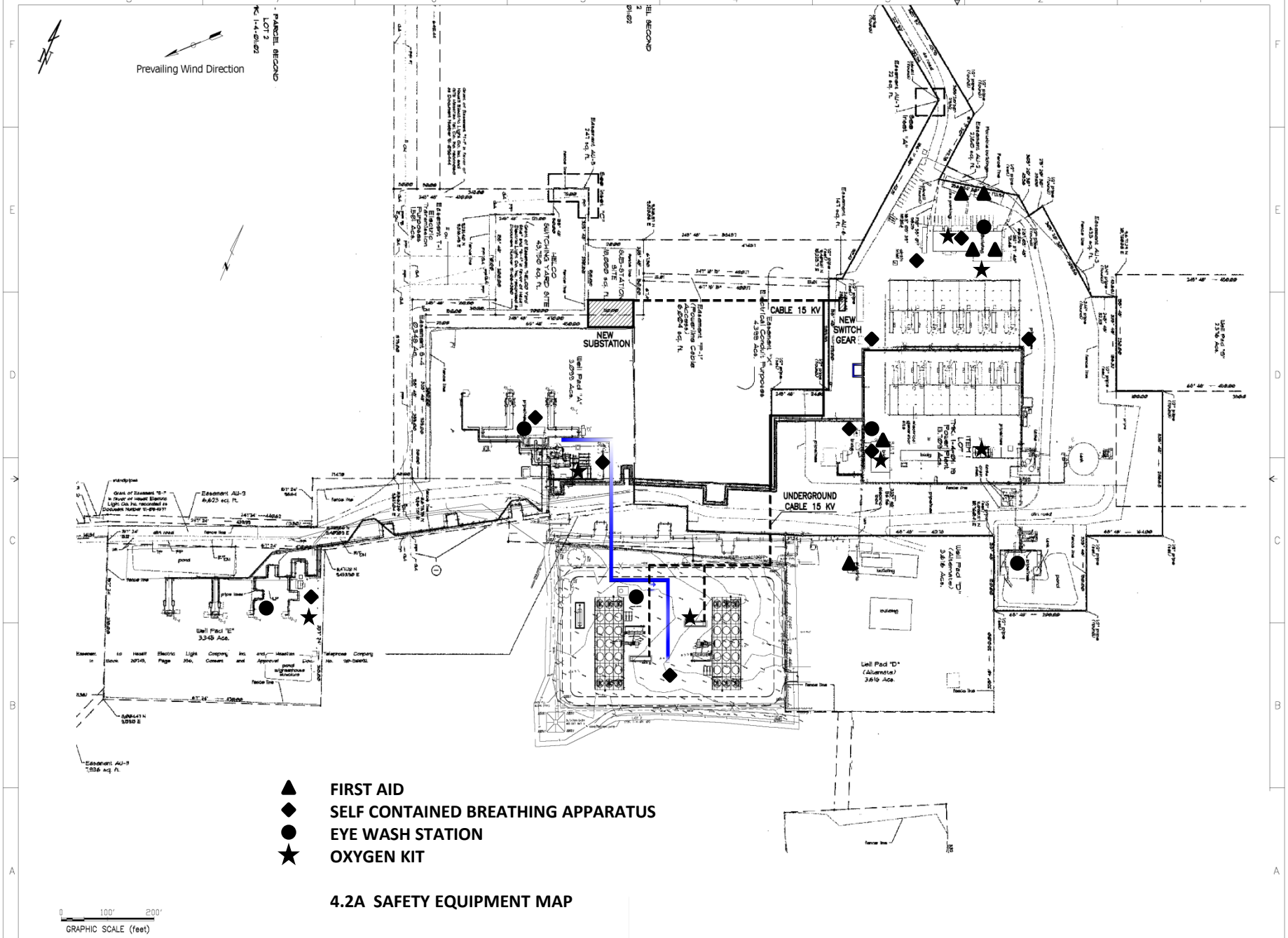
1. Jerome 631-X Portable H_2S Monitor
2. Industrial Scientific ITX - Portable H_2S Monitor
3. Industrial Scientific PMP - Portable H_2S Monitor
4. Det-Tronics U88/U8000 Fixed H_2S Monitor
5. Monitor Labs Model 8780 H_2S Detector

ON-SITE PORTABLE PENTANE, FIXED FIRE AND GAS DETECTION EQUIPMENT

Locations: Portable Detectors	MSA Exsplosivmeter	AIM 3-300 (3 Gas)	Sensit HXG-3	Industrial Scientific ITX
CSC Building	3	1	2	1

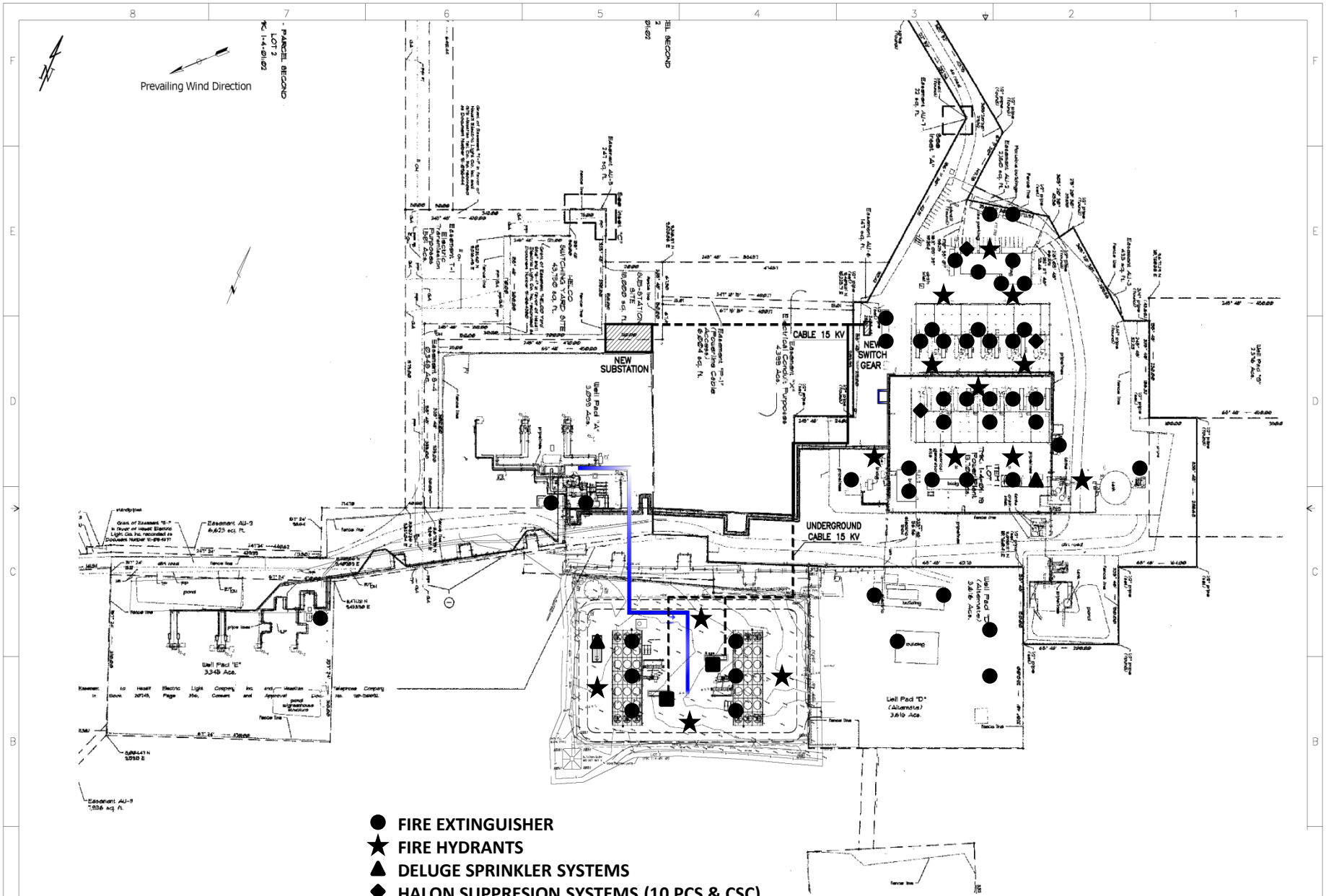
Locations:	Fixed Combustible Gas Detectors	Fixed Fire
OECs	10	
VRU	2	
Diesel Fire Pump		
Emergency Diesel Generator		
Pentane Storage Tank	1	
Shop Lanai	1	

Note: All Fixed Detection devices are hard wired to the Control Rooms Supervisory panel



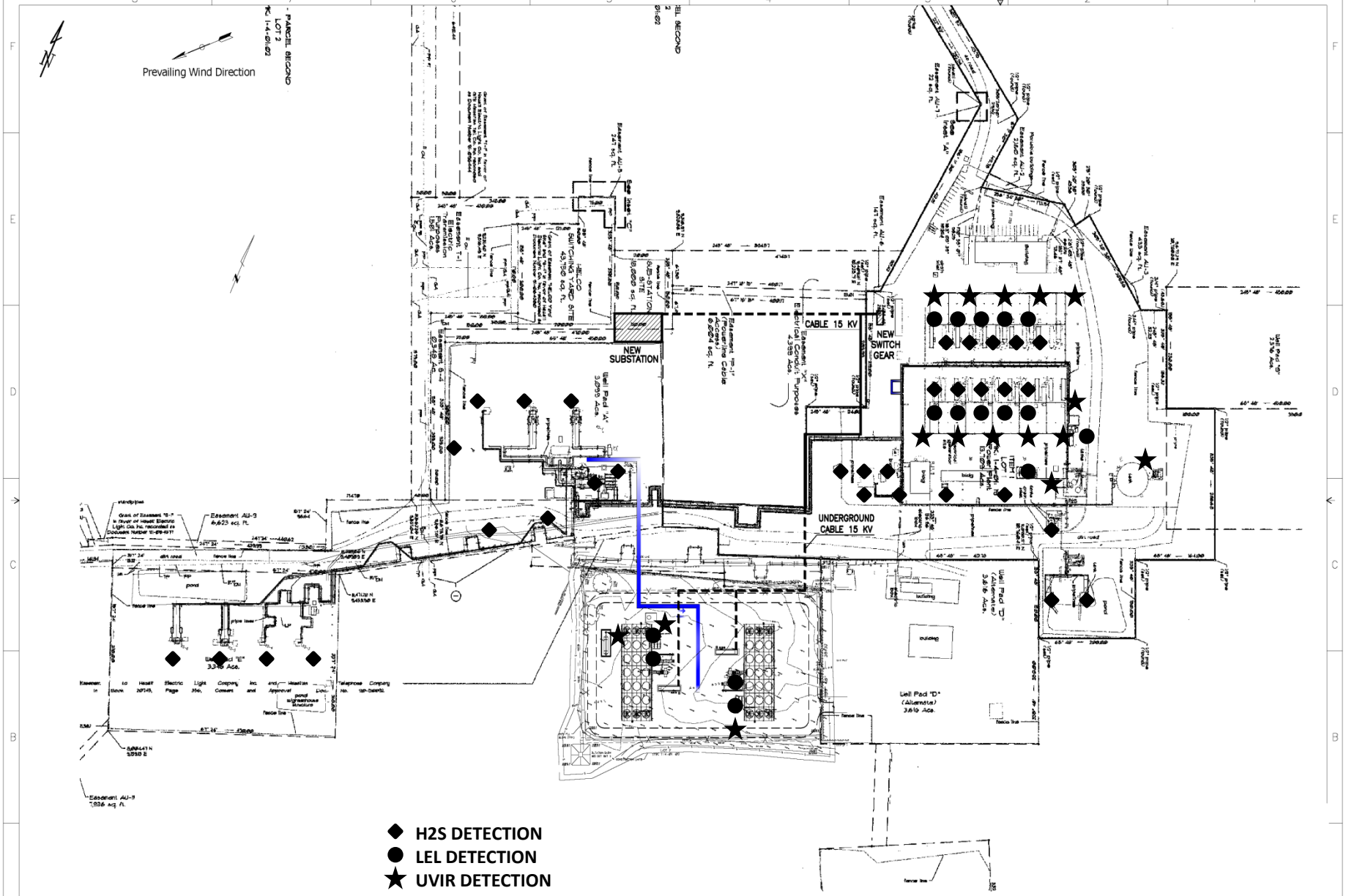
▲ FIRST AID
◆ SELF CONTAINED BREATHING APPARATUS
● EYE WASH STATION
★ OXYGEN KIT

4.2A SAFETY EQUIPMENT MAP



- ● FIRE EXTINGUISHER
- ★ FIRE HYDRANTS
- ▲ DELUGE SPRINKLER SYSTEMS
- ◆ HALON SUPPRESION SYSTEMS (10 PCS & CSC)
- ■ FM 200 SUPPRESION SYSTEMS (OEC 31 & 32 NEW PLANT)

4.2B FIRE SYSTEM MAP



◆ **H2S DETECTION**
● **LEL DETECTION**
★ **UVIR DETECTION**

4.2C GAS DETECTION MAP

SAFE BRIEFING AREAS

In the event that the CSC siren sounds, evacuate the area and proceed to 1 of the 3 safe briefing areas.

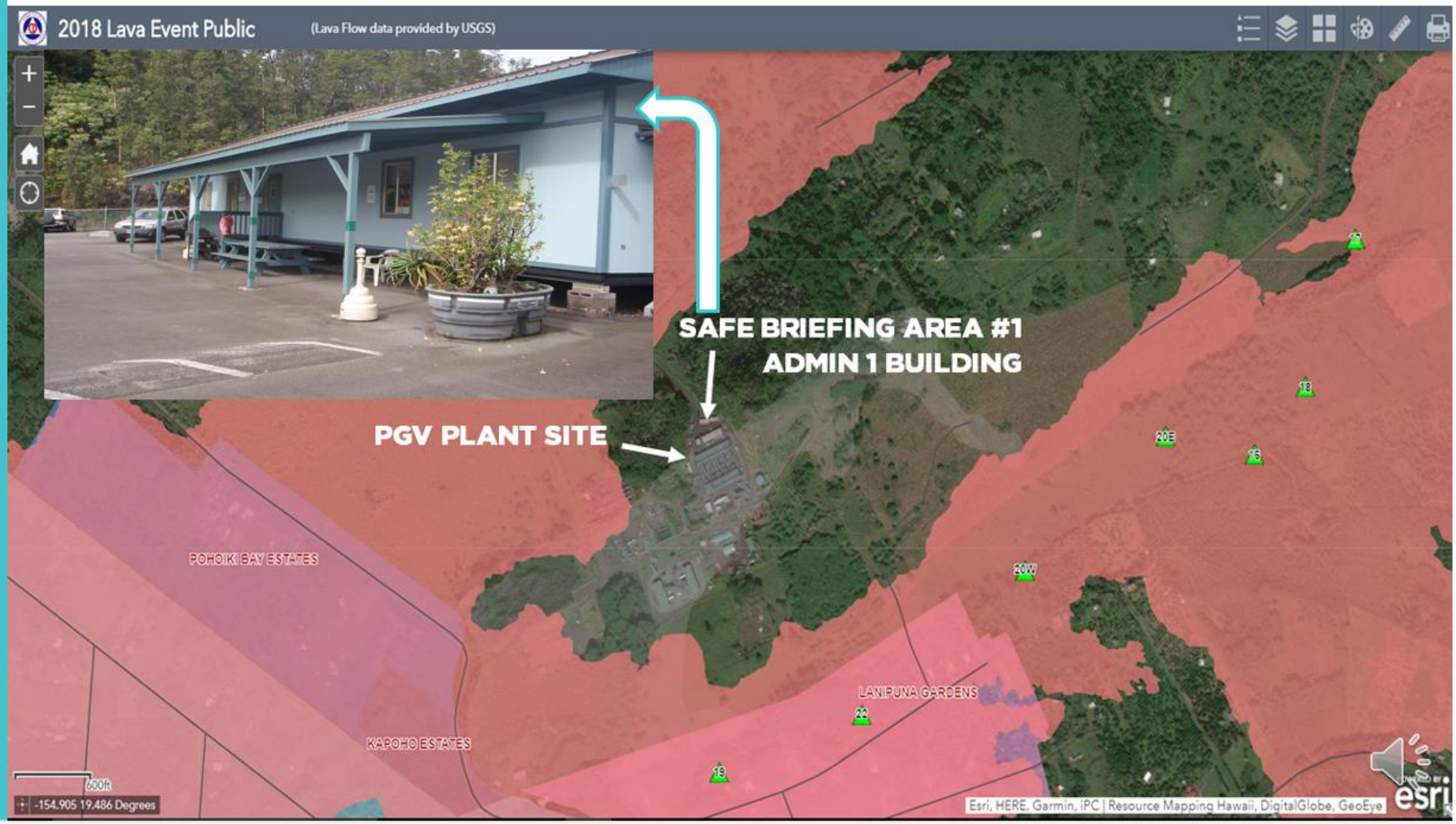
NOTE: If you detect a hazardous release notify CSC, identify the wind direction and evacuate crosswind and upwind towards 1 of 3 safe briefing areas.

1. Outside of Admin 1
2. Guard Shack Lay Down Yard
3. HWY 132 Lava Tree Triangle

Wait there until you receive further instructions. Do not leave the area until you have been accounted for and have been granted permission to leave by the emergency coordinator or authorized PGV personnel.

NOTE: Remember all safe briefing areas are dependent on wind direction.

SAFE BRIEFING AREA #1 – ADMIN 1

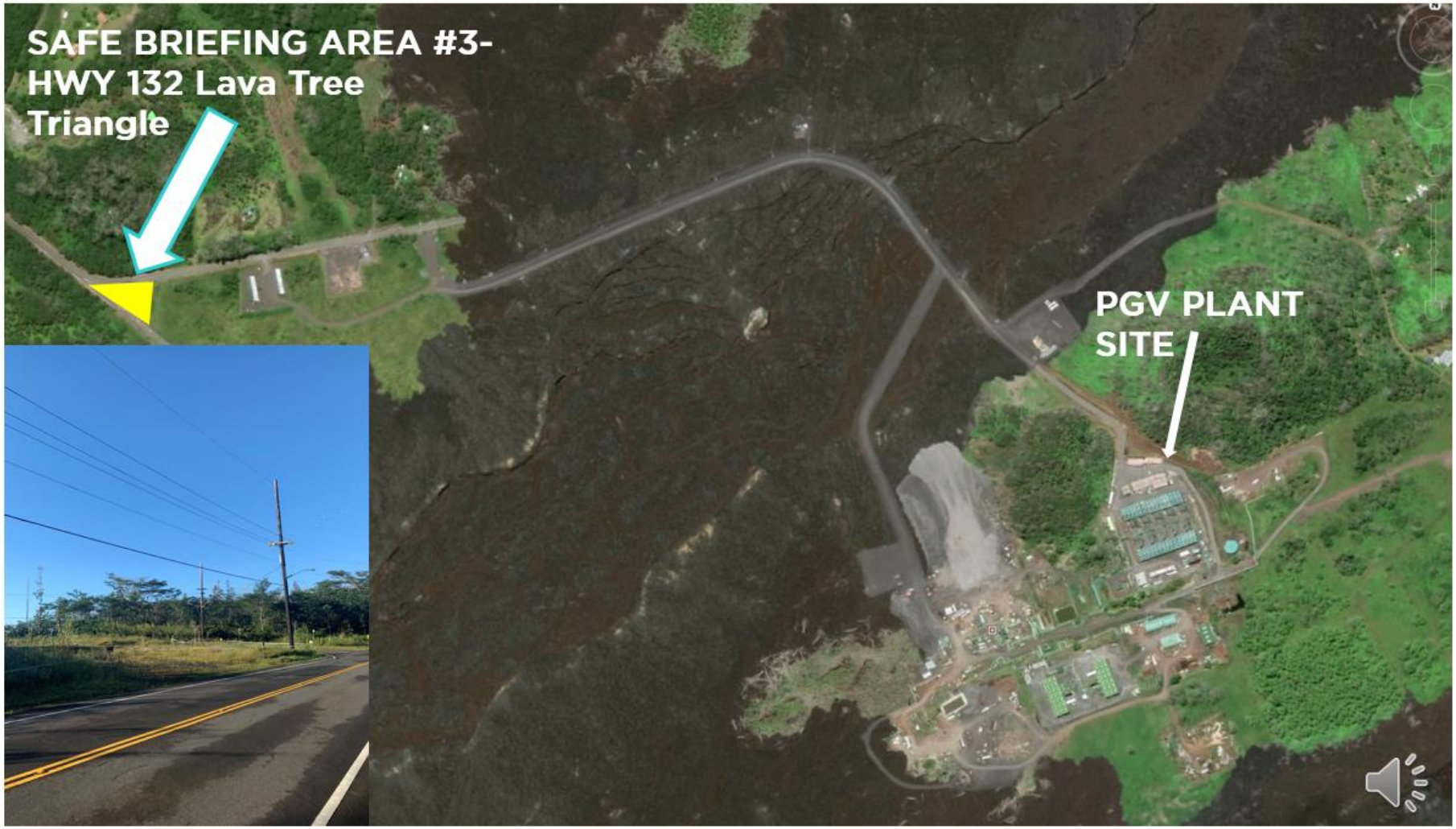


ORMAT

SAFE BRIEFING AREA #2 – GUARD SHACK LAY DOWN YARD

ORMAT

SAFE BRIEFING AREA #3 – HWY 132 Lava Tree Triangle



ORMAT

5 PGV EVACUATION PLAN

This section outlines what will be done to prepare for and implement the evacuation of people from the site and the surrounding area, as necessary, and equipment from the site, in the event that an evacuation is necessary.

5.1 Evacuation of Persons On-site

The following are the on-site features which will be in place in preparation for evacuating persons that are on site at the time that an evacuation is required from the site:

- *PGV Chain-of-Command:*
  The PGV chain-of-command (Chapter 3) will be implemented when an emergency response condition exists at the site.

- *On-site Warning:*
  A loud siren is located on top of the Control Building. This siren alarm will sound continuously in the event that a facility emergency situation exists requiring evacuation of the site. The alarm will be turned off after all personnel are accounted for and control measures have been initiated.

- *On-site meeting points (see Figure 5-1):*
  In the event of a facility emergency at the site requiring evacuation, all on-site PGV, staff contractor personnel and visitors, except those designated to deal with an emergency response at the site, are to proceed to one of three possible meeting points. The first response meeting point will be in front of Admin I. If that site is not suitable, the second will be at the staging area for the site on the Pahoa-Kapoho Road.

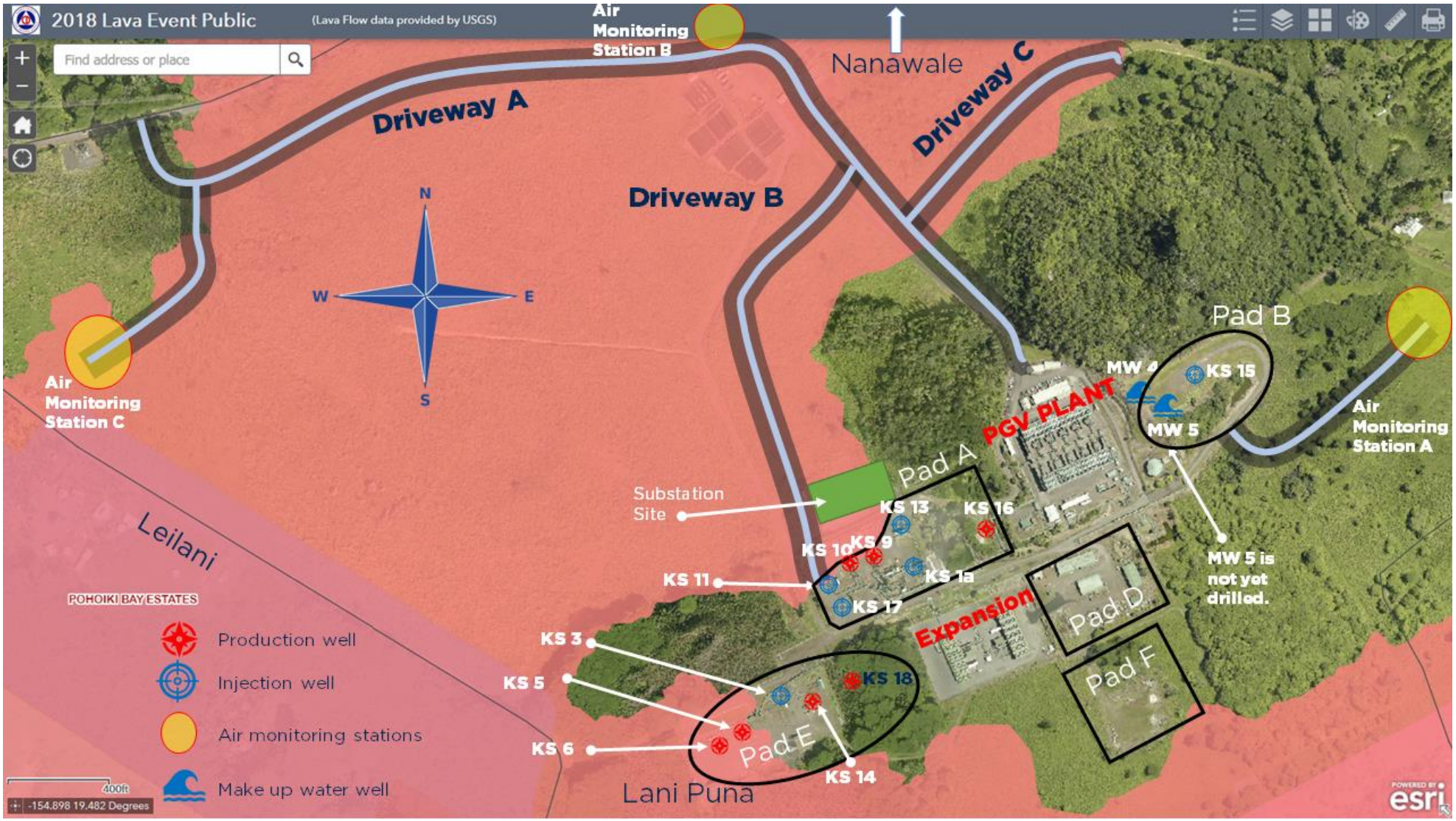
  If neither of those sites are suitable, the third will be on the project property near the intersection of the Pahoa-Kapoho Road and the Pahoa-Pohoiki Road.

- ***On-site Personnel:***
  All personnel entering the site are logged in by the security guard, lead operator, or the automated security access system. In an emergency, these logs will allow head counts to determine if all personnel have been accounted for.

- *Evacuation Routes:*
  Primary and secondary evacuation routes from the active wellpad and the power plant will be posted and clearly marked. There are two main entries into the site (Figure 5-1). These routes will be clearly marked as the primary evacuation routes away from the power plant and wellpad areas. The two secondary alternative evacuation routes will be marked from both the wellpad and the power plant according to the road access on the site.

- *Orientation of PGV, Contractor Staff, and Other On-site Persons:*
  All persons entering the site will be given an orientation regarding safety at the site, and the location of facility emergency response evacuation routes and meeting points.

- *Site Command Post:*
  A command post will be established at one of the designated meeting areas to deal with a facility emergency situation. Additional details related to the command post are in Section 8.


2018 Lava Event Public
(Lava Flow data provided by USGS)
Find address or place
Air Monitoring Station B
Nanawale
Driveway A
Driveway B
Driveway C
N
W
E
S
Air Monitoring Station C
Air Monitoring Station A
Pad B
MW 4
KS 15
MW 5
PGV PLANT
Pad A
Substation Site
KS 13
KS 16
KS 10
KS 9
KS 1a
KS 11
KS 17
Expansion
Pad D
Pad F
MW 5 is not yet drilled.
Leilani
POHOIKI BAY ESTATES
KS 3
KS 5
KS 6
KS 18
Pad E
KS 14
Lani Puna
Production well
Injection well
Air monitoring stations
Make up water well
400ft
-154.898 19.482 Degrees
esri

5.2 Evacuation of Nearby Residents

The Civil Defense Agency (CDA) has the responsibility of providing the warning to, and to effect the implementation of, the evacuation of any residents or other members of the public from the appropriate hazard area surrounding the site, as necessary. Warning to these residences is also provided by the CDA. PGV will provide assistance in this regard, as directed by the CDA. PGV anticipates no project_created situation which would not provide sufficient time for the CDA to warn or evacuate the public, as appropriate.

PGV has prepared for, and submitted to, the Hawaii County Planning Department, a map showing residences located within 3,500 feet of the project boundary as specified by the Geothermal Resource Permit. PGV has updated this map and previously submitted a copy to CDA.

5.3 Removal of Equipment

Should any of the natural hazards discussed in Section 8.1 threaten project facilities, PGV may elect to remove portable construction and drilling rig equipment or other critical equipment from the project site, providing adequate time exists for this to be done without endangering the health or safety of staff undertaking the actions. In general, the equipment to be removed and the procedures to be used will be similar to those presented in Table 5-1.

TABLE 5-1 EQUIPMENT REMOVAL ACTIVITIES AND PROCEDURES

<u>During Well Drilling</u>

- Place 100 foot cement plug at bottom of well casing, remove drill pipe and laydown.
- Shut-in Blow-Out Preventer (BOP), including master valve.
- Evacuate all mobile and portable equipment (drill pipe, trailers, air compressor, mud logging trailer, etc.).
- Remove BOP and install blind flange on wellhead valve.
- Fill well cellar with cinders.
- Laydown rig, remove engine-generators, Silicon Control Rectifier (SCR) unit, tool shed and mud house.
- Disassemble and remove mast and sub-structure, mud tanks, fuel tanks, tracking system and other rig equipment from site.

During Plant Construction or Operation

WELLPADS

- Shut off well flow by closing the electro-pneumatic control valve that supplies geothermal fluid to the wellpad separator.

- Close the manual upper and lower master valves on production wells KS-9, KS-10, KS-5, KS-6, KS-14, KS-16, KS-17 and KS-18 and injection wells KS1A, KS3, KS-11, KS-13 and KS-15.

- Remove pipes around the wellhead.

- Disassemble wellhead down to the top of the upper master valve.

- Place a blind flange on top of the master valve.

- Fill the well cellar with cinders to the surface.

POWER PLANT

- Remove all other portable and construction equipment as time permits.

- Drain tanks holding chemicals into chemical tanker trucks (one tanker per caustic tank) and remove from site.

- If access to the site is cut off or if there is insufficient time to complete removal of caustic, drain tanks into ESRF pit and fill tanks with water to prevent vaporization of residue caustic solution.

In case of threat of lava flow drain pentane from Ormat Energy Converters (OECs) units 11-15 and 21-25 and Bottoming Unit OECs 31 and 32 to the storage tanks and, if necessary, from storage tanks into tanker trucks and remove from site to a designated safe area.

6 PGV PERSONNEL TRAINING

PGV personnel and subcontractors will be trained and educated on the relevant elements of the facility emergency response plan and on emergency equipment and related procedures. During any shift, there will be at least three PGV employees on-site familiar with the facility emergency plans and the use of the emergency rescue equipment (i.e., Scott Air Pack, fire extinguisher, etc.) and trained to administer first aid in case of injuries.

All contractors at the site have the responsibility to ensure that their staff has had adequate training and orientation related to the safety and potential hazards associated with conditions and potential conditions at the site. PGV will provide all site contractors with a copy of the Emergency Action Plan for their own use in orientation and training of their staff. PGV will consult with contractors/consultants to assure they are familiar with emergency response and evacuation procedures.

6.1 Drilling

There will be at least three (3) persons fully trained in the handling of hydrogen sulfide (H_2S) emergencies during each shift of drilling work.

6.1.1 H_2S Safety Training

All drilling staff and contractor personnel are required to be trained and knowledgeable in H_2S hazards and emergency response action. H_2S safety training will be provided, if they are not currently trained and certified, to PGV drilling staff and drilling contractor personnel prior to the start of drilling operations. All Plant operators and maintenance personnel will be trained and the training will be administered by a certified H_2S safety instructor. The course content is described in Appendix B. The course will cover the following topics:

- DESCRIPTION OF H_2S SOURCES DURING DRILLING OPERATIONS
- PHYSIOLOGY OF H_2S TOXICITY
- USE OF DETECTION EQUIPMENT
- USE OF BREATHING APPARATUS
- EMERGENCY PROCEDURES
- FIRST AID FOR H_2S POISONING

In addition, all drilling staff and drilling contractor personnel will be trained in the importance of vertically directing and abating (for H_2S and brine particulates and aerosols) any releases of geothermal steam or brine, and in use of breathing apparatus as personal protection against any ambient brine particulates or aerosols.

6.1.2 H_2S Emergency Response Drills

Unannounced H_2S emergency response drills will be executed monthly during drilling operations. The drilling superintendent, certified in H_2S safety, will administer the drills. The drills will include:

- SIMULATE DRILLING OPERATION SHUT DOWN PROCEDURES
- EVACUATION PROCEDURES
- USE OF 5 MINUTE AIR PACKS
- USE OF DETECTION EQUIPMENT TO IDENTIFY SOURCE
- SIMULATE REMEDIAL ACTIONS TO ELIMINATE SOURCE
- USE OF H_2S AND GEOTHERMAL BRINE PARTICULATE AND AEROSOL ABATEMENT PROCEDURES AND EQUIPMENT

6.1.3 Blowout Prevention Training

Drilling personnel, drilling contractor's tool pushers and drillers will be trained in "well control equipment and procedures." The course content is shown in Appendix C. The training will include the following main topics:

- DESCRIPTION OF TYPES OF WELL CONTROL LOSS
- EARLY DETECTION OF INCIPIENT LOSS OF WELL CONTROL
- WELL CONTROL EQUIPMENT
- WELL CONTROL PROCEDURES
- TRAINING USING WELL CONTROL SIMULATOR

In addition, all drilling staff and drilling contractor personnel will be trained in the importance of vertically directing and abating (for H_2S and brine particulates and aerosols) any releases of geothermal steam or brine.

6.2 Blowout Emergency Response Drill (Drilling Operations Only)

A function test of hydril and pipe ram blow out prevention (BOP) equipment in use on the rig will be performed on a daily basis during drilling operations. A function test for blind rams will be executed during trips with drill pipe out of hole.

The drilling superintendent, certified in well control, will administer monthly blow out prevention and well control drills. These drills will consist of:

- IDENTIFICATION OF INCIPIENT BLOW OUT INDICATORS
- EMERGENCY DRILLING OPERATIONS IN PREPARATION FOR OPERATION OF BLOW OUT PREVENTION EQUIPMENT
- OPERATION OF BLOW OUT PREVENTION EQUIPMENT
- SIMULATION OF PROCEDURES TO KILL WELL
- USE OF H_2S AND GEOTHERMAL BRINE PARTICULATE AND AEROSOL ABATEMENT PROCEDURES AND EQUIPMENT
- AT LEAST ONE PERSON ON EACH SHIFT WILL BE TRAINED TO ADMINISTER FIRST AID IN CASE OF INJURIES.

6.3 Power Plant Construction

During any power plant construction or modification activities, there will be at least three (3) persons on-site that are trained to respond to H_2S releases.

During a facility emergency requiring on-site evacuation, a siren (one located at drill rig and one at the power plant staging area) will sound. Employees will be evacuated to the meeting point. Once at the meeting point, the situation will be assessed by trained supervising personnel. If the situation worsens, all non-essential personnel will be sent out of the area and only authorized, trained personnel will remain.

6.4 Power Plant Operation

During each shift of plant operations, there are at least three (3) people fully trained in handling hydrogen sulfide emergencies. A power plant personnel will be trained on the Emergency Response Plan. Additionally, plant personnel assigned to the Emergency Response Team will be trained in the use of all required personnel protection equipment and procedures. Plant Operators and Maintenance personnel will be trained on fire system and monitoring equipment as well as appropriate First Aid and CPR training.

7 PGV EMERGENCY DRILL

In addition to the H_2S emergency response and blowout emergency response drills described in Chapter 6, the facility operations and maintenance personnel will participate in a general drill at least semi-annually to respond to emergency situations. More frequent drills will be conducted where observations of the semi-annual drill response activities indicate a need. Drills will focus on response to all possible scenarios as outlined in this plan.

8.0 PGV HAZARD ANALYSIS AND PGV RESPONSE PROCEDURES TO POTENTIAL EMERGENCY SITUATIONS

The purpose of this section is to evaluate the hazards which could occur or develop at the project site and could cause an emergency response to be taken at the site and to generally describe PGV's planned responses. These are presented in three parts. The first part (8.0) discusses the 9 natural hazards that could affect the PGV project site. The second part (9.0) describes potential hazards which could arise from upset conditions at the site. The third (10) are special upset conditions which could arise from site equipment malfunction or power grid interruptions.

8.0 NATURAL HAZARDS

8. 1 Natural Hazards

Notification:

The Hawaii Volcano Observatory (HVO) or the CDA will commonly notify the public, including PGV, that these types of hazards threaten the general area where the PGV facility is located. Immediate verbal notifications will be made by PGV to the appropriate agencies, as applicable, and as per the PGV Notification Guidelines.

PGV General Response:

Once notified that a natural hazard situation may affect or has affected the site, PGV will:

1. Turn on a battery-powered radio to listen for Emergency Broadcast Systems (EBS) announcements.
2. Notify the CDA (Table 3-1) immediately should the situation cause a facility emergency situation that could threaten public health and safety.
3. Establish a Command Post at the site.
4. Implement the Chain-of-Command (Table 3-2) including verification of the status of all on-site persons.
5. Implement the Evacuation Plan (Chapter 5), as appropriate.
6. Take the appropriate follow-up actions that are listed in detail in the following sections.

Reporting:

All reporting related to emergencies created by these types of hazards will be done as soon as possible during the emergency and afterwards according to the Post Emergency Response Procedure presented in Appendix D.

8.1.1 Volcanic Activity

Nature of Hazard:

Volcanic activity on the Big Island of Hawaii has been severe enough to have caused the loss of life and property damage due to lava flows. The majority of Hawaiian volcanic eruptions are gentle with the lava moving no more than several miles per day. There is generally adequate time for warnings of impending or actual eruptions to allow time to evacuate both people and equipment.

Potential dangers at the PGV site in the event of lava flow are explosion and fire, principally at the OEC units, pentane and diesel storage tanks, power rooms and substation areas. Refer to Section 9.2.2 for the discussion on the hazard from fire and explosion. As discussed in Section 5.3, PGV believes that essentially all of the drilling equipment (if on-site) could be removed from the site if this type of threat developed, and that any producing or drilling wells could be suspended to eliminate the possibility of any release of H_2S from a well during lava flow. However, Section 9.2. discusses the hazard from uncontrolled releases of steam should this occur.

Response Actions:

Upon notification or determination, PGV will take the following actions, as appropriate, supplemental to those listed at the beginning of Section 8.1:

1. Prepare to cease all activities at the project site.
2. Notify the CDA (Table 3-1) immediately should the volcanic activity cause a facility emergency situation that could threaten public health and safety.
3. Alert service suppliers (Appendix E) to assist with removal of supplies and equipment.
4. Shut down all facilities and secure all wells as per Chapter 5.
5. Remove equipment and materials as time permits and the situation allows, as per Chapter 5.3.
6. Await instructions from CDA.
7. Make other required notifications.

If a determination is made that there is an imminent threat to the facility, PGV will independently take the actions needed to complete the evacuation of personnel and, if time permits, to remove equipment and fluids according to the list in Chapter 5, Table 5-0.

8.1.2 Magma Intrusion

Nature of Hazard:

Magma intrusion in the immediate vicinity of the site (within 1/2 mile) could result in a well on the property acting as a conduit for lava to flow to the surface at the project site. Were this to actually occur, and lava flowed through the well to the surface, the hazard would be similar to the discussion under Section 8.1.1 regarding lava flows.

Response Actions:

Upon notification or determination, PGV will take the following actions, as appropriate, supplemental to those listed at the beginning of Section 8.1 to prevent any magma from entering the wellbore:

1. Determine the availability of service personnel and equipment and request stand-by of same (Appendix E).
2. Notify the CDA (Table 3-1) immediately should the magma intrusion cause a facility emergency situation that could threaten public health and safety.
3. Notify the State Department of Land and Natural Resources (DLNR) and Hawaii County Planning Department (Table 3-1) regarding the status of the geothermal wells.
4. Monitor the geothermal fluid pH at intervals recommended by Resource Consultant on the basis of proximity of the intrusion to the PGV wells.
5. If the fluid is being impacted by volcanic gases, drilling or power generation will be terminated.
6. Shut-in all wells immediately.
7. Inject water into the well within 48 hours of the shut-in pressure in the well declining to less than atmospheric pressure.
8. Await instructions from CDA and DLNR.
9. Make other required verbal notifications to regulatory agencies (Hawaii County, State of Hawaii and Environmental Protection Agency).

If no evidence of fluid acidification is evident, sampling will be terminated and the facility would resume normal operations once the emergency condition had been withdrawn by the responsible agencies.

If a determination is made that there is an imminent threat to the facility, PGV will independently take the actions needed to complete the evacuation of personnel and, if time permits, to remove equipment and fluids according to the list in Chapter 5, Table 5-0.

8.1.2.1 Lava Interruption

Nature of Hazard:

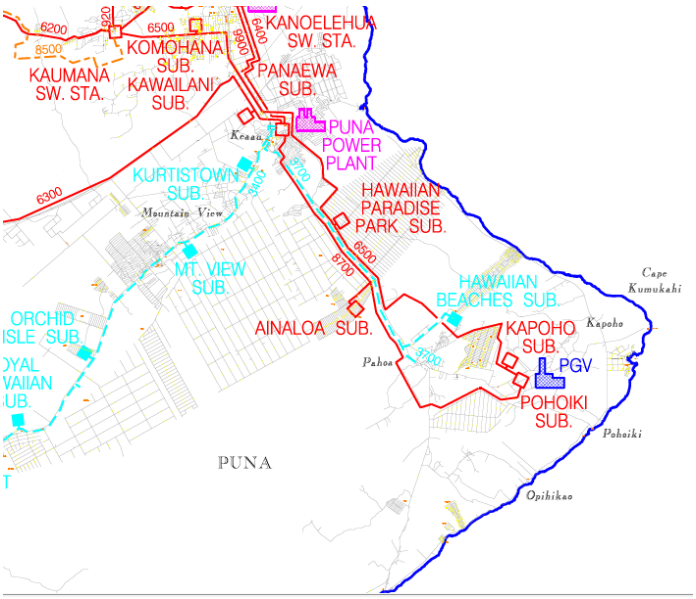
Lava interruption to electrical transmission lines 8700 and 6500 can effect power plant operation. The majority of Hawaiian volcanic eruptions are gentle with the lava moving no more than several miles per day. There is generally adequate time for warnings of impending threat to transmission lines to allow time to safely shutdown plant operation and evacuate personnel and to remove equipment according to the list in Chapter 5, Table 5-0.

System Description:

Highway 130 provides a road connection between PGV and upper Puna. Electrical transmission lines 8700 and 6500 are located on each side of HWY 130, each line is critical to transmit PGV power to the HELCO grid.

The PGV electrical transmission consists of the following components:

- PGV Switchyard
- Pohoiki substation
- Kapoho substation
- 8700 transmission line
- 6500 transmission line



Response Actions:

Upon notification or determination, PGV will take the following appropriate actions in the event lava interruption is imminent, supplemental to those listed at the beginning of Section 8.1:

Loss of Transmission Lines

1. If one transmission line is lost or removed from service due to lava interruption, contact the HELCO/System dispatcher for status of the grid.
    a. Reduce Main Steam Pressure (MSP) to 120psi approximately 5-7 MW.
    b. If HELCO/System is working on putting the line back in service, continue plant status.
        i. Contact HELCO/System dispatch every 30 minutes for line status.
    c. If HELCO/System is UNABLE to work on returning the line back into service and lava continues to flow to second transmission line, a controlled shutdown of the plant in coordination with HELCO/System will be performed.

Controlled Plant Shutdown

NOTE: If possible, the following steps will be done prior to losing plant operation.

1. Prepare to cease all activities at the project site.
2. Notify the CDA (Table 3-1) immediately should the volcanic activity cause a facility emergency situation that could threaten public health and safety.
3. Alert service suppliers (Appendix E) to assist with removal of supplies and equipment.
4. Shut down all facilities and secure all wells as per Chapter 5.
5. Ensure all production wells are under layup/recirculation per PGV procedures.
6. Maintain communication with CDA and await instruction.
7. Make other required notifications.

8.1.2.1 Lava Intrusion

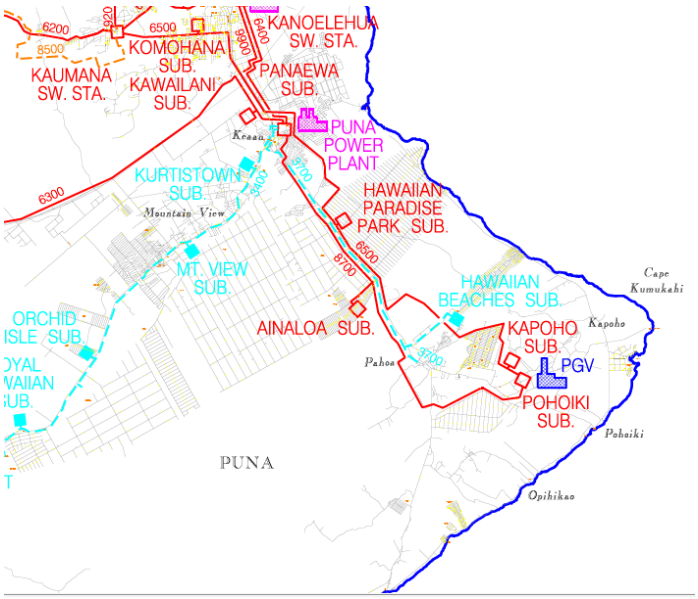
PGV LAVA INTRUSION PROCEDURES

PURPOSE
Provide a contingency plan in the event that lava affects transmission lines or plant operation.

SYSTEM DESCRIPTION
Highway 130 provides a road connection between PGV and upper Puna. Electrical transmission lines 8700 and 6500 are located on each side of HWY 130, each line is critical to transmit PGV power to the HELCO grid. This plan will provide guidelines on manning and maintaining the power plant, layup of the plant and receiving consumables if vehicle access and electrical transmission are lost.

The PGV electrical transmission consists of the following components:

- PGV Switchyard
- Pohoiki substation
- Kapoho substation
- 8700 transmission line
- 6500 transmission line



Loss of Transmission Lines

1. If one transmission line is lost, contact the HELCO/System dispatcher for status of the grid.
    a. If HELCO/System is working on putting the line back in service, continue idling at 120 psi MSP approximately 5-7MW.
        i. Contact HELCO/System dispatch every 30 minutes for line status
    b. If HELCO/System is UNABLE to work on returning the line back into service and lava continues to flow to second transmission line, a controlled shutdown of the plant in coordination with HELCO/System will be performed.
        i. Start water well 10-P-5 with portable diesel generator to maintain water supply for bleeds.
2. Ensure all production wells are under layup/recirculation per PGV procedures.

Lava Intrusion Near Plant

NOTE: If possible, the following steps will be done prior to losing plant operation.

Controlled Plant Shutdown

1. Prepare to cease all activities at the project site.
2. Notify the CDA (Table 3-1) immediately should the volcanic activity cause a facility emergency situation that could threaten public health and safety.
3. Alert service suppliers (Appendix E) to assist with removal of supplies and equipment.
4. Shut down all facilities and secure all wells as per Chapter 5.
5. Remove equipment and materials as time permits and the situation allows, as per Chapter 5.3.
6. Secure wellfield and power blocks.
7. Ensure all production wells are under layup/recirculation per PGV procedures.
8. Maintain communication with CDA and await instruction.
9. Make other required notifications

If a determination is made that there is an imminent threat to the facility, PGV will independently take the actions needed to complete the evacuation of personnel and, if time permits, to remove equipment according to the list in Chapter 5, Table 5-0.

8.1.3 Earthquake

Nature of Hazard:

Earthquakes occur suddenly, without warning, and can cause numerous casualties, severe damage, and loss of public and private property. The actual movement of the ground is less hazardous than partial or total building collapse, falling objects, debris and shattering glass. After shocks are usually smaller than the main quake but may be large enough to cause additional damage to structures weakened during the main shock.

Although by PGV choice, all PGV project facilities are being constructed to the Seismic Zone 4 criteria of the Uniform Building Code, which is more conservative than the required Seismic Zone 3, major earthquakes near the project site could cause buildings and tall structures to collapse (e.g., drilling rig), utility poles to collapse (creating loss of power and/or setting fires), pipeline cracks, breaks above and below ground, and loss of well integrity. Resulting hazards, with a potential to produce situations which could threaten the health, safety, or welfare of the public, are H_2S releases and fire, which are discussed in Sections 8.2.1 and 8.2.2, respectively.

Response Procedures:

Upon notification, or if an earthquake could be felt strongly at the project site, PGV will take the following actions supplemental to those listed at the beginning of Section 8.1:

1. Check for injuries and render first aid as appropriate.
2. Notify the CDA immediately should the earthquake cause a facility emergency situation that could threaten public health and safety, notify the CDA immediately.
3. Depending on the size of the earthquake, the power plant may be tripped. If so, emergency steam may be released through the rock muffler and abatement of hydrogen sulfide would start simultaneously. Respondents to an emergency will approach the site from an upwind direction and have air rescue packs, resuscitators and monitors as a precaution for failure of the H_2S abatement system. Notify both CDA and HDOH, Clean Air Branch (Table 3-1) if steam is released to emergency steam release facility.
4. Check water and electrical lines.
5. Switch off electrical power if there is damage to power sources or wiring.
6. Check buildings, pipelines and tanks for cracks and damage.
7. Inspect the rig (if applicable) and all wells.
8. Move diesel water pump to any damaged wellpad and notify DLNR (Table 3-1).

9. Request stand-by of well drilling contractors and suppliers (Appendix E).
10. Await instructions from CDA.
11. Make other required verbal notifications.

8.1.4 SEVERE WEATHER SYSTEMS Updated 8/30/2016 Jordan Hara

Nature of Hazards:

Hurricanes (winds of 74 miles per hour or more) and Tropical Storms (winds of 39-73 miles per hour) can cause death, extensive damage to lightly-built buildings and tall structures, uproot trees, snap utility poles, and make destructive missiles of flying debris. However, because of the design and construction of the PGV project, there is little potential for severe weather systems to produce facility emergency situations which could threaten the health, safety, or welfare of the public. Flooding produced by severe weather system rainfall and storm surf generated by high wind should not pose a threat to the project facilities since the project site is on high ground.

PGV General Preparedness:

Once notified that a natural hazard situation may affect or has affected the site, PGV will:

1. Turn on a battery-powered radio to listen for Emergency Broadcast Systems (EBS) announcements.
2. Notify HELCO and CDA immediately should the situation cause a facility emergency situation that could threaten public health and safety.
3. Establish a Command Post at the site.
4. Implement the Incident Command System, including verification of the status of all on-site persons.
5. Implement the Evacuation Plan, as appropriate.

PGV Response Actions:

Upon notification or determination, beginning 72 hours prior to a hurricane and/or severe weather system making landfall, PGV will take the following actions supplemental to those listed above.

1. Secure loose objects around project site and, if appropriate, cease drilling or plant operations.
2. (4-3) hours prior to the severe weather system making landfall, notify HELCO and CDA prior to reducing Main Steam Pressure (MSP) to 180 psi (Estimated at 25-28 MW) and communicate to CDA all safety protocols and PGV's plan for the severe weather systems.
3. Depending on the size and strength of the severe weather system, the power plant may be tripped. If so, steam is released through the rock muffler and abatement of hydrogen sulfide should start simultaneously. Responders to an emergency should approach the site from an upwind direction and have personal monitors and self-contained breathing apparatus (SCBA). Notify both CDA, HDOH (Clean Air Branch), County, and DLNR, if steam is released to the emergency steam release facility.
4. Ensure Monitoring Stations are recording meteorological data. Check propane tanks and top off if necessary.

72-60 Hour Off-Peak

1. One at a time, cycle shut and open all production well control valves.
2. Ensure there is a positive shut off on each well head control valve.

60 Hours

1. Ensure hydraulic actuator units are fueled up and attached to KS-9 E and KS14 E Velan isolation valves.
2. Operationally test the emergency diesel generator (EDG).
3. Check status of all emergency generators.

48 Hours

1. Call all off shift operators and notify them that they are on standby call in.
2. Review plant trip procedures.
3. Ensure all on shift personnel know the location of the STOP button on the CITECT screen.
4. Walk down production well bleed system.

The following will be contingent on landfall and severity of the severe weather system.

24 Hours

1. Call system (HELCO) and let them know that depending on landfall of the hurricane or severe weather system, we will need to reduce MSP to 180 psi. (Estimated at 25-28 MW) Estimate power loss for HELCO.
2. Place emergency generator in standby for water well 10-P-5. This well water will be used for the injection wells for bleeding

8 Hours

1. Evaluate wells if needed for bleed systems with current weather conditions.

4-3 Hours

1. Call in standby operators for operational support (minimum 3), 1 mechanic, 1 EI&C, and 1 well technician.
2. All production wells go down from two legs to one leg in service.
3. Take one or two reinjection wells (KS-1A, KS-3) out of service and set up well(s) with minimal bleeds from production wells.
4. Maintain MSP below 180 psi. (Estimated at 25-28 MW) Estimate net for HELCO.
5. Ensure heat removal mode settings are in place for all other operational OEC's.
6. Have all CSC shutdown procedures available for review

2-1 Hours

1. Station one operator on Wellpad A and another on Wellpad E.
2. Minimal bleed of production wells KS-14 and KS-5 to KS-6.
3. Shut in KS1A and maintain a minimal bleed from KS-9. Minimal bleed from KS-16 into KS-13. This will assist with bleeding the wells in the event the WHCV's are isolated.
4. Have all notification documents in standby.

Landfall

1. Notify system that you are reducing load to 120 psi MSP, which is approximately 5-7MW.
2. Throttle shut production wellhead control valves to maintain 120 psi MSP.
3. Make all attempts to keep as many OEC's online to reduce MSP and consume steam if plant trips.

Single Transmission from PGV

1. If one transmission line is lost, contact the HELCO/System dispatcher for status of the grid.
    a. If HELCO/System is working on putting the line back in service, continue idling at 120 psi MSP approximately 5-7MW.
        i. Contact HELCO/System dispatch every 30 minutes for line status
    b. If HELCO/System is UNABLE to work on returning the line back into service and weather conditions continue to worsen, perform a controlled shutdown of the plant in coordination with HELCO/System.
        i. Start water well 10-P-5 with portable diesel generator to maintain water supply for bleeds.

Plant Trip

1. Notify the CDA immediately should the severe weather system cause a facility emergency situation.
2. Start water well 10-P-5 with portable diesel generator to maintain raw water supply for bleeds.
3. Monitor communications on emergency radio channel from CDA.
4. Make other required verbal notifications.
5. Secure wellfield and power blocks.
6. Ensure all production wells (KS-5, KS-6, KS-9, KS-14 and KS-16) are bleeding per chart below.

PRODUCTION WELL BLEEDS:
WELLPAD E
KS-14 bleed to KS-6
KS-5 bleed to KS-6
ALTERNATE BLEED will be to KS-3/ may need to bleed to multiple wells

WELLPAD A
KS-9- bleed to KS1A
KS16- bleed to KS13
ALTERNATE BLEED- May need to bleed to multiple wells

7. Once the severe weather system has passed, if needed, perform testing on all auxiliary, wellfield, and powerblock systems prior to plant startup.

8.1.5 Lightning

Nature of Hazard:

The power plant is designed to operate in all types of weather conditions, even in severe thunderstorms. Grounding is provided in the power plant, wellpads, substation, and switchyard. There is also a grounded lightning rod on top of the drilling rig. Though the plant is equipped with lightning protection systems lightning could trip the whole plant and activate the emergency steam release system with power coming from the emergency diesel generator. There is little potential for lightning to produce any facility emergency situations which could threaten the health, safety, or welfare of the public, although ignition of a fire within the plant is a remote possibility (see Section 8.2.2).

Response Action:

In this instance, there may not be advance notification to PGV regarding this hazard. In the event that a lightning storm should threaten the project facilities, PGV will take the following supplemental actions in addition to those listed at the beginning of Section 8.1:

1. Assess the conditions.
2. Notify the CDA immediately should lightning cause an facility emergency situation that could threaten public health and safety.
3. Prepare to extinguish small fires and cut (or reduce) all power sources.
4. If there is a fire, implement Brush Fire Response actions as outlined in Section 8.1.6 or the actions in Section 8.2.2 if it is in the plant site.
5. Depending on the nature of the lightning strike, the power plant may be tripped. If so, steam may be released through the rock muffler and abatement of hydrogen sulfide would start simultaneously. Respondents to an emergency should approach the site from an upwind direction and have personal monitors and SCBAs. Notify both CDA and HDOH, Clean Air Branch (Table 3-1), if steam is released to the emergency steam release facility.
6. Await instructions from CDA.

8.1.6 Brush Fire

Nature of Hazard:

A runaway brush fire reaching the power plant could cause an explosion or fire at the OEC Units, pentane and diesel storage tanks, power rooms, and substation areas. Similar dangers could also exist in the vicinity of the well pads and could threaten the rig and support facilities. PGV's responses to fires involving actual project components are presented in Section 8.2.2.

Response Actions:
In this instance, the CDA may not provide advance notification to PGV regarding this hazard. In the event that a brush fire should threaten the project facilities, PGV will take the general actions outlined at the beginning of Section 8.1 and the following supplemental actions:

1. Call Fire Department and the CDA (Table 3-1).
2. Notify the CDA immediately should the fire hazard cause a facility emergency situation that could threaten public health and safety.
3. Instruct on-site personnel to proceed immediately with fire fighting using the existing on-site fire protection systems (see Section 4 and Appendix A, Section A-8-3).
4. Prepare to cease all activities at the project site.
5. Prepare to shut down facilities and secure wells as outlined in Table 5-1.
6. If time permits, remove drilling equipment as per Evacuation Plan (Chapter 5).
7. Establish temporary blockades for all access roads leading into the fire.
8. Await instructions from the Fire Department and CDA.

8.1.7 PGV General Response:

Once a facility emergency situation occurs or is indicated which could threaten the health, safety, or welfare of the persons in the vicinity of the project site, PGV will:

1. Immediately notify CDA and other appropriate agencies of the nature and anticipated impacts and duration of the emergency situation in accordance with Table 3-1.
2. Turn on a battery-powered radio for Emergency Broadcast Systems (EBS) announcements, if appropriate.
3. Establish a Command Post at the site.
4. Implement the Chain-of-Command (Tables 3-1, Table 3-2), including verification of the status of all on-site persons.
5. Implement the Evacuation Plan (Chapter 5), as appropriate.
6. Provide environmental monitoring data to the Department of Health and to the County Civil Defense.
7. Take whatever follow-up appropriate actions are necessary to deal with the facility emergency situation.

<u>Reporting:</u>

All post-notification reporting related to these type of emergencies will be done as soon as possible during the emergency, and afterwards according to the Post Emergency Response Procedure identified in Appendix D.

The following sections describe the specific actions that will be followed if the following upset conditions requiring emergency response arise:

1. Geothermal steam and fluid releases from the reservoir or power plant.
2. Fire that threatens the site facilities and has the potential for moving off-site.
3. Any event creating very high continuous noise levels.
4. Chemical spills which could move off-site.

9.0 UPSET CONDITIONS

Upsets

Notification:

Upsets can occur during the life of the project, whether caused by natural or man-made events. Table 9-1 presents a summary of the specific routine and upset conditions that could occur at the project site. PGV will immediately notify the CDA when any facility emergency situation occurs or is indicated which could threaten the health, safety, or welfare of persons in the vicinity of the project site. In addition, PGV will notify the CDA (and appropriate other governmental agencies) when the routine and upset conditions indicated in Table 9-8 occur at the site so that these governmental agencies are kept informed of the site status. Finally, PGV has the responsibility under its permits and other regulatory authorities to notify various regulatory agencies related to the operation of the project and when certain upset conditions occur at the site.

TABLE 9-2 SITE RELEASES UNDER ROUTINE AND UPSET CONDITIONS

TABLE 9-1. SITE RELEASES UNDER ROUTINE AND UPSET CONDITIONS

		CHEMICAL/ MATERIAL	SOURCE	QUANTITY (lb/hr)	ESTIMATED DURATION	NOTICE TO CDA	MITIGATION AND OTHER ACTIONS
1.	WELLPAD ACTIVITIES						
1.1	ROUTINE ACTIVITIES						
1.1.1	DRILLING						
A	DRILLING	H2S	MUD PIT	NONE	N/A		MAINTAIN pH 11 IN TANK
B	TRIPPING	H2S	WELL	NONE	N/A		KEEP HOLE FILLED WITH MUD
C	RUNNING CASING	H2S	WELL	NONE	N/A		KEEP HOLE FILLED WITH MUD
D	CIRCULATING	H2S	MUD PIT	NONE	N/A		MAINTAIN pH 11 IN TANK
1.2.1	WELL TESTING						
A	PIPED DISCHARGE	H2S	RESERVOIR	13	10 DAYS-1x/WELL	YES	ABATE TO 95% THRU FLOW LINE
		BRINE	RESERVOIR	100,000	10 DAYS-1x/WELL		
B	WELL SHUTIN	H2S	RESERVOIR	<1	1 TO 2 DAYS	YES	BLEED H2S THRU CAUSTIC BUILDUP OVER MONTHS
1.2	UPSET CONDITIONS						
1.2.1	DRILLING						
A	WELL BLOWOUT	H2S	RESERVOIR	448	HOURS OR WEEKS	YES	KILL THRU SIDE VALVES OR DRILL OFFSET WELL
		BRINE	RESERVOIR	100,000	HOURS OR WEEKS	YES	
B	CASING BLOWOUT	H2S	RESERVOIR	448	SECONDS TO DAYS	YES	SHUTIN PIPE OR BLIND RAMS AND
		BRINE	RESERVOIR	100,000	SECONDS TO DAYS	YES	KILL WELL THRU SIDE VALVES
C	STRING BLOWOUT	H2S	RESERVOIR	448	SECONDS TO MINUTES	YES	USE FAST-COUPLING SHUTOFF
		BRINE	RESERVOIR	100,000	SECONDS TO MINUTES	YES	VALVE ON STANDBY
D	TANK RUPTURE	DIESEL	TANK	11,000 GAL	<2 HR TO CONTAIN		PUMP REMAINING TO FRAC TANK
		CAUSTIC	TANK	3,000 GAL	<2 HR TO CONTAIN		PUMP REMAINING TO FRAC TANK
E	SITE SPILL	DIESEL	TANK/LINE	11,000 GAL	<2 HR TO CONTAIN		SHUT VALVE AND CLEANUP
		CAUSTIC	TANK/LINE	3,000 GAL	<2 HR TO CONTAIN		SHUT VALVE AND CLEANUP
F	TRANSPORTATION SPILL	DIESEL	TRUCK	8,000 GAL	@ DAY<6 HR-SURFACE		TRANSFER AND CLEANUP SPILL
		CAUSTIC	TRUCK	5,000 LB	@ MON<6 HR-SURFACE		TRANSFER AND CLEANUP SPILL
G	FIRE	FUEL	VARIOUS	N/A	<12 HR	YES	SITE FIRE PROTECTION SYSTEM

TABLE 9-1. SITE RELEASES UNDER ROUTINE AND UPSET CONDITIONS

		PARTS		N/A	<12 HR	YES	SITE FIRE PROTECTION SYSTEM
1.2.2	WELL TESTING						
A	CAUSTIC SYSTEM FAILURE						
	POWER FAILURE	H2S	RESERVOIR	448	<5 MIN	YES	BACKUP GENERATORS/STOP TESTING
	TANK/LINE FAILURE	H2S	RESERVOIR	448	<15 MIN	YES	BYPASS TO BACKUP CIRCUIT/STOP
B	PIPE FAILURE	H2S	RESERVOIR	448	<5 MIN	YES	BYPASS TO BACKUP CIRCUIT/STOP
C	VALVE FAILURE	H2S	RESERVOIR	448	<15 MIN	YES	BACKUP/THROTTLE VALVE>SHUTIN WELL
D	CASING FAILURE	H2S	RESERVOIR	448	HOURS TO DAYS	YES	KILL AND CEMENT THRU SIDE VALVES

TABLE 9-1. SITE RELEASES UNDER ROUTINE AND UPSET CONDITIONS (continued)

		CHEMICAL/ MATERIAL	SOURCE	QUANTITY (lb/hr)	ESTIMATED DURATION	NOTICE TO CDA	MITIGATION AND OTHER ACTIONS
2	POWER PLANT						
2.1	ROUTINE ACTIVITIES						
A	OPERATIONS	H2S	FUGITIVES	<1	CONTINUAL		SITE SURVEYS/ROUTINE MAINTENANCE
2.2	UPSET CONDITIONS						
A	PLANT SHUTDOWN						
	ABATED-ALL WELLS	H2S	RESERVOIR	22	MINUTES TO HR	YES	ABATEMENT TO 96% THRU ESRF
		BRINE	RESERVOIR	114,000	MINUTES TO HR	YES	DISPOSAL THRU HOLDING POND
B	MAIN PIPE FAILURE	H2S	RESERVOIR	560	MINUTES TO HR	YES	CLOSE VALVES/SHUTIN WELLS
		BRINE	RESERVOIR	114,000	MINUTES TO HR	YES	
C	WELL PIPELINE	H2S	RESERVOIR	448	MINUTES TO HR	YES	CLOSE VALVES/SHUTIN WELLS
		BRINE	RESERVOIR	100,000	MINUTES TO HR	YES	
D	TANK RUPTURE	PENTANE	TANKS	35,600 GAL	<2 HR TO CONTAIN	YES	TRANSFER AND CLEANUP SPILL
		PENTANE	TURBINES	17,500 GAL	<2 HR TO CONTAIN	YES	TRANSFER AND CLEANUP SPILL
		CAUSTIC 50%	TANK	14,700 GAL	<2 HR TO CONTAIN		TRANSFER AND CLEANUP SPILL
		CAUSTIC 10%	TANK	13,200 GAL	<2 HR TO CONTAIN		TRANSFER AND CLEANUP SPILL
		DIESEL	TANK	1,500 GAL	<2 HR TO CONTAIN		TRANSFER AND CLEANUP SPILL
E	SITE SPILL	PENTANE	TANKS	35,600 GAL	<2 HR TO CONTAIN	YES	SHUT VALVE/TRANSFER AND CLEANUP
		PENTANE	TURBINES	17,500 GAL	<2 HR TO CONTAIN	YES	SHUT VALVE/TRANSFER AND CLEANUP
		CAUSTIC 50%	TANK	14,700 GAL	<2 HR TO CONTAIN	YES	SHUT VALVE/TRANSFER AND CLEANUP
		CAUSTIC 10%	TANK	13,200 GAL	<2 HR TO CONTAIN	YES	SHUT VALVE/TRANSFER AND CLEANUP
		DIESEL	TANK	1,500 GAL	<2 HR TO CONTAIN	YES	SHUT VALVE/TRANSFER AND CLEANUP
F	TRANSPORTATION SPILL	PENTANE	TRUCK	10,000 GAL	1x/YR-<6 HR		TRANSFER AND CLEANUP SPILL
		CAUSTIC	TRUCK	5,000 LB	1x/YR-<6 HR		TRANSFER AND CLEANUP SPILL
		DIESEL	TRUCK	8,000 GAL	1x/YR-<6 HR		TRANSFER AND CLEANUP SPILL
G	FIRE	PENTANE	TANK/LINES	44,600 GAL	<12 HR	YES	SITE FIRE PROTECTION SYSTEM

TABLE 9-1. SITE RELEASES UNDER ROUTINE AND UPSET CONDITIONS (continued)

	CHEMICAL/ MATERIAL	SOURCE	QUANTITY (lb/hr)	ESTIMATED DURATION	NOTICE TO CDA	MITIGATION AND OTHER ACTIONS
	LUB. OILS	CANS	<50 GAL	<12 HR		SITE FIRE PROTECTION SYSTEM
	DIESEL	TANK	1,500 GAL	<12 HR	YES	SITE FIRE PROTECTION SYSTEM
	PLANT	EQUIPMENT	N/A	<12 HR	YES	SITE FIRE PROTECTION SYSTEM
	PLANT	BUILDING	N/A	<12 HR	YES	SITE FIRE PROTECTION SYSTEM

FOOTNOTES:

1 H2S RELEASE IS ABATED OR UNABATED
ABATED RELEASE IS BASED ON 95% ABATEMENT OF 448 LB/HR WITH A RELEASE CONCENTRATION OF 31 PPM.
UNABATED RELEASE IS 448 LB/HR/WELL WITH A 1,120 PPM CONCENTRATION IN THE STEAM.

2 BRINE RELEASE IS NOT CONSIDERED AN EMERGENCY CONDITION.

3 QUANTITIES ARE ESTIMATED AS MAXIMUMS IN LB/HR OR AS DESIGNATED IN COLUMN.

4 DURATIONS ARE ESTIMATED AT RANGES BASED ON SITUATION AT SITE.

5 TRANSPORTATION SPILLS ARE ALSO PROVIDED WITH FREQUENCY OF DELIVERY: @DY-DAILY, @MO-MONTHLY.

6 THE TWO PENTANE TANKS HOLD 18,000 GAL BUT ARE AT MOST 50% FULL.

7 THE TURBINE PENTANE VOLUME IS BASED ON 10 x 3,560 gal

8 MAXIMUM DESIGN FLOW THROUGH PLANT IS 570,000 LB/HR.

9 DESIGN MAXIMUM WELL FLOW IS 400,000 LB/HR STEAM AT 650 PPM H2S CONCENTRATION.

9.2 Geothermal Steam and Fluid Releases

Nature of Hazard:

The geothermal resource produced from the reservoir through the wells drilled by PGV consists principally of high-temperature steam. When produced to the surface, the wells also bring geothermal "brine", consisting of numerous chemical and metallic salts, and "noncondensible" gases, such as carbon dioxide, hydrogen sulfide (H_2S), nitrogen and hydrogen. Appendix H contains a discussion of the chemistry of the geothermal fluids contained in the geothermal reservoir. During an uncontrolled release of steam from the reservoir, the geothermal brine and noncondensible gases would most likely also be released from the reservoir and into the environment.

Because of its toxicity and concentration, of all the components of the geothermal resource the H_2S gas is the component of most significant concern. H_2S gas is a colorless gas with a "rotten egg" odor which is slightly heavier than air. H_2S is acutely toxic in high concentrations (in the range of 400,000 to 700,000 ppb). H_2S at 10,000 ppb is considered the acceptable limit for worker exposure for 8 hours per day, 40 hours per week. At 10,000 ppb, H_2S is documented to be an eye irritant. It is readily detectible down to levels of about 5 ppb.

GENERAL CHARACTERISTICS OF HYDROGEN SULFIDE

Concentration (ppb)	Characteristics
400,000 to 700,000	Acutely toxic
10,000	Acceptable worker exposure for 40 hours per week - documented eye irritant
1,000	Hawaii Department of Health concentration limit for required evacuation to protect public health and defined "Warning" level (one-hour average)[1]
25	Hawaii Department of Health concentration limit for routine PGV project operations and defined "Watch" level (one-hour average)
5	Generally recognized level of odor delectability

1. The decision to actually order an evacuation is typically made in the field by the appropriate responsible agency(ies) based not on waiting on field measurements to document that the established one-hour average "Warning" level has been exceeded, but on the professional judgement of the agency(ies), based on all the data available at that time, as to whether or not the incident has the potential to exceed the established one-hour average "Warning" level.

HDOH has set a one-hour average ambient air concentration of 25 ppb H_2S as the lower limit for requiring notification to the CDA, and set a one-hour average ambient air concentration of 1,000 ppb H_2S as the lower limit for requiring evacuation. For the purposes of this PGV ERP, these levels have been designated as follows: 25 ppb = "Watch" and 1,000 ppb = "Warning". The decision to actually order an evacuation is typically made in the field by the appropriate responsible agency(ies) based not on waiting for field measurements to document that the established one-hour average "Warning" level has been exceeded, but on the professional judgement of the agency(ies), based on all the data available

at that time, as to whether or not the incident has the potential to exceed the established one-hour average "Warning" level.

As stated above, because of its toxicity and concentration in the geothermal fluid, H_2S is the component of the geothermal fluid of greatest significance. Other components, such as acidic aerosols and total particulates which may be formed in the atmosphere once the geothermal fluid is discharged during a well uncontrolled flow event, may also be potential health hazards if produced in sufficiently high concentrations, as may other components which are typically associated with geothermal fluids but which have not yet been quantified from samples of the PGV geothermal fluid. The HDOH-established "Watch" and "Warning" levels for H_2S have been set at levels to protect public health from H_2S and all other non-H_2S components of the geothermal fluid. Appendix H contains a more complete discussion of the current understanding of the chemistry of the PGV geothermal resource, including these other components.

The release of high temperature steam containing H_2S gas into the atmosphere may occur under different scenarios. To determine the "worst case" conditions under which such emissions could occur during an uncontrolled flow event at any wellpad, or during specified power plant upset conditions, PGV conducted a simplified hazard analysis of the possible well-related uncontrolled flow event and power plant upset scenarios to determine the range of credible situations under which hydrogen sulfide and other contaminants could be released from any well or the power plant (see Appendix H). On the basis of the available existing information, the "worst case" credible parameters of the geothermal resource (geochemistry [hydrogen sulfide and other chemical constituents], likely maximum credible productivity [flow rate], temperature [enthalpy], etc.) which would be used as the emitted (released) constituents in conducting a hazard analysis for these emissions (see Appendix H).

In order to determine the maximum ("worst case") impacts which could result from each of these 12 different emission scenarios, PGV conducted an impact analysis utilizing a standard air dispersion model (ISCST) accepted by the U.S. Environmental Protection Agency using a standard screening set of 33 different meteorological conditions to ensure that the "worst case" meteorological conditions for each emission scenario and receptor point was evaluated (see Appendix H). The results of this air dispersion modelling are presented in Appendix H. Table 9-2 summarizes the results of the modelling for each of the 12 release scenarios, organized on the basis of the air dispersion modelling are presented in Appendix H. Table 9-2 summarizes the results of the modelling for each of the 12 release scenarios, organized on the basis of the maximum distance at which each of the HDOH-specified threshold levels are predicted to be exceeded under the "worst case" meteorological conditions, and the point and concentration of maximum impact. Table 8-2 has further categorized each release scenario by which, if any, of the HDOH-specified threshold levels is exceeded by the maximum predicted concentration, thus ensuring that each release scenario is categorized by the highest estimated modelling impact.

TABLE 9-2. SUMMARY OF MODELED H_2S EMISSIONS

TABLE 6: SUMMARY OF MODELED HYDROGEN SULFIDE IMPACTS				
RELEASE SCENARIO	MAXIMUM OFF-SITE (>0.3 km) DISTANCE FROM SOURCE (km) TO IDENTIFIED ACTION LEVEL		POINT OF MAXIMUM PREDICTED OFF-SITE IMPACT (>0.3 km)	
	WATCH" LEVEL (25 ppb)	"WARNING" LEVEL (1,000 ppb)	CONCENTRATION (ppb)	DISTANCE FROM SOURCE (km)
TYPE "1" (EVENTS (EXCEED ONLY THE "WATCH" ACTION LEVEL)				
1. Abated vertical flow through diverter/muffler	0.9 km	N/A	40.3	0.4
9. Abated vertical flow from the mud sump	2.8 km	N/A	57.1	0.4
8. Abated vertical flow from the mud tanks	4.5 km	N/A	253.1	0.4
11. Unabated noncondensible gas flow	5.5 km	N/A	935.7	0.4
4. Unabated vertical flow through 13-3/8" casing	25. + km	N/A	146.0	0.6
5. Unabated vertical flow through 9-5/8" casing	25. + km	N/A	146.0	0.6
12. Unabated vertical flow through power plant steam release facility	25. + km	N/A	150.6	0.8
6. Unabated vertical flow through drill rig subbase	25. + km	N/A	246.8	0.5
2. Unabated vertical flow through diverter/muffler	25. + km	N/A	403.4	0.4
7. Unabated vertical flow through area of fractured rock	25. + km	N/A	789.4	0.4
TYPE "2" EVENTS (EXCEED THE "WATCH" AND "WARNING" ACTION LEVELS)				
10. Unabated horizontal flow through a 4" choke	25. + km	3.7 km	6,395[1]	0.4
3. Unabated horizontal flow through diverter	25. + km	6.7 km	12,786[1]	0.4

[1]Note that these scenarios can and will be quickly controlled through closing valves to shut in the well, resulting in a significantly reduced emission rate over any one hour period. The decision to actually order an evacuation is typically made in the field with the appropriate responsible agency(ies) based not on waiting for field measurements to document that the established one-hour average "Warning" level has been exceeded, but on the professional judgement of the agency(ies) based on all the data available at that time, as to whether or not the incident has the potential to exceed the established one-hour average "Warning" level.

As shown in Table 9-2, ten (10) of the modelled release scenarios result in predicted ambient air concentrations in excess of the HDOH-established one-hour 25 ppb H_2S notification "Watch" action limit, but do not produce predicted results in excess of the HDOH-established one-hour 1,000 ppb H_2S "Warning" action limit. These include all of the uncontrolled well-related releases (scenarios 1-2 and 4-9) and the continuous power plant-related release (scenario 12). The short-term, or "puff", release of hydrogen sulfide and other noncondensible gases from the power plant also falls in this category. Figure 9-1 has been drawn to show the predicted maximum off-site distance to the specified ambient hydrogen sulfide concentrations from each PGV wellpad and the plant site from all of these "Type 1" scenarios; that is, Figure 9-1 shows the worst of the worst case impacts predicted from all of the scenarios which maximum impact did not exceed the HDOH 1,000 ppb one-hour average "Warning" level. Thus, Figure 9-1 serves as the single worst case emergency planning and response map for all of these ten (10) listed "Type 1" scenarios; all predicted impacts were not greater than those shown on Figure 9-1 from any of the ten (10) scenarios.

The two well-related releases (scenarios 3 and 10) which have been modelled to exceed the HDOH-established "Warning" levels for one-hour hydrogen sulfide averages ("Type 2" events) are unique from all the other well-related discharges in more than predicted maximum impacts. First, the high predicted impacts result from the horizontal nature of the discharge of the geothermal fluid; that is, the horizontal discharge of geothermal steam and noncondensible gases creates an impact significantly larger in a directly downwind direction than the same flow would if directed in a vertical direction. Second, each of these upset discharges can each be stopped or redirected vertically by either manually or remotely shutting in one of the upstream control valves even after the discharge occurs. Thus, although these two discharges have been modelled as if the discharge of geothermal steam and hydrogen sulfide would continue in a horizontal direction for more than an hour, through this modelling PGV has recognized that horizontal discharges of the geothermal fluid can produce unacceptably high impacts, and PGV can and will immediately terminate any such discharge if it occurs. Thus, any impact resulting from the short-term horizontal discharge of geothermal fluid will be short-term, and the actual hydrogen sulfide impact will be much less than that predicted in Table 9-2, and directly proportionate to the time the horizontal discharge continues.

The horizontal discharge of geothermal fluid modelled in scenarios 3 and 10 is directional (that is, the magnitude of the impact depends upon the direction of the discharge and the direction of the wind). Table 9-2 has been prepared to graphically show the focused nature of the emissions and impacts (a "Type 2" event) for scenario 3 from a single source if the emission were to continue for an entire hour under the worst case conditions. However, as stated above, PGV will immediately terminate any created horizontal discharge and the actual impact will be proportionally less.

A preliminary analysis of the possible impacts and health hazards which could result from the uncontrolled emission of the geothermal brine and noncondensible gases was also conducted by PGV and HDOH (see Appendix H). Based on this preliminary analysis, none of the non-H_2S components of the geothermal fluid appear to be released to, or formed in, the environment in concentrations high enough to significantly increase the level of health hazard created by the simultaneous emission of the H_2S. As a result, the levels of H_2S described above are used exclusively herein as the emergency response planning criterion. However, PGV, under the review of HDOH, will be undertaking a more detailed sampling and analysis program for these non-H_2S components during the first well flow test following acceptance of this revision of the ERP.

Response Actions:

PGV will immediately notify the CDA, HDOH - Clean Air Branch, and HDOH - Hazard Evaluation and Emergency Response Branch, in the event that any of PGV's operations result in an uncontrolled steam release which produces, or has the potential to produce, an exceedance of the appropriate ambient H_2S concentrations established by the HDOH - Clean Air Branch and HDOH - Hazard Evaluation and Emergency Response Branch.

In the event of an uncontrolled steam release, PGV will take the following actions to supplement the ones outlined at the beginning of Section 9.2:

1. Determine the nature (estimated duration and emissions, etc.) and "type" of release (Type "1" [Figure 8-1] or Type "2" [Figure 9-2]) and immediately communicate this information to CDA, HDOH - Clean Air Branch, and HDOH - Hazard Evaluation and Emergency Response Branch (Table 3-1).
2. Immediately implement perimeter monitoring with portable H_2S meters.
3. Maintain constant coordination with CDA, providing all assistance as requested.
4. Act to control and/or abate and vertically direct the uncontrolled source of the H_2S, as below:

   For most types of well blowouts, where control of the well is lost, the equipment and expertise will be immediately available to bring the well back under control. In parallel with any attempts to bring the well under control, PGV will work to ensure that any releases of geothermal fluid and/or steam are vertically directed and that emissions of H_2S and/or brine particulates or aerosols are abated to the extent consistent with equipment and worker health and safety. If initial attempts at well control are unsuccessful, PGV, in consultation with DLNR, will decide whether further attempts using available personnel are likely to be successful. If not, outside well control experts will be called in. This decision will be based on the severity and magnitude of the uncontrolled release, the hazard it represents to surrounding life and property, the experience and training of on-site personnel, and the availability of necessary well control equipment.

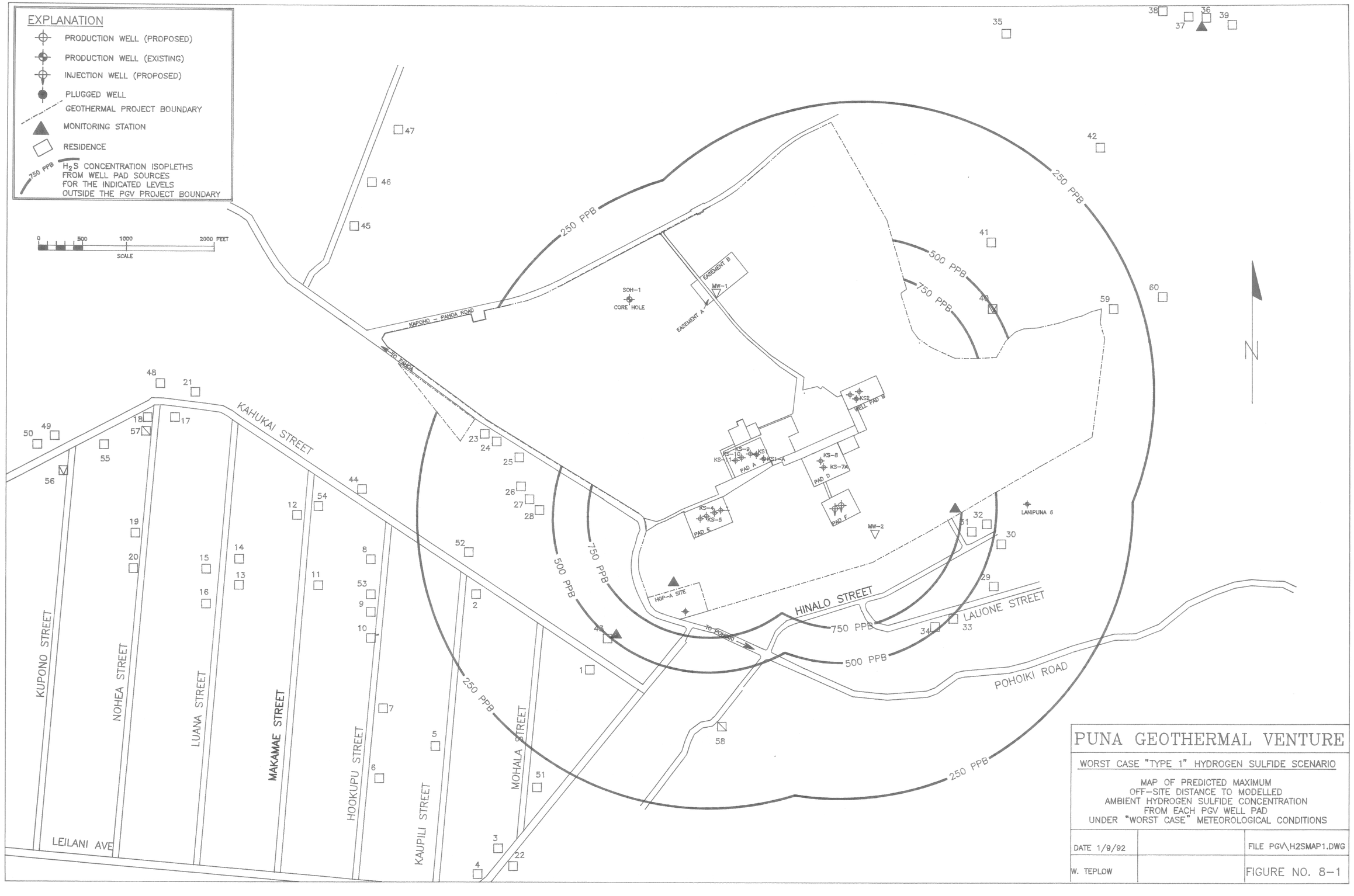
   If local expertise is unable to control the steam release, well control specialists from the mainland will be immediately contracted for assistance (see Appendix E). If it is determined that additional equipment and services are needed for the control of the steam release, PGV will obtain the required assistance and begin repair work immediately.

   As appropriate, the area around the uncontrolled well or point of discharge will be cleared of all loose materials and any unnecessary equipment and machinery. As feasible, giving first consideration to personal safety, PGV will attempt to control the release at the wellhead. Any on-site contractor personnel involved in well operations will have expertise and training in well control and should be consulted by the Project Manager.

   The well site will be immediately evacuated if there is any danger of the rig toppling. If not, water will be pumped into the well through the kill line or drilling pipe until the steam release is under control and stopped. Arrangements will then be made to pump cement into the well and plug the well as appropriate.

   An earthen berm and dikes may be constructed to divert and contain released brine in on-site well sumps and brine pits.

5. Report releases of H_2S in excess of reportable quantities (100 pounds over 24 hours) to the National Response Center, State Emergency Response Commission, and the Local Emergency Planning Committee (Table 3-1).

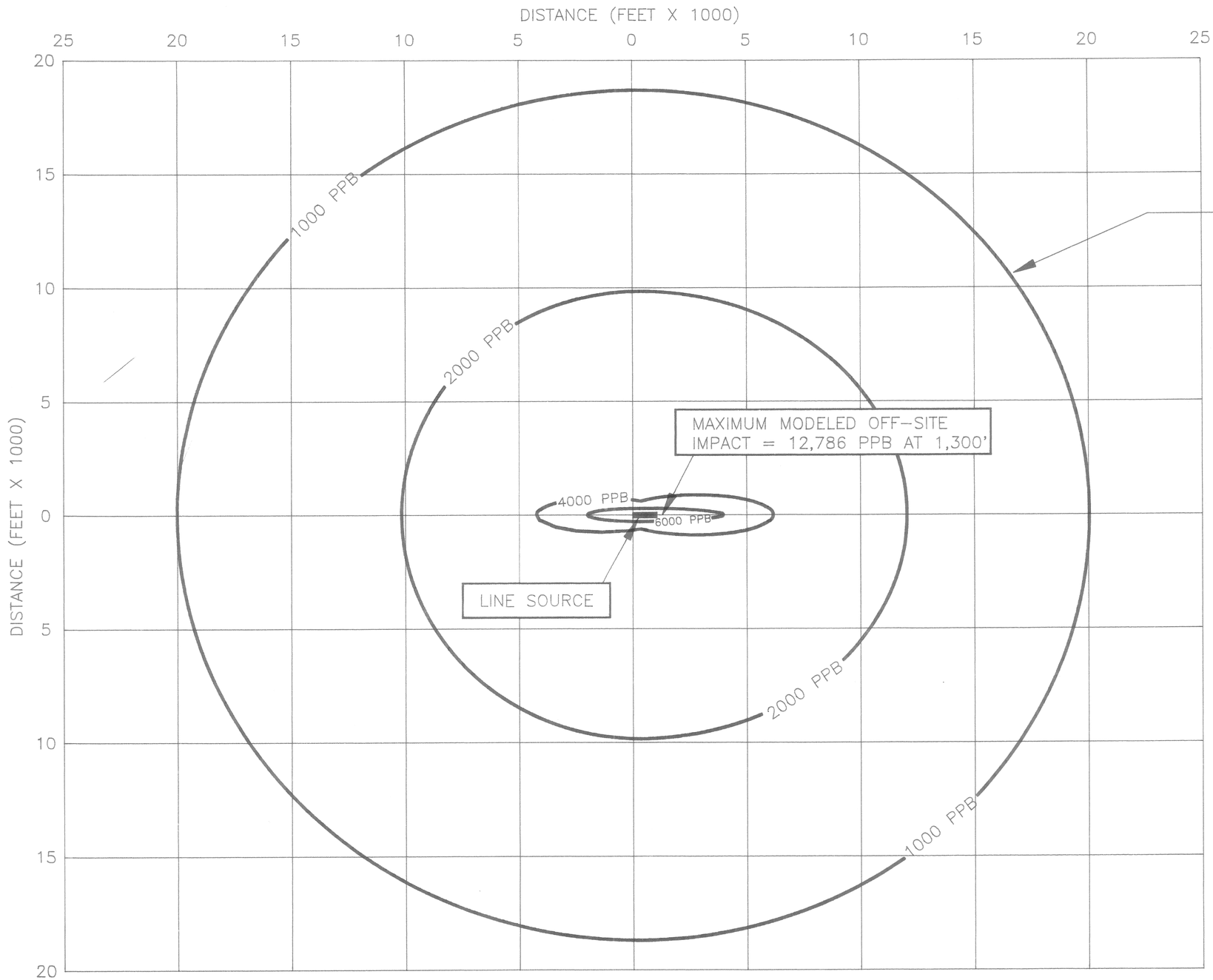


PUNA GEOTHERMAL VENTURE

WORST CASE "TYPE 1" HYDROGEN SULFIDE SCENARIO

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATION
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 1/9/92		FILE PGV\H2SMAP1.DWG
W. TEPLOW		FIGURE NO. 8-1



EXPLANATION

4000 PPB — MODELED HYDROGEN SULFIDE ISOPLETH WITH CONCENTRATION SHOWN IN PARTS PER BILLION

0 5000 10000 FEET

SCALE

PUNA GEOTHERMAL VENTURE

WORST CASE "TYPE 2"
HYDROGEN SULFIDE SCENARIO

MODELED HYDROGEN SULFIDE ISOPLETHS FOR SCENARIO 3, HORIZONTAL DISCHARGE UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 1/9/92		FILE: PGV\ERP8-2.DWG
BY W. TEPLOW		FIGURE NO. 8-2

9.2.2 Fire Hazard

Nature of Hazard:

The most probable location for a fire at the PGV plant site is within the electrical power rooms or any of the pentane heat exchangers. Fires may also occur in the control room, diesel fuel storage/or unleaded gas tanks, or the pentane storage tanks (see Table 8-1). Figures 4-2 and 4-3 show the location of most of the potential fire locations. Most fires will be limited in size and extent, identical to fires involving the same materials at any other facility or location. However, as described in Chapter 4 and Appendix A, all portions of the project which are potentially subject to a fire are protected by specific fire protection systems designed to prevent the occurrence and spread of a fire.

Of special interest is the presence of pentane on the power plant site. As indicated on Table 8-1 and Figure 4-3, a maximum of 11,000 gallons (approximately 56,000 pounds) of pentane is stored in two reserve tanks in the power block and one reserve tank with a maximum of 12,472 gallons (approximately 65,478 pounds) at the expansion plant. There are ten (10) OEC Units that hold approximately 3,560 gallons (approximately 18,700 pounds) and (2) OEC Bottom End Units located at the expansion plant that hold approximately 10,500 gallons each (approximately 55,545 pounds). Pentane is a flammable liquid (boiling point equals 97°F) with flammable limits between 1.5 and 7.8 percent (by volume) in air. By comparison, because of its lower volatility, pentane is less flammable than propane.

To evaluate the hazard limits of a catastrophic fire involving pentane at the site, the fireball hazard was modelled. This modelling predicted that the maximum injury zone radius for a fireball involving 56,000 pounds of pentane would be approximately 1,350 feet. As shown on Table 8-1, this is substantially less than the 2,000-foot minimum distance from the storage tank to the project boundary/nearest residence. In addition, the catastrophic release of pentane was modelled to evaluate the possible movement offsite of a potentially flammable cloud of pentane under various meteorological conditions. As shown also on Table 8-1, the cloud of pentane was no longer flammable (that is, the concentration of pentane in the cloud was diluted below the lower limit flammability of pentane (1.5 percent) within approximately 1,000 feet of the source, again well within the boundary of the project site.

Initial Action:

PGV will immediately notify both the Fire Department and CDA (Table 3-1) in the event of a fire at the site.

<u>Response Actions</u>:

In the event that a fire threatens major components of the project facilities, PGV will immediately implement the evacuation plan (Chapter 5) and notify the CDA (Table 3-1) that site evacuation is underway and request the presence of one of their staff at the site.

The on-site fire protection system (see Appendix A) will be automatically triggered in the power plant area in the event of any fire at the site. Different kinds of fires in the site area may also require use of different manual systems for control. The following are the actions to be taken when handling different kinds of fires at the site:

(1) Electrically Caused Fire
Extinguish with a class C fire extinguisher (ABC or BC extinguisher are also sufficient).

(2) Solvent/Petroleum/Pentane Fire
Water from hydrants will be used to cool the surrounding areas. Extinguish with a Class B fire extinguisher (ABC and BC extinguisher are also sufficient).

PGV will implement the general response conditions identified in Section 8.2 above, and thereafter evaluate the situation on a case-by-case basis. PGV will also notify the Hawaii County Planning Department regarding the fire.

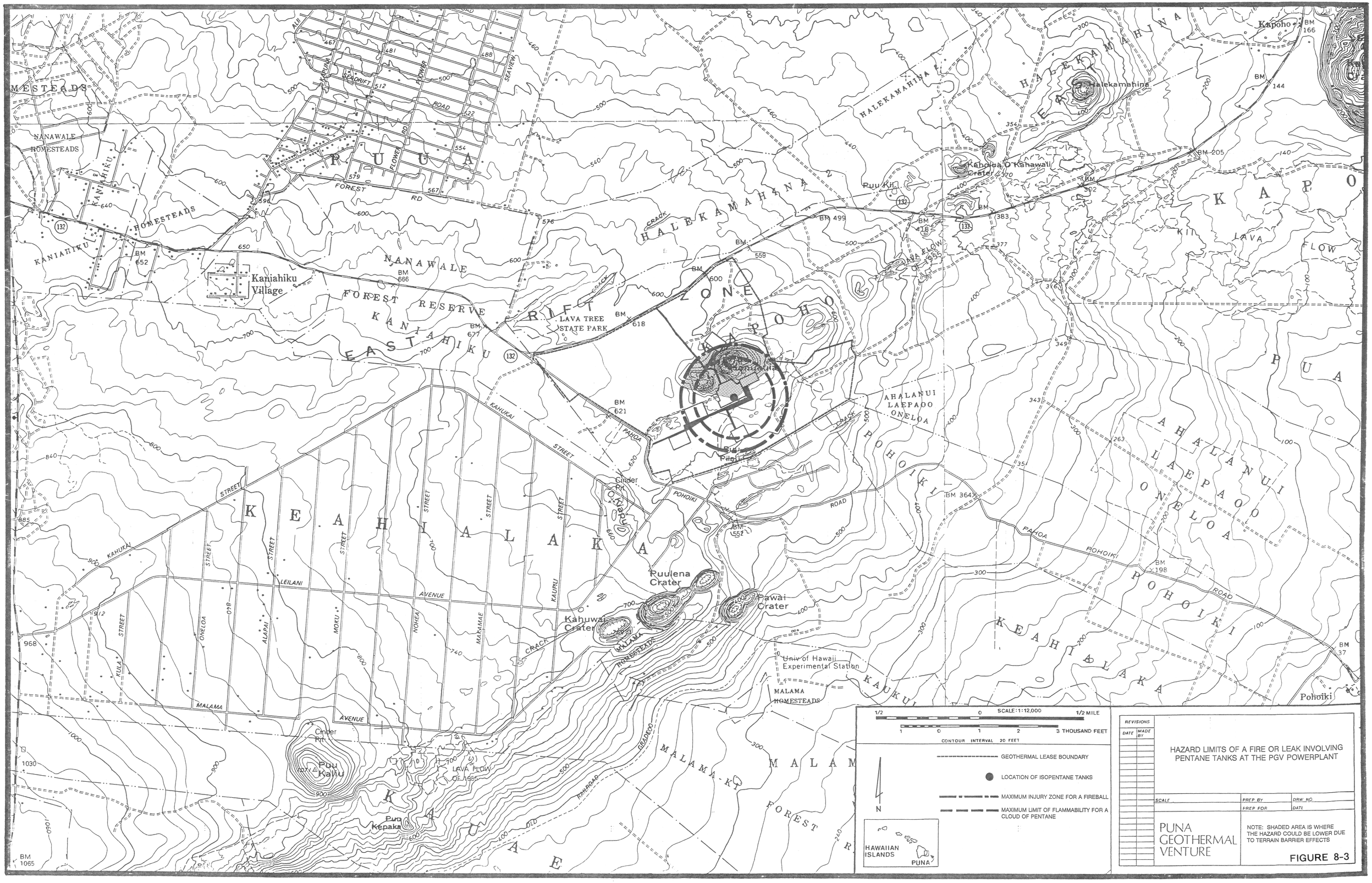

SCALE: 1:12,000
1/2 MILE
3 THOUSAND FEET
CONTOUR INTERVAL 20 FEET
GEOTHERMAL LEASE BOUNDARY
LOCATION OF ISOPENTANE TANKS
MAXIMUM INJURY ZONE FOR A FIREBALL
MAXIMUM LIMIT OF FLAMMABILITY FOR A CLOUD OF PENTANE
HAWAIIAN ISLANDS
PUNA
REVISIONS
DATE
MADE BY
HAZARD LIMITS OF A FIRE OR LEAK INVOLVING PENTANE TANKS AT THE PGV POWERPLANT
SCALE
PREP BY
DRW. NO.
PREP FOR
DATE
PUNA GEOTHERMAL VENTURE
NOTE: SHADED AREA IS WHERE THE HAZARD COULD BE LOWER DUE TO TERRAIN BARRIER EFFECTS
Kaniahiku Village
LAVA TREE STATE PARK
Pitoit
Cinder Pit
Ruulena Crater
Kahuwai Crater
Pawai Crater
Puu Kaliu
Puu Kepaka
Univ of Hawaii Experimental Station
MALAMA HOMESTEADS
Kaboloa O Kahawali Crater
Puu Kii
Kapoho
Pohoiki
NANAWALE HOMESTEADS
NANAWALE FOREST RESERVE
KANIAHIKU HOMESTEADS
KEAHIALAKA
PUUA
KAPOHO
AHALANUI LAEPAOO ONELOA
POHOIKI
HALEKAMAHINA
KAUKUI
MALAMA-KAUAE
LAVA FLOW OF 1955
KAHUKAI STREET
LEILANI AVENUE
MALAMA AVENUE
POHOIKI ROAD
FOREST RD
FLOWER RD
SEAVIEW
SEACRIFT
ALII
KAUPULI
ONELOA
ALAPAI
MOKU
NOHEAI
MAKAMAE
KULA
CRACK
RAILROAD
OLD
BM 1065

FIGURE 8-3

9.3 Noise Hazard

Nature of Hazard:

Noise is not commonly considered a hazardous condition in any situation other than the workplace, although it is a nuisance and can, following repeated exposures at high energy levels, result in a degradation of hearing acuity. The Occupational Safety and Health Administration (OSHA) has set the permissible noise exposure at 90 dBA for an eight-hour day. The HDOH has recently suggested that a noise level of 85 dBA (1-minute L_{eq}) be used for establishing when to recommend voluntary evacuation to protect public health. For the purpose of this PGV ERP, this level has been designated as the noise "Warning" level.

The most probable sources of high level noises during upset conditions would be a steam release through a pipe or pipe rupture and/or during a well blowout. In most cases, such a high noise level would result from a short-term steam release from a pipe that had ruptured or a valve or seal that had broken. Any of these conditions could produce noise levels similar to that produced from vertical well venting or steam pipeline clean out, from 75 dBA to 125 dBA 50 feet from the source. Figure 8-4 has been prepared to show the possible noise levels which would result off of the project site from these 75 dBA to 125 dBA sources, based upon a noise level drop of 6 dBA for each doubling of the distance, as discussed in the Geothermal Noise Guidelines of the Hawaii County Planning Department. Although this assumption (6 dBA reduction for each doubling of the distance) is reasonable at the closer distances, this usually underestimates the reduction in noise levels as the distance from the source increases (that is, the predicted noise level would be too high).

Initial Action:

PGV will immediately notify the CDA, Hawaii County Planning Department, and HDOH - Noise and Radiation Branch (Table 3-1) in the event that any upset of PGV's operations leads to an exceedance of the appropriate ambient noise levels (Figure 8-4).

Response Actions:

The site situation will be continuously monitored to establish the actual noise levels, and actions will be taken at the site to stop the source of the noise. PGV will continue to coordinate with the CDA and other agencies to advise them of the anticipated duration of the upset and high noise level situation.

9.4 Spills and Leaks

Nature of Hazard:

Spills or leaks of chemicals, including hydrocarbons, at the site could occur related to transfer or storage of pentane, caustic soda, treatment chemicals, diesel fuel, or unleaded gasoline. Of these, only the catastrophic spill of pentane could result in an emergency situation off-site, and this only as a result of the potential flammability of the cloud (see Section 9.1.2). Pentane is not toxic (see Appendix F), and is not hazardous outside of its flammability characteristics. Caustic soda is considered hazardous because of its corrosivity, but is otherwise not toxic, and the quantity stored on site will not be able to move off site under any upset condition (see Appendix G).

Spills of geothermal brine may also occur over the life of the project. However, the geothermal brine expected from the wells that will feed the PGV plant does not contain levels of constituents which necessitate its classification as hazardous waste. Brine chemistry will be evaluated analytically each year to monitor any changes in brine characteristics.

Response Actions:

The following are the general procedures that will be used to control and contain a spill:

1. Close all valves in pipelines leading to and from the source of the spill, giving first consideration to personnel safety in all attempts to control the release at its source.

2. The release should be contained within the smallest area possible. This may be accomplished by:

   - ☒ construction of an earthen berm around the spill and earthen dams across any drainage channels or swales in the spill area.
   - ☒ diversion of the spill to sump areas, if possible.
   - ☒ if needed, call an outside emergency cleanup contractor (Appendix E) according to the chemical nature and magnitude of the spill, the experience and training of available on-site personnel, and the availability of cleanup materials and equipment.
   - ☒ The facility response plan (Hazwoper) will be followed by employees when responding to spills or releases.

For small-scale spills or leaks of pentane, caustic soda or diesel fuel (less than reportable quantities), the following cleanup procedure will be followed:

1. Provide personnel with the proper protection as appropriate and according to the nature of chemicals involved. Appendices F & G have the Material Safety Data Sheets for pentane and 50% caustic soda, respectively.

2. After completion of activities that require the use of personal health and safety equipment, the equipment will be cleaned.

For spills larger than reportable quantities, actions taken will be similar to those provided above and in PGV's Hazwoper Program. Also, other reporting and on-site cleanup actions shall adhere to the direction required by agencies involved with compliance at the site. This shall include reporting any release of more than 100 pounds of pentane or H_2S per 24 hours to the National Response Center,

Hawaii State Emergency Response Commission, and the Local Emergency Response Commission (Table 3-1).

For spills of geothermal brine:

1. Personnel assigned to spill containment, control, and cleanup will be provided with adequate protection equipment.

2. After completion of all activities that require the use of personal health and safety equipment as described above, the equipment will be properly cleaned.

10.0 SPECIAL UPSET CONDITIONS

10.1 GRID UPSETS

10.1.1 GRID INTERRUPTION	
10.1.1.1 INITIAL INDICATIONS	
INDICATIONS	**COMMENTS**
Control room lights flicker	Normally all lights flicker at the same time.
Noise level	Noise levels in the plant change up and down. The sound type change from normal operation sound.
Numerous audible alarms on CSC Control Board	
CSC control power indicators on the control panel will vary and go to different values.	
10.1.1.2 TYPES OF INTERRUPTIONS	
TYPES	COMMENTS
Total grid loss	Both 69 KV outgoing transmission lines lose voltage. When this occurs the plant will go black, or lose total power until the emergency generator starts and produces power.
Partial grid loss	One 69 KV outgoing transmission line loses voltage. When this occurs half the OECs will trip off the line depending on the transmission line lost.
10.1.1.3 IMMEDIATE ACTIONS TOTAL GRID LOSS	
ACTIONS	COMMENTS
Maintain main steam pressure (PT-1123, A, B, C) and stabilize wellhead control valves.	When the grid is lost OECs will cease to generate and not use steam. This will cause an increase in M.S.P., wellhead valves should go closed to minimum stop. Verify correct valve action. If valves do not go closed, they may have to be closed in manual.

Verify diesel generator start .Call HELCO dispatcher and verify grid conditions and determine grid problem cause.	
After the **OECs** come to a complete stop, switch selected **OECs** to heat removal.	This will facilitate steam usage and keep the wells at a normal operating temperature until power generation can be restarted.

10.1.1.4 SUPPLEMENTARY ACTIONS FOR TOTAL GRID LOSS

ACTIONS	COMMENTS
Check electrical equipment in the field for any flags that could have occurred during grid loss.	
Check plant operation during power outage.	
Call appropriate personnel	

10.1.1.5 IMMEDIATE ACTIONS PARTIAL GRID LOSS

ACTIONS	COMMENTS
Maintain main steam pressure (PT-1123 A, B, C) and stabilize wellhead control valves.	With a partial grid loss, half the OECs will cease to generate, and not use steam. This will cause an increase in M.S.P., wellhead valves should go closed, to control M.S.P.
Call and notify HELCO dispatching.	

10.1.1.6 SUPPLEMENTARY ACTIONS FOR PARTIAL GRID LOSS

ACTIONS	COMMENTS
Check plant for proper operation.	
Call the appropriate personnel.	
Check electrical equipment in the field for any flags that could have occurred during grid loss.	
Check Cytec single line diagram for partial grid loss indications.	

10.2 AUXILIARY UPSETS

10.2.1 LOSS OF NCG COMPRESSORS	
10.2.1.1 INITIAL INDICATIONS	
INDICATIONS	**COMMENTS**
Compressor failure at CSC.	Indicator light at compressor green OFF/RUN switch will blink.
	Failure alarm will indicate on alarm print out.
NV-4145 CLOSE/OPEN/AUTO switch will activate and open-by-passing OEC NCG to mixing spool.	Valve opens at 25 psig NCG header pressure.
10.2.1.2 IMMEDIATE ACTIONS	
ACTIONS	**COMMENTS**
Dispatch operator to the NCG compressor and attempt a restart as soon as possible.	
Lower reinjection header pressure as low as possible.	
If NV-4152 is operating, open to rock muffler, or sulfa treat system.	If NV-4152 is opened to rock muffler, abatement water, and caustic system will have to be activated.
10.2.1.3 SUPPLEMENTARY ACTIONS	
ACTIONS	**COMMENTS**
Call HELCO and advise that power cut back may occur.	
Call management and advise of situation.	
If unable to re-establish NCG compressor operation begin cutting back plant power production.	Cut production back to a point where NCG can be handled without compressors.
Facilitate NCG compressor repair.	

10.2.2 LOSS OF PLANT AIR

10.2.2.1 SYMPTOMS/INDICATIONS

INDICATIONS	COMMENTS
Both plant air compressors running continuously for extended periods of time.	
Loud hissing noise.	
Plant air pressure low alarm. It alarms at 80 psig.	
Plant shut down sequence started. This is set in the control logic to start at 100 psig. When this occurs the plant will begin to ramp down.	

10.2.2.2 POSSIBLE CAUSES

INDICATIONS	COMMENTS
Loss of one or both plant air compressors.	
Unauthorized use of plant air by contract labor, or personnel not familiar with the plant air system.	
Line rupture.	
Air dryer plugging.	

10.2.2.3 IMMEDIATE ACTIONS

INDICATIONS	COMMENTS
If rupture has been identified shut the appropriate component isolation valves. Before closing the valve, consult with the valve FAIL/OPEN/CLOSE list to anticipate component isolation.	

Connect portable air compressor to the plant air system and augment the system using this air. It should be noted that air from a portable compressor is not dried and could contain traces of oil. This would depend on the location chosen for connection.	
Verify that there are no unauthorized uses of the system.	
Verify proper operation of PV-6201. This valve regulates air to the service air header.	Located between OEC's 15 & 25
10.2.2.4 SUPPLEMENTARY ACTIONS	
INDICATIONS	**COMMENTS**
Notify appropriate personnel.	PGV management, agencies etc.
Inspect the plant air system piping within the plant, including all components. If the site of the rupture is located, isolate if possible.	
If the leak is outside the power plant in the well pad areas, inspect all distribution piping, and isolate the leak if possible.	
Once located, isolate the rupture as close to the source as possible. Restore the system then start effected equipment.	

10.3 PLANT UPSETS

10.3.1 ESRF RELEASE

10.3.1.1 INITIAL INDICATIONS

INDICATIONS	COMMENTS
Rising steam pressure on main steam header	As indicated on PT-2123 A,B,C
Increasing pressure to 245 PSIG on main steam will activate ESRF. Lights at Mimic Panel in CSC for ESRF will activate.	Lights located at top section of Mimic Panel and are on valve switches.
ESRF activation will open NV-4204 Jamesbury Valve.	
At increasing steam pressure other valves in the ESRF begin to activate.	
Power plant output will increase at rising steam pressure.	

10.3.1.2 IMMEDIATE ACTIONS

ACTIONS	COMMENTS
Check main steam pressure. Reduce main steam pressure by any means.	Well control valves may have to be taken to manual and closed.
Verify correct wellhead control valve action. Correct if necessary.	
Check main steam pressure indications. Correct if necessary.	Check functions of PT-2123 A,B,C
Verify stable OEC operations. Send portable H_2S monitor downwind of ESRF to check for any H_2S release indications.	
Verify proper operation of the reinjection system.	High system pressure may cause back up of steam pressure.

10.3.1.3 SUPPLEMENTARY ACTIONS

ACTIONS	COMMENTS
Call management and appropriate government agencies.	

Verify correct and appropriate government agencies. Correct problem at ESRF system.	

10.3.2 PENTANE LEAK RUPTURE

10.3.2.1 GENERAL

INDICATIONS	COMMENTS
A Pentane rupture could result in serious personnel injuries and/or equipment damage. Pentane at high temperatures will vaporize immediately upon being released to atmosphere. This resultant vapor will make it almost impossible to distinguish the location of a rupture. Operator knowledge of system piping and component orientation will play an important role in differentiating a pentane rupture from a rupture within another high temperature, pressurized system. Extreme care should be taken to ensure personnel safety when combatting this casualty. Operator safety shall take precedence over plant operability at all times. Rapid identification and isolation of any major leak or rupture will aid in minimizing its effects on the distribution system as well as on other plant system and equipment. Pentane leaking can greatly increase the extent of the casualty by enlarging the size of The rupture. Additionally, the Pentane flow emitting from the rupture can cause serious damage to any equipment in its path. Electrical shock hazards are greatly increased due to the proximity of electrical equipment in the vapor. Subsequent to isolation of the rupture, a careful evaluation of plant conditions should be made in order to restore customer services in a timely manner. Re-entry to an evacuated area of the plant should be attempted only when deemed safe by supervisory personnel. Restore unaffected parts of the plant and realign systems as necessary to regain plant operability as soon as	

conditions permit. Additionally, the long-term effects of wetted insulation must be considered when evaluating total damage and plant recovery time.	
During a rupture of Pentane, OEC vaporizer level will be used as the controlling indicator for verifying isolation. Once the ruptured portion of the organic turbine is isolated, vaporizer level should remain constant. When any isolated portion of the organic turbine is re-pressurized, observe vaporizer level for any changes. If level decreased, the portion just isolated contains the rupture. If level remains constant, that portion may be considered intact, and remaining portions should be isolated with caution.	
10.3.2.2 SYMPTOMS/INDICATIONS	
INDICATIONS	**COMMENTS**
Loud noise of a fluid leaving a pressurized system.	
Vapor cloud.	
Organic turbine vaporizer pressure alarm accompanied by OEC power loss.	
Vaporizer low level alarm.	
Erratic alarms and indications due to vapor loss.	
Detronics detection system in the Control Room alarms and gives location of alarm.	First alarm activates at 20% Lel Detection. Second alarm will activate at 40% Lel. Multiple alarms could be an indication of leak size.
10.3.2.3 POSSIBLE CAUSES	
INDICATIONS	**COMMENTS**
Failure of a pipe and/or weld due to material defect or corrosion/erosion.	
Failure of a pipe and/or weld due to an overpressure condition.	

Physical damage to system piping or valves caused by external forces.	
Failure of fin fan tubes due to corrosion of fin fan malfunction.	
10.3.2.4 IMMEDIATE ACTIONS	
INDICATIONS	**COMMENTS**
Pentane vapors and liquids are very hazardous due to flammability. When the rupture or leak is identified, do the following:	Shut down all equipment around the leak. **NOTE:** The only exception would be if the leaks are in the fin tubes. In this case maintain fan operation until OEC is depressurized and vapor free.
Notify all plant personnel so that any equipment being used (tools, lifts, etc.) can be shut down.	
Flag off effected area.	
Set up all firefighting equipment for immediate response to a fire (train monitors, charge hoses, etc.)	
Isolation of Pentane leak may have to be done under a water blanket. This depends on the size of the leak. Personal protection is of utmost importance when dealing with a Pentane leak. Electrical equipment may have to be isolated if water protection is used.	
If the rupture is known to be within the plant, and can be readily located and isolated:	
SHUT down the affected OEC.	
STOP any affected OEC pumps.	
Isolate the effected piece of equipment on the OEC.	
Take supplementary actions to restore system operability.	
If the rupture location is not readily identifiable:	

Continue with attempts to locate the rupture.	
Take supplementary actions as necessary to locate and isolate the rupture, and restore system operability.	
10.3.2.5 SUPPLEMENTARY ACTIONS	
INDICATIONS	**COMMENTS**
Inspect the Pentane system piping within the plant, including all components.	If the site of the rupture is located, isolate it if possible and commence restoration of the system and its generating capabilities as necessary to provide the required service.
Inspect all Pentane distribution piping to each of the OECs in the complex to locate the rupture site.	Locate the rupture inside the plant as follows: After effected area has been isolated, and liquid Pentane removed, pressure test with Nitrogen to determine the actual point of the rupture.
Once located, isolate the rupture as close to the source as possible.	
Organize the necessary repair efforts to restore full system and service operability.	
Notify management personnel and customers of the casualty and the effects on services supplied by the plant.	
Once the rupture has been isolated and system restored, realign the system.	
Lock out or tag out the applicable parts of systems affected by the rupture.	

10.3.3 HYDROGEN SULFIDE

10.3.3.1 GENERAL

INDICATIONS	COMMENTS
An H_2S release may best be described as an unplanned leak of major proportion. It is a very serious casualty as it could result in personnel injury, equipment damage, the possibility of an extended outage of the power plant, and in the most extreme case, it may require the evacuation of all plant, personnel and area residents living in the vicinity of the plant perimeter. This procedure, therefore, does not address H_2S leaks of a minor nature which is addressed as part of the plants continuing maintenance plan. The key to reducing the effects of an H_2S release is the timely identification and isolation of the source of the release. Efforts to locate and isolate the leak must, however, not take precedence over personal safety. Only events as they occur will determine whether operators can remain and attempt to localize the source, or whether it is best to abandon the area or even whole parts of the plant.	

10.3.3.2 INDICATIONS

INDICATIONS	COMMENTS
Audible alarm in CSC coming from any of the Fixed H_2S detectors located strategically throughout the plant.	
Audible and printed alarm generated from any of the Fixed Monitoring Stations near the plants perimeter or in the residential areas surrounding the plant site.	
Abnormally high H_2S levels as reported by The Environmental Company (TEC).	

NCG Compressors failure due to loss of pressure on the discharge piping (logic control assuming a leak).	
Odor complaints from area residents.	

10.3.3.3 POSSIBLE CAUSES

INDICATIONS	COMMENTS
Failure of a pipe and/or weld due to material defect or corrosion/erosion.	
Failure of a pipe and/or weld due to an over pressurization condition.	
Failure of a sealing gasket located between flanged piping.	
Mechanical damage to system piping/valving.	
Safety/pressure relief valve fails in the OPEN position.	

10.3.3.4 IMMEDIATE ACTIONS

INDICATIONS	COMMENTS
Clear the affected area of all personnel and barricade the affected area.	
Implement the ERP guidelines.	
Notify the Civil Defense Agency.	Inform CDA of H2S levels internally and as noted on perimeter monitoring stations. CDA is the lead agency to determine community evacuation requirements.
Notify the Department of Health (Clean Air Branch)	
Notify County Planning Department Director	
Notify PGV Management.	
Notify HELCO of plant availability and status.	

If the source of the leak is isolatable, personnel must don SCBA's prior to entering the affected area to isolate the leak.	

If the source of the leak cannot be isolated while the plant is in operation, it may be necessary to shut in the Production Wells.	NOTE: It will be necessary to implement steps 1 through 8 in a safe an expedient manner.
10.3.3.5 SUPPLEMENTARY ACTIONS	
INDICATIONS	COMMENTS
If the source of the leak has been successfully isolated, carefully evaluate the effects of the release in respect to the overall operability of the plant.	
If the source of the leak has been successfully isolated, continue area monitoring of any residual H_2S levels.	Ensure that H_2S levels continue to decrease.
If the Production Wells were shut in, it may be necessary to allow minimum steam flow by bypassing the flash separators and directing steam flow directly into the reinjection header.	
Inform HELCO of the current plant status, and expected duration of the current situation.	

10.3.4 FIRE

10.3.4.1 GENERAL

INDICATIONS	COMMENTS
A Fire at any facility would be considered a very serious casualty. A Fire could result in personnel injury, equipment damage, and the possibilities of an extended outage of the power plant and in the most extreme case, it may require the evacuation of plant personnel. The key to reducing or minimizing the effects of a fire is the identification and response to the source of the fire.	PGV personnel will immediately notify both the Fire Department and CDA in the event of any fire on-site whether or not it seems to be an incipient fire response. No one shall enter a structure to fight a fire that cannot be put out with a fire extinguisher.

10.3.4.2 SYMPTOMS/INDICATIONS

INDICATIONS	COMMENTS
Fire Alarm in CSC	From Detronics panel or computer printout.
Visual indicators or report of flames or electrical arcs reported from plant personnel.	
Emergency Diesel Fire Pump running indications.	

10.3.4.3 POSSIBLE CAUSES

INDICATIONS	COMMENTS
Hotwork being performed in the plant	Smoking is prohibited around any flammable substance. A Hot Work Permit and a fire watch are required prior to any cutting, welding and grinding.

Flammable product making contact with hot surfaces	All flammables i.e.…Spray lubricants solvents shall be stored in the flammable locker located east of the maintenance shop in a approved flammable i.e.… Pentane and fuels shall be stored in approved storage container. All containers shall be grounded inside of a containment berm.
Electrical malfunctions/failures causing class "C" fire	Only trained personnel shall fight a fire at an incipient response level.

10.3.4.4 IMMEDIATE ACTIONS

INDICATIONS	COMMENTS
If a fire occurs at the facility, activate the Emergency Response Plan (ERP) and institute the Incident Command System (ICS). Once the Fire Department arrives, the PGV incident commander shall turnover the ICS duties of the IC to the Hawaii County Fire Department. PGV's Incident Commander shall act as an assistant to the HCFD.	Trained personnel shall also utilize the AFFF fire monitors to extinguish a fire as long *as* no additional PPE is required, and the Fire Department has been notified. See Organization structure in the ERP/HAZWOPER training procedures
If required, evacuate all non-essential personnel.	The Alarm Siren System is located on top of the CSC control building. This siren is tested each month at 11:45 am on the first working day. The siren is a steady tone alarm with a red beacon light attached. This alarm is to be used in the event of an emergency that requires potential evacuation of personnel or the activation of the Incident Command System (ICS).
Secure all operating equipment as required.	All Emergency Responders shall remain on-site to perform critical operations of the facility. As a rule, the CSC operator and Plant Technicians shall remain on-site to secure the operation of the facility. All other Emergency Response Personnel will report to their designated area to help with the evacuation of all non-essential personnel and with the emergency.

Shutdown all non-essential equipment adjacent to fire to prevent possible spreading of fire.	Annual training required to utilize, fire equipment. Refer to Safety training package.
10.3.4.5 SUPPLEMENATRY ACTIONS	
INDICATIONS	**COMMENTS**
Verify that all non-essential personnel are evacuated from the plant and accounted for by name.	All plant personnel shall strictly follow the Emergency Escape Procedures which is referred to in the ERP/EAP/HAZWOPER procedures. All PGV personnel have been issued an electronic gate key that will log employees in and out. Contractors and Visitors will be logged in and out from the CSC log. In the event of an emergency, the admin 2 personnel have been trained to print out an entry report and provide it to the Incident Commander.
Assist with first aid if required.	All Operations and Maintenance personnel have been trained in CPR and basic First-aid. Employees that have been trained will provide Basic First-aid to employee in the event of an emergency. If necessary CSC operator will **immediately notify** 1011 in the event an employee is injured. All injured employees are not to be moved unless they're located in a life threatening situation. All injured employees will be transported to Hilo Medical Center for treatment.
Notify appropriate personnel.	PGV management, agencies, etc.
Inspect plant equipment when applicable.	
Restore from casualty as situation allows.	

10.3.5 EARTHQUAKE

10.3.5.1 GENERAL

INDICATIONS	COMMENTS
An earthquake, whether large or small in magnitude and duration, presents many situations requiring operator attention. It is the operator's responsibility at the onset of an earthquake to first ensure his/her personal safety is established. After the immediate physical effects of the earthquake have passed, operators can further enhance their safety through evacuation of the plant. Then, existing plant conditions are evaluated and balanced against personnel/plant safety requirements to determine if re-entry is appropriate.	
Structures that have shaken loose and falling objects (missile hazards) present the highest danger during and after an earthquake. Operators should utilize an inherently stable structure for protection from missile hazards, i.e. desk, table and doorway.	
Consideration should be given to the proximity of the protection chosen in relation to high pressure/temperature fluid systems and electrical systems. In all cases, protection should be utilized quickly and movement through the plant suspended until the earthquake cases. Once the earthquake has stopped, immediate evacuation of personnel should commence with subsequent steps taken to ensure all personnel are present and/or accounted for at this point in time.	
Attention should be directed at this point to the integrity of the plant and collateral damage suffered by systems and structures from the earthquake. Actions to restore service systems to the Power Plant may be impractical due to damage to the distribution system and the rest of the complex.	

For this reason plant restoration should take place as system integrity is verified safe for operation and as the need exists.	
10.3.5.2 SYMPTOMS/INDICATIONS	
INDICATIONS	**COMMENTS**
Visible movement of ground and buildings.	
10.3.5.3 POSSIBLE CAUSES	
INDICATIONS	**COMMENTS**
Geological disturbances.	
10.3.5.4 IMMEDIATE ACTIONS	
INDICATIONS	**COMMENTS**
Take cover using the closest means available. Do not attempt to use stairways until the earthquake ends.	
Evacuate all non-essential personnel once the earthquake has stopped.	
10.3.5.5 SUPPLEMENTARY ACTIONS	
INDICATIONS	**COMMENTS**
Verify that all personnel are evacuated from the plant and accounted for by name.	
Perform a cursory inspection of the plant without entering the building.	
Perform the following actions concurrently:	
If no visible danger exists within the plant's perimeter, ENTER the plant and inspect the components and systems for damage.	
If required, perform the applicable system casualty procedures. Do not attempt to restore electrical power at this time.	
If electrical power is not available, RESTORE electrical power. Electrical power shall be restored only after all the MCC and lighting panel supply breakers have been opened. Reenergize buses and controllers one at a time to ensure operational integrity.	

Inspect the distribution systems for leaks or other damage as well as the conditions of all control buildings.	

APPENDICES
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APPENDIX A
DESCRIPTION OF PROJECT FACILITIES AND OPERATIONS

The PGV Project is located approximately 21 miles southeast of the city in Hilo in the Puna district of the Island of Hawaii (see attached map Figure 1.1 and 1.2). The Project occupies about 25 acres of surface area within a 500 acre project area in the Kapoho section of the Kilauea Lower East Rift Geothermal Resource Subzone

The PGV Project is designed to generate electrical energy from geothermal fluids produced from the Puna geothermal field. The project, which is planned for an operating life of 35 years, currently consists of:

- ☒ Ten (10) integrated back pressure steam turbine and air cooled binary cycle turbine power generating modules;
- ☒ Two (2) integrated Two Level Units (ITLU)
- ☒ Up to fourteen geothermal wells drilled from up to three or more wellpads;
- ☒ Brine, steam and other process pipelines;
- ☒ Pollution control equipment;
- ☒ Brine separators and accumulators;
- ☒ Switchyard;
- ☒ Office, warehouse, workshop, control building, visitors room, and related facilities;
- ☒ Access roads; and
- ☒ Auxiliary facilities such as air compressors, H_2S abatement, vapor recovery and chemical systems, fire protection equipment, etc.

Figure 1.2 shows the locations of the major project facilities. The Project delivers its electrical energy to the HELCO energy grid system.

A.1 Geothermal Wellfield Facilities

The PGV Project currently uses the geothermal wellpads A & E shown in Figure 1.2. Presently there are two production wells and two injection well on wellpad A and three production wells and two injection wells on wellpad E.

Each wellpad contains a wellpad piping subsystem. The subsystem begins downstream of the master shutoff valves at each wellhead and includes production, throttling, and isolation valves, and instrumentation required for local or remote monitoring and control of each well. A rock catcher is installed immediately downstream of each production wellhead. The subsystem includes a flash separator that flashes the geothermal fluids into steam and brine fractions.

A.2 Well Control and Safety Equipment During Drilling

Blowout Prevention Equipment (BOP) will be installed on the wellhead during all phases of drilling below depths of 800 - 1000 feet (i.e., below depth of surface casing). The BOP equipment will permit the remote shut-in of the well whether the drilling assembly is inside the well or not. Also, a kill line will be hooked up to the well during drilling in order to permit kill mud or water to be pumped into the well at anytime during drilling.

During drilling operations which could result in a steam or H_2S release, the BOP will be connected to a cyclonic muffler (for noise and brine particulate and aerosol abatement) and H_2S abatement equipment. This equipment will also be used during abated well clean out.

The BOP equipment will be operated and pressure tested after installation on each casing string per Hawaii State Department of Land and Natural Resources (DLNR) requirements. Subsequently, the BOP assembly will be tested daily during drilling.

H_2S emission sensors will be installed on the rig floor, well cellar, and mud outlets (shaker) during drilling. These sensors will activate an alarm in the drilling logging unit if ambient H_2S concentrations exceed 10 parts per million (ppm).

A wind sock will be erected at the rig in order to determine the wind drift direction in the event of an uncontrolled steam or H_2S release.

A total of 12 portable breathing air packs with a minimum 30-minute capacity will be maintained at the drilling rig for use by the drilling crew and supervisory personnel.

A.3 Turbine Generator System

The back pressure steam turbine and binary cycle power generating unit known as Ormat Energy Converter (OEC) is a closed system that, during normal operations, does not release any H_2S or other gases to the atmosphere. The steam, after expanding and passing through the steam turbine and OEC unit heat exchanger, respectively, will condense. The steam condensate is recombined with geothermal brine from initial separation and noncondensible gases produced from the reservoir. All of the produced fluids and gases are injected into the geothermal reservoir. Each steam turbine is equipped with a bypass system so that its binary unit can operate even during turbine upset conditions or plant start-up. When a steam turbine bypass system is actuated, the steam turbine bypass valves are opened and the binary unit, which is capable of operating with high temperature steam, will continue to operate. The

steam flow from the wells is reduced as necessary to accommodate the reduced production capacity of the power plant.

Expansion Plant

The ITLU consists of two turbines, each turbine is coupled to a synchronous generator. Geothermal fluid is diverted into the unit, where the brine flows through the tube section of the vaporizer (of level 1), then through the tube section of the vaporizer (of level 2) and the tube section of the preheaters of level1 and level 2, heating the organic liquid that flows through the shell section of the preheaters and then of the vaporizer, to its boiling point.

Before entering the turbine, the motive fluid vapors pass through a liquid separator located on top of the vaporizer. In the separator, drops of liquid, which are still present in the vapors, are separated to prevent impingement on turbine blades.

The liquid level in the vaporizers is regulated by level control valves (which are controlled by a level control system.

Under normal operation, organic vapor flows through turbine main valves and injection valves and enters the turbines.

In some operational modes the turbine bypass line allows vapor to bypass the turbine assembly through turbine bypass control valves and to flow directly to the condenser.

The exhausted vapor from the level I turbine flows through a recuperator to an air-cooled condenser. In level II the exhaust vapors flow directly to an air-cooled condenser. In the condensers, the vapors are cooled and condensed into liquid.

Multistage centrifugal pumps are designed to supply motive fluid to the vaporizers at vaporizing pressure.

Under normal operation conditions the entire motive fluid system is sealed and no motive fluid is lost in the process.

A.4 Non-Condensable Gas Control

Under normal operating conditions, there are no emissions of H_2S other than negligible fugitive emissions from piping joints, which are minimized through proper design, ongoing maintenance procedures, and monitoring by plant operators.

Almost all of the noncondensible gases produced from the geothermal reservoir with the geothermal fluids are partitioned with the steam in the flash separators and will pass through

the steam turbines. As the low pressure steam leaving the steam turbines is condensed in the OEC vaporizers, the noncondensible gases and residual water vapor will remain under low pressure.

These gases are piped to gas compressors which compress the gases prior to injection into the condensate. This mix is combined with the brine and ultimately, injected into the geothermal reservoir.

A.5 Steam Release Facility

Under certain relatively uncommon upset conditions of the power plant generating units, such as failure of the electrical transmission line(s) out of the power plant, complete upset of the geothermal fluid injection system, or if pressure in the steam line exceeds design set points, a steam release facility is used to release steam treated with sodium hydroxide (NaOH) to remove 96 percent of the H_2S through two rock mufflers (which will reduce noise levels) while the wellfield production rate is being reduced or shutoff. The rock muffler system is designed to handle the 100 percent of the maximum total plant flow. After this reduction, the power plant will emit less than 2 percent of full flow uncontrolled H_2S (90 percent flow control). After an upset condition is brought under control, a minimum steam/geo flow, as required to maintain an appropriate wellhead temperature, will be directed to injection wells until the plant can resume normal operation.

A.6 Electrical Systems

The power plant contains several electrical systems. The major electrical equipment includes the main power, auxiliary power, station service, and current and potential transformers; generator circuit breakers; high voltage switchgear; load centers; motor control centers; and station batteries.

The power from each of the ten (10) 13.8 KV generators feeds to the 13.8 KV busbars, with a switchgear for each generator. Each 13.8 KV busbar connects to a 13.8/69 KV step up transformer and power feeds into the HELCO switching and metering yard at a voltage of 69 KV. The 13.8 KV/480 V step down transformers supply 480 V power for all the power plant internal requirements and for the auxiliary systems.

A 1400 KW diesel generator unit is installed at the plant site to produce power for essential electrical services at the PGV site under emergency conditions, if needed. The power that would be generated from the diesel generator is sufficient to support one air compressor; the battery chargers; the heating, ventilating, and air conditioning (HVAC) system; control room systems; steam release facility H_2S abatement system; and emergency lighting.

Expansion Plant

Each of the two turbines is coupled to a synchronous generator. The generator is air-to-water cooled with a maximal output power of 8 MW, at 10 MVA, 60 Hz, 13.8 kV. The three-phase power output is distributed through the high voltage switch gear.

A.7 Control Systems

The control system consists of three control subsystems:

- ☒ Wellhead control subsystem
- ☒ OEC control subsystem
- ☒ ITLU control subsystem
- ☒ Power plant control subsystem

A.7.1 Wellhead Control Subsystem

The wellhead control subsystem includes the individual wellheads, the wellpads, the gathering systems, and the emergency steam release facility.

All wellheads are equipped with temperature and pressure gauges on the well casing below the master valves. Flow from each wellhead can be automatically controlled by plant's steam pressure. The steam flow leaving each wellpad is measured. Control valves at the steam release facility will have air and pneumatic piston operators that respond automatically to signals from the plant control room or upon sensing over pressure in the steam pipeline. The H_2S abatement system at the steam release facility operates automatically when steam is released through the rock mufflers.

A.7.2 OEC Control Subsystem

The OEC control, housed in an individual OEC control shelter located adjacent to each OEC module, controls both turbines and the entire OEC operation.

A programmable controller is used to record, process, and signal steam and working fluid pressures, voltage levels, speed, kilowatt output, and current of each OEC unit. The programmable controller provides diagnostic as well as control functions and allows the operator to isolate an individual unit for testing or repairs and then automatically restart it after the failure condition has been rectified.

The individual OEC control shed will also house the high power, high voltage components of the OEC units including the circuit breakers, magnetic contacts, fuses, transformers, power capacitors, metering instruments, overload, short circuit asymmetry, and reverse power protective devices.

ITLU Control Subsystem

The ITLU control, housed in an individual ITLU control shelter located adjacent to each ITLU module controls each turbine and the entire ITLU operation.

A programmable controller is used to record, process brine and working fluid pressures, voltage levels, speed, kilowatt output, and current of each ITLU unit. The programmable controller provides diagnostic as well as control functions and allows the operator to isolate an individual unit for testing or repairs and then automatically restart it after the failure condition has been rectified.

The individual ITLU control shelter will also house the high power, high voltage components of the a ITLU units including the circuit breakers, magnetic contacts, fuses, transformers, power capacitors, metering instruments, overload, short circuit asymmetry, and reverse power protective devices.
ITLU control, housed in an individual ITLU control shelter located adjacent to each ITLU module, controls each turbine and the entire ITLU operation.

A.7.3 Power Plant Control

The entire power plant is designed with a computerized automatic control system that will require a minimum number of personnel to operate the plant. The plant operators monitor the plant during operation from the central control station (CSC) with regular on site monitoring of all equipment. Individual and plant-wide control systems operate automatically to prevent injuries to plant personnel or equipment and to protect public health and safety. Standby equipment will start automatically to avoid tripping a turbine unit during normal operations. Monitoring data will be logged and stored in the programmable controller. Information and control signals from the individual OEC controllers will be recorded and controlled from the main power plant control room.

A.8 Auxiliary Systems

The primary auxiliary systems will be the compressed air system, HVAC system, service water system, fire protection system, vapor recovery system, H_2S abatement system and H_2S monitoring system.

A.8.1 Compressed Air System

Compressed air is required for instrumentation, control, and plant maintenance (service air) requirements. Compressed air at 100 psig is distributed throughout the plant from a central compression system that includes air compressors, desiccant type dryers, and dry air storage tanks.

A.8.2 HVAC Systems

Air conditioning will be provided for the electrical equipment and CSC. The system is designed to prevent heat buildup and maintain a positive pressure in the rooms. The air conditioning includes a sealed refrigeration system and coil, outside air supply duct, and an air distribution fan.

A.8.3 Fire Protection System

Facility safety considerations played a significant role in the plant design. The fire protection system is designed in accordance with applicable National Fire Protection Association (NFPA) and Hawaii State and local fire standards and major components of the plant's safety features include the following:

Fire Fighting: The plant is equipped with an underground fire main system, which completely encircles the OEC units. Strategically placed hydrant/monitors permit full coverage of the plant's components, including the OEC's, air coolers, control room, utility building, motor control center rooms, noncondensible gas, compressors, and pentane storage tanks. The fire main is maintained under continuous pressure by an electric jockey pump. Whenever the fire main is utilized, the system pressure momentarily drops, activating a diesel driven 2500 gpm centrifugal fire pump. The fire pump is supplied by a 500,000 gallon water storage tank located adjacent to the pump house.

Flame and Combustible Gas Detection: The entire installation of OEC's, air coolers, and pentane storage tanks are continuously monitored by a series of flame and gas detectors tied into a centralized control/alarm panel located in the plant's control room.

Halon: The plant's control room and all the OEC control shelters are protected by halon flooding systems.

FM 200: The ITLU expansion plant control shelters are protected by FM 200 flooding systems.

Sprinkler Systems: The pentane storage tanks in the power block (existing plant) and storage tank on Pad D extension (new plant) are protected by a deluge type water sprinkler system.

Portable Extinguisher: Portable extinguishers are located throughout the plant (see Figure 4.3 and Table 4.2)

A.8.4 Service and Supplemental Water

Service water is used for general purpose cleaning and maintenance of the power plant. A 250,000 gallon supply from the upper half of a 500,000 gallon tanks provides the service water for the facility.

Supplemental water may need to be added to the fluid injection system during periods of operation at low load or during start-up to ensure maintenance of the water column in the injection system, which is necessary for proper operation of the gas control system. Make-up is obtained from one of three sources. Two on-site wells with a capacity of 1,450 gallons per minute are available as the project's primary water source. A connection to the County water system has been made and is a back-up water source for the Project.

A.8.5 Vapor Recovery System

Operational and maintenance considerations require the purging of non-condensable gases (O_2, N_2) from the pentane condensers. These NCGs also contain pentane vapor. To reduce pentane emissions, these purges are routed through a Vapor Recovery Unit (VRU) or Vapor Recovery Maintenance Unit (VRMU)

Vapor Recovery Unit (VRU)

Uses a two stage refrigeration cycle

Vapor Recovery Maintenance Unit (VRMU)

Uses a 4-step recovery and an activated carbon filtration system.

Both units achieve a 95% or better recovery of pentane. The pentane recovered is returned to the pentane storage vessels in power block.

A.8.6 H_2S Abatement System (Sulfa Treat)

To reduce fugitive H_2S emissions from equipment handling the noncondensible gases, the H_2S abatement system collects potential gaseous emissions and passes them through two reactor beds which absorbs and chemically destroys any H_2S.

A.8.7 Plant H_2S Monitoring System

This system has 36 sensors located at potential H_2S emission sources and along internal plant boundaries. The sensors are tied into a panel located in control room to provide early warning of any upset abnormal or emergency condition within the plant boundaries. This system allows plant personnel to become more quickly aware of fugitive H_2S emissions so that they may be addressed.

A.9 Process Flow Monitoring Systems

The power plant is serviced by a fully automated control station which constantly monitors the facility process flows, rates, temperatures, and pressures. The status of these processes are displayed on two CRT displays, both graphically and in digital readout form, and on console gauges. Abnormal conditions are monitored via audible and visual alarms. Pressure switches and gauges are installed in the motive fluid and oil systems for monitoring and operation control. Thermistors and RTD's are installed in the motive fluid and in the electrical and lubrication oil systems to shut down the unit in case of excessive temperatures in the system. Level switches are installed in the motive fluid and lubrication oil systems to warn and to protect the unit against low or high liquid levels.

A.10 Power Plant Structures and Facilities

Buildings exist for the central station control (CSC), offices, warehouse, workshop, air compression system, emergency generator, storage for heavy equipment, and fire pumps. In addition, there are ten shelters for the OEC units.

A.10.1 Chemical Storage Facilities

The chemicals and hydrocarbons used or stored in quantities over 100 gallons at the site are 50% sodium hydroxide (caustic soda), pentane, diesel fuel, gasoline, and water treatment chemicals.

Pentane is a colorless liquid that vaporizes at 97°F. It is non-toxic or corrosive, but is flammable at concentrations between 1.5 percent and 7.8 percent (volume) in air (see Appendix F). Pentane is similar to propane (bottle gas), which is used for heating and cooking in many rural locations, but is much less hazardous than propane because of its higher boiling point and lower vapor pressure.

Each OEC unit in the power block will contain approximately 3,560 gallons of pentane. Additional pentane, as much as 9,000 gallons is stored on site in two tanks which also have sufficient capacity to receive the entire pentane contents of one OEC unit. The tanks have a design temperature of 250°F and design pressure of 150 psig. Working fluid pumps are used to transfer pentane to and from the tanks to recharge the systems or remove the pentane from OEC units requiring maintenance.

Each ITLU unit on Pad D will contain approximately 12,000 gallons of pentane. Additional pentane, as much as 6000 gallons, is stored on Wellpad D in one tank which also have sufficient capacity to receive the entire pentane contents of one ITLU unit. The tanks have a design temperature of 250°F and design pressure of 150 psig.

Caustic soda (NaOH) is a corrosive material that is toxic if ingested and can cause skin and eye irritation upon contact. It is soluble in water and used in households as a cleaning agent. Sodium hydroxide will be delivered to the site as a 50 percent solution and stored in two tanks; one with a 50 percent solution as delivered and the other tank with a 15 percent solution, diluted for use in the abatement system.

Sulfuric acid is a corrosive material that is toxic if ingested and can cause skin and eye irritation upon contact. It is soluble in water and used in households as a cleaning agent. Sodium hydroxide will be delivered to the site as a 50 percent solution and stored in two tanks; one with a 50 percent solution as delivered and the other tank with a 15 percent solution, diluted for use in the abatement system.

Secondary containment structures such as dikes or berms are constructed around the sodium hydroxide storage tanks, gasoline, diesel, and bulk treatment chemical day tanks. These tanks are segregated by distance from any incompatible materials. Applicable federal regulations (e.g., OSHA and EPA) and Hawaii regulations (e.g., DOSH and HDOH) will be incorporated into procedures and standard policies of the facility. Applicable Department of Transportation (DOT) regulations (Title 49 CFR, Section 171-178) are incorporated into the procedures for delivery of any hazardous materials used on site.

A.10.2 Fencing

A six-foot high chain link fence is installed around the power plant site boundary and each of the wellpads. A gate at each entrance to the facility restricts unauthorized access.

A.11 Construction Yard

During construction a temporary yard of about 5 acres is used next to the main entrance road to the plant, off State Highway 132. The construction yard is used for the temporary storage of construction materials and fabrication of some project components. The construction yard perimeter is fenced.

A.12 Operation and Maintenance

The operational life of the PGV Project facilities is estimated to be 35 years. The power plant and wellfield are operated in a manner that protects human health and the environment. The facility staff operates equipment, oversees production, and responds to emergency conditions. An important part of the operational phase of the project is regular maintenance and monitoring of both the power plant and the wellfield.

The power plant and wellfield operate continuously 24 hours per day, seven days per week. Qualified operators are on site at all times. Routine maintenance is conducted by workers during the normal daytime work shift. If repair work is required because of malfunction of part of the power plant modules, the maintenance work may continue 24 hours per day, seven days per week, until full power output can be resumed.

Scheduled power plant maintenance is conducted for each generating module, as needed. Thorough maintenance procedures, such as turbine disassembly and inspection, may be conducted during this scheduled maintenance, and is coordinated with HELCO to ensure the maintenance of a reliable power system.

A.13 Plant Start Up and Shutdown

The modular nature of the power plant allows a gradual start up process as relatively small increments of power are synchronized to the grid, one at a time. The total process is relatively rapid due to that small moment of inertia and small volume to be heated during each step of the start up process.

The start up of the generating modules typically begins with energizing the auxiliary systems needed for starting one OEC unit. These auxiliary systems include the air compressor, OEC lube and sealing oil pumps, condenser fans for one OEC unit, and working fluid circulation pump. The power for the auxiliary systems can be supplied either from the 1400 KW diesel generator or from the utility grid.

To start an OEC unit, the steam turbine bypass is opened, and the steam gradually let into the OEC vaporizer until it reaches full flow. After the start up and synchronization of the first OEC unit, the power plant supplies its own power and also supply power to the grid. As more OEC units are started and synchronized, the wells will be opened up to allow more steam to flow from the wellfield.

The steam turbine paired with each OEC unit can be started as soon as its OEC unit is in operation. The steam is gradually introduced into the steam turbines and increased until full load steam turbine operation is achieved.

Shutdown of each OEC/steam turbine module is handled in reverse order, i.e, first the steam flow to the steam turbine is gradually reduced while the steam turbine bypass is gradually opened. After the steam turbine is shut down, the steam to the OEC unit is gradually closed. Finally, either the diesel generator or the utility grid supplies the power to the auxiliaries after the last OEC unit has been shutdown.

A.14 Hydrologic Monitoring

The hydrologic monitoring program consists of the following activities:

- ☒ Review and update, with field measurements, the data for existing non-geothermal wells in the site area;
- ☒ Permit, drill, and sample two on-site monitoring wells;
- ☒ Obtaining background samples and water levels from existing well locations; and,
- ☒ Continue the monitoring program with quarterly water level measurements and water quality sampling and analyses at selected locations.

PGV will immediately notify the County Planning Department, State Department of Health, and the Department of Land and Natural Resources in situations when a change in any geothermal well conditions indicates there is a leak or failure in the production or injection well casing. PGV will take the appropriate steps to test the production/injection system and evaluate the related well and casing downhole conditions. If leakage of geothermal waters to the shallow aquifer is demonstrated, any leaking well would be shut-in, and an assessment of the potential impact would be made by the monitoring contractor or other qualified consultants. In addition, steps would be identified to evaluate the impact as it relates to down gradient water users.

A.15 Air Quality and Meteorological Monitoring

A total of three fixed locations are operated by PGV for the continuous off-site monitoring of ambient H_2S in accordance with the Hawaii County Geothermal Resource Permit (GRP) and the Hawaii State Department of Health Permit to Operate (PTO) permit conditions (Figure A-1). Each station contains support equipment to accumulate and average the data and a real-time alarm system in the event that ambient H_2S concentrations exceed the levels specified in the permit conditions.

The first location (southwest) is in an area in the prevailing downwind direction from most of the project activities including the power plant.

The second location (southeast) is in topographically down gradient from the power plant in an area where ambient H_2S concentrations associated with night-time drainage flow of air to the southeast from the plant site area would likely occur. In addition, this location is downwind from the plant site when the winds are from the northeast as occurs frequently in the project area in the daytime.

The third location is in an area northwest of the power plant which generally would not be directly downwind but is topographically down gradient.

A meteorological station (southwest) provides data on site meteorologic conditions (Figure A-1). Continuously-recording instrumentation on a 10-meter tower will provide data for:

- ☒ wind speed,
- ☒ wind direction,
- ☒ air temperature,
- ☒ relative humidity,
- ☒ sigma theta (calculated by the data logger), and
- ☒ precipitation.

These stations communicate data and alarm conditions to a control room computer terminal. The DOH operates three stations: one in Lanipuna Gardens and two in Leilani Estates which also communicates ambient conditions to the control room computer terminal.

In addition if an upset causes off-site H_2S emissions, PGV personnel can use portable monitors to quantify the level and exact location of any off-site emissions.

A.16 Noise Monitoring

A total of two fixed locations are operated by PGV to monitor noise. The first location (southwest) is in an area in the prevailing downwind direction from most of the project activities including the power plant. The second location (south end) is in topographically down-gradient from the power plant.

PGV recognizes the need to establish close communication with the public. Nuisance and annoyance may develop from occasional noises that, although they may not exceed levels identified in the permit conditions may occur from time to time at the site. Therefore, PGV will respond by visiting the complaint site and taking sound readings with portable sound meters. PGV also makes scheduled tours of the plant perimeter to determine sound levels. In this manner reports of permit conditions being exceeded are investigated by PGV or its monitoring contractor responding to a complaint from the public. The County can then become involved only if a specific incident, continuing or complaint-type situation cannot be resolved at this level.

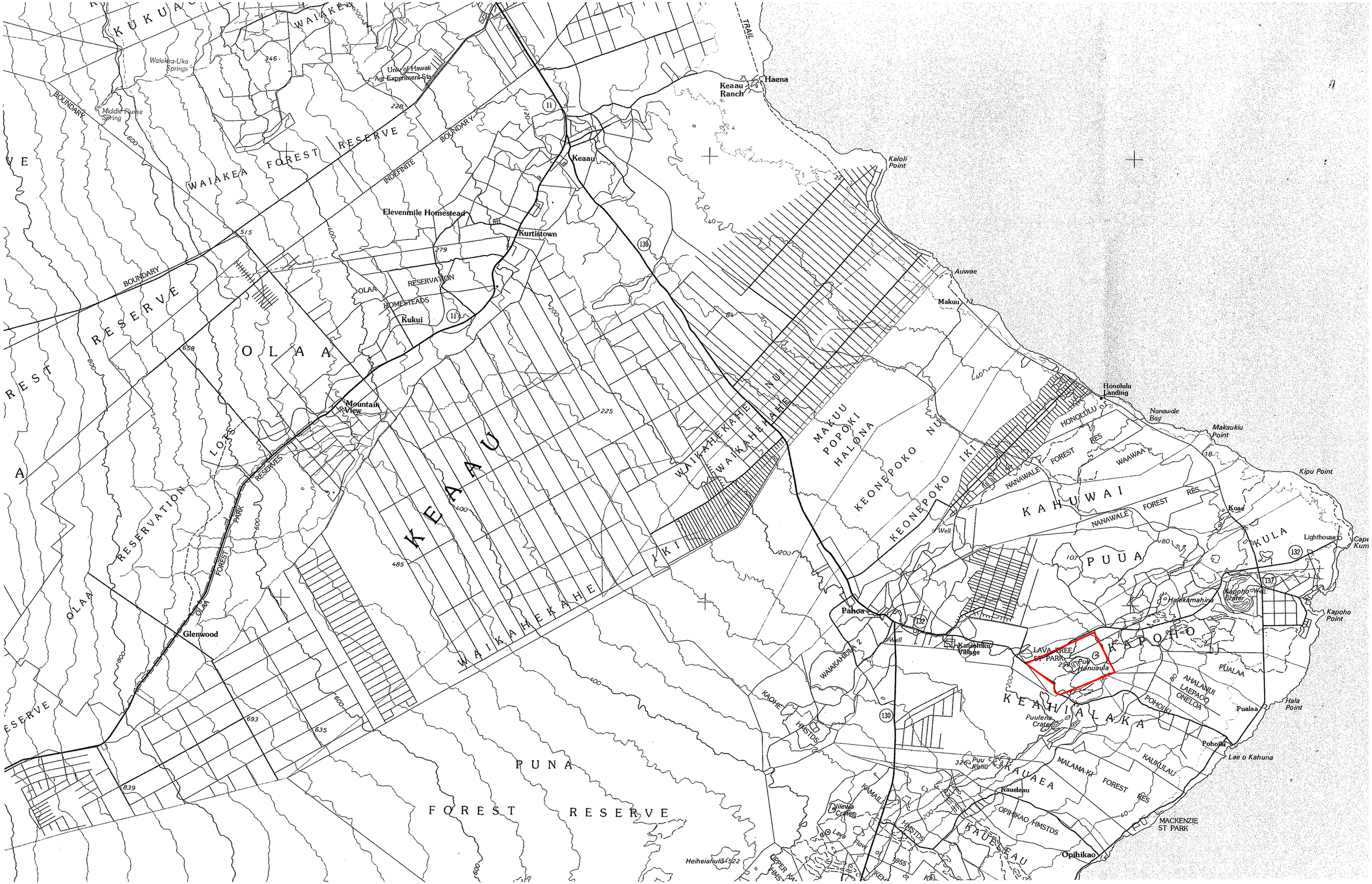
A.17 Monitoring Procedures While Drilling

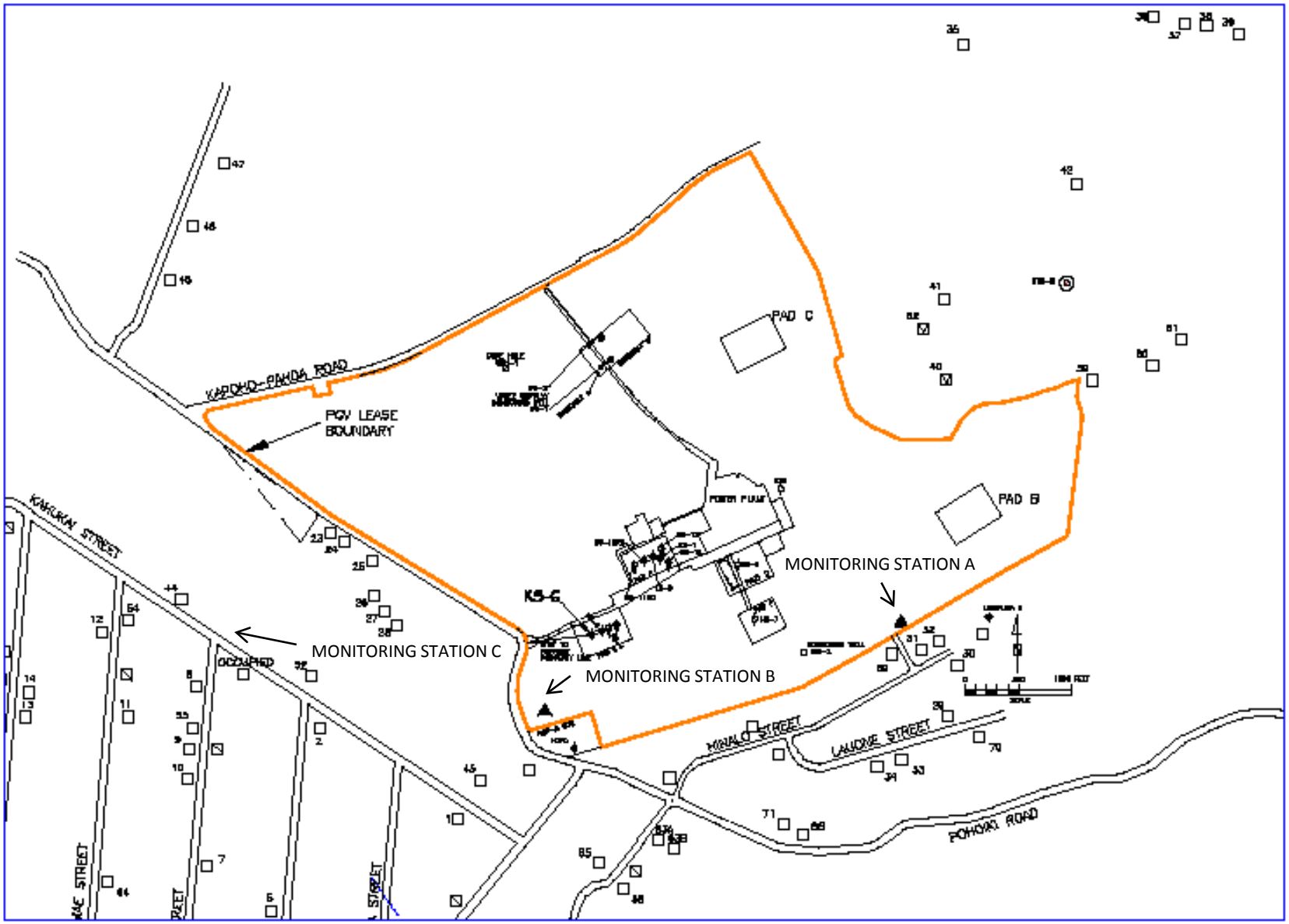
A.17.1 H_2S Releases

H_2S sensors are installed in the well cellar, rig floor and mud shaker. Measurements from these sensors are logged continuously in the mud logging trailer.

A.17.2 Well Casing Problems

Mud circulating temperature in and out are logged continuously during drilling. A rapid increase in the mud out temperature could indicate a casing problem. If this occurs, mud or water is pumped continuously into the well to keep it cool. The well can then be surveyed with temperature, caliper or sonic measurement tools to investigate the casing integrity.


KUKUA
WAIAKEA
Waiakea-Uka Springs
Univ of Hawaii Ag Experiment Sta
Middle Fume Spring
BOUNDARY
WAIAKEA FOREST RESERVE
INDEFINITE
BOUNDARY
Haena
Keaau Ranch
Keaau
Kaloli Point
Elevenmile Homestead
Kurtistown
RESERVATION
OLAA
HOMESTEADS
Kukui
BOUNDARY
RESERVE
OLAA
Mountain View
KEAAU
WAIKAHEKAHE
MAKUU
POPOKI
HALONA
KEONEPOKO
Auwae
Makuu
Honolulu Landing
Nanawale Bay
Makaukiu Point
HONOLULU
FOREST RES
WAAWAA
NANAWALE
KAHUWAI
Kipu Point
Koae
Lighthouse
Cape Kumu
KULA
PUUA
Halekamahina
Kapoho Crater
Well
Kapoho Point
Pahoa
Kapohiku Village
LAVA TREE ST PARK
Puu Honuaula
KAPOHO
PUALAA
AHALANUI
LAEPAOO
ONELOA
POHOIKI
Pualaa
Hala Point
KEAHIALAKA
Puulena Crater
Pohoiki
Lae o Kahuna
KAUKULAU
MALAMA-KI
FOREST RES
KAUAEA
Puu Kahu
Kauleau
OPIHIKAO HMSTDS
KAUEAU
Opihikao
MACKENZIE ST PARK
Glenwood
PUNA
FOREST RESERVE
Heiheiahulua
Lava Flow
Ilewa Crater
KAOHE
HMSTDS
WAIAKAHIULA
KAMAILE
UPPER KA
1955



	PGV GEOTHERMAL VENTURE	DATE 7/30/2008	BY: WAL TENLOW
			FIGURE 1

APPENDIX B

COURSE CONTENT - HYDROGEN SULFIDE SAFETY TRAINING

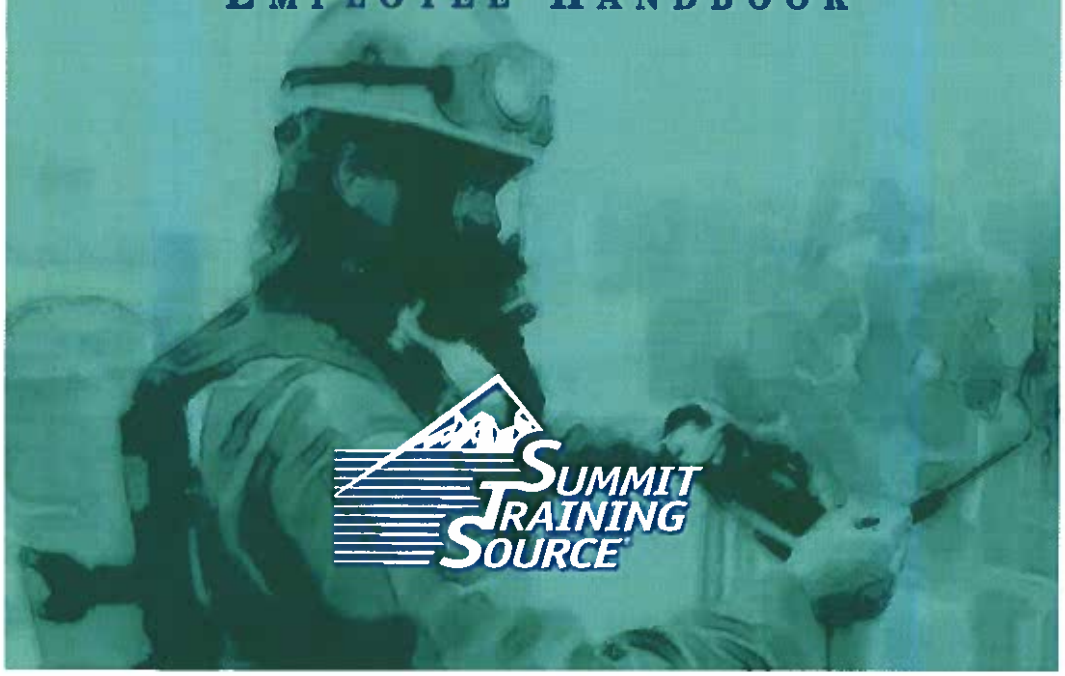
B1 – H2S Summit Training Program

B2 - PGV Training Program

PGV TRAINING PROGRAM

HYDROGEN SULFIDE SAFETY

EMPLOYEE HANDBOOK



SUMMIT TRAINING SOURCE®

Why These Guidelines Are Vital to Your Safety

In very low concentrations, hydrogen sulfide is a nuisance due to its distinctive, unpleasant odor. In very high concentrations, however, exposure can be fatal—paralyzing breathing ability and causing nearly instantaneous death.

While the effects of exposure can vary from person to person, by understanding and respecting the potential hazards, you can work safely with hydrogen sulfide.

In this handbook, "Hydrogen Sulfide Safety," you will learn:

- What hydrogen sulfide is
- Potential hazards associated with hydrogen sulfide
- Best Safety Practices you can use to reduce your risk

Potential Hazards

Hydrogen sulfide is released primarily as a gas. It is heavier than air, meaning concentrations of hydrogen sulfide are greatest near the ground or in low-lying areas.

Hydrogen sulfide's distinctive "rotten egg" smell can be detected at very low concentrations, as low as 5 to 10 parts per billion. As an example, one part per billion is about the same as a thimble of gas in a theatre full of air.

Agencies have established requirements and guidelines to limit exposure. An 8-hour threshold limit value of 10 parts per million has been established for exposure to hydrogen sulfide. A 15 minute short-term exposure limit of 15 parts per million has also been established with a ceiling limit of 20-parts per million.

Hydrogen sulfide is irritating to the eyes and respiratory tract. Eye irritations may persist for several days. Symptoms include scratchiness, tearing, and burning. Respiratory tract symptoms include coughing, pain in breathing, and pain in the nose and throat. Most symptoms disappear when exposure stops.

The gas may be present around pumps, valves, and pipe fittings. Compressors or relief valves may also emit hydrogen sulfide gas. Since the gas is heavier than air, confined spaces, like sewers, manholes, tunnels, utility vaults, boilers, or tanks, may be collection points.

Liquids containing hydrogen sulfide may be present on or near wastewater piping systems.

Hydrogen sulfide is extremely flammable. Both the liquid and the gas pose a serious fire hazard if released. Since the gas is heavier than air, and can remain in the air for long periods of time, it can travel long distances along floors or the ground. An ignition source distant from where the gas was released can cause ignition and flashback, with a resulting fire or explosion.

Key Point

Exposure to very high concentrations of hydrogen sulfide—over 700 parts per million—may result in collapse, coma, and death from respiratory failure, even in very brief exposures.

Key Point

The key to working safely with hydrogen sulfide is detection—knowing when and where the gas is present.

A **portable monitor** should be used to test air quality before using any equipment that may be a source of ignition, and as part of every confined space entry procedure.

Since high concentrations can paralyze your sense of smell, do not rely on your nose to detect the presence of hydrogen sulfide. Just one breath of a very high concentration of the gas can be fatal.

If a fixed or personal monitor sounds, immediately leave the area. Your health and safety depend on your quick reaction to the alarm. Report the incident to your supervisor. Reenter the area only after testing has occurred and concentrations have returned to acceptable levels.

Key Point

If the alarm on your personal air quality monitor or if a fixed monitor sounds, immediately leave the area. Your health and safety depend on your quick reaction to the alarm.

SCBA respirators supply clean air from a cylinder worn on the back. The air flows through a regulator to a mask, providing clean air to the user. The air supply is typically rated for 30 to 60 minutes, but actual times may vary according to body size, physical condition, and the type of work activity. An alarm sounds when the air supply is low.

A combination air line respirator with an escape pack provides a small cylinder of air for escape if the air line supply is cut off.

- Since hydrogen sulfide irritates the eyes, it is recommended that a full-face piece be used when working in environments where there is a potential for exposure.
- Before wearing any type of respirator, you must complete a medical questionnaire, be fit tested, and receive training on the proper use and limitations of the respirator to be used in your workplace.

Since hydrogen sulfide is **extremely flammable**, keep sparks, heat, or open flame out of any area where hydrogen sulfide may be present. Be sure all electrical equipment is grounded before use and is equipped with a ground fault circuit interrupter. If possible, use only spark-proof tools or explosion-proof equipment.

If you must use spark-producing equipment in areas where the gas may be present, always comply with your site's procedures and policies. Monitor air quality before using these tools or equipment, and follow all safe work permit procedures in place for identifying potential hazards in your work area.

Key Point

Only respond to an emergency according to the level of your training, never respond to a situation for which you are not prepared.

Only authorized personnel should attempt rescue operations. Do not attempt rescue if you have not been trained. Rescuers should always work in the buddy system. At a minimum, an air supplying respirator and gloves must be worn. Under certain conditions, fire retardant clothing may also be necessary. Only authorized personnel should administer bottled oxygen or perform CPR.

Secure the area to be sure no one else can be exposed. Use tape or barricades to block access to the area.

Report the incident to your supervisor or safety staff.

Safety Quiz

To review your knowledge of Hydrogen Sulfide Safety, answer the questions below.

Your Name _____ Date _____

1. Characteristics of Hydrogen sulfide include all of the following except:
   a. Toxic
   b. Colorless
   c. Flammable
   d. Odorless
   e. Heavier than air

2. Since hydrogen sulfide is heavier than air, concentrations of it are often found _____.
   a. In high places and along ceilings
   b. Along the ground or low-lying areas
   c. Near doorways and windows
   d. None of the above.

3. Regulatory agencies have established limits for exposure to hydrogen sulfide. An 8-hour threshold limit value of ___ parts per million has been established.
   a. 20
   b. 10
   c. 45
   d. 40

4. Exposure to high concentrations of hydrogen sulfide—over 700 parts per million—may result in collapse, coma, and death from respiratory failure, even in very brief exposures.
   a. True
   b. False

Notes

APPENDIX C

COURSE CONTENT - BLOWOUT PREVENTION TRAINING FOR DRILLING OPERATIONS

AMERICAN WELL CONTROL & SAFETY LLC

WellCAP Accredited

MODULAR FULL - COMBINATION WELL CONTROL COURSE FOR DRILLING; WELL COMPLETION/WORKOVER and WELL SERVICING , WITH SUBSEA OPTION

Modular Format

Outline

DAY 1 - 8 HOURS

TOPIC I – Enrollment and Orientation (1 hour)

TOPIC II – Pressure Concepts (2 hours)

A. Pressure Gradient

B. Hydrostatic Pressure and U-tube concept

C. Formation Pressure

D. Fracture Pressure and Gradient

1. Methods of determination

E. Friction Pressure

1. Equivalent circulation density (ECD)
2. Slow pump pressure, slow pump rate

TOPIC III – B O P EQUIPMENT Configuration (1 hour)

A. Components

B. Annular Preventers

C. Ram Preventers

D. Drilling Spool or integral body valves

E. Accumulators

F. Other equipment

G. Video – PETEX – "Causes and prevention of blowouts – Part III Equipment)

TOPIC IV - KICK Detection (2 hours)

A. Kick indicators

B. Elements necessary to take a kick

C. Causes while drilling

D. Causes while tripping

E. Warning signs while drilling

F. Warning signs while tripping

G. Blowouts

1. Definition
2. Reasons for Blowouts
   a) Video –(Petex –"Causes and Prevention of Blowouts" Part 1)

TOPIC V - SHUT-IN PROCEDURES (1 hour)

A. Shut-in procedures--Surface stack while drilling

1. Pick up the Kelly
2. Stop pumps and do a flow check
3. If well flows, shut the well in

a) **<u>The Soft Shut-in</u>**
b) Stop the rotary, sound the alarm
c) Open the remote choke-line (HCR) valve
d) Close the annular preventer
e) Close the drilling choke
f) Adjust closing pressure on the BOP
g) Read and record SIDPP, SICP, Pit Gain
h) Notify supervisor

i) **<u>The Hard Shut-in</u>**
j) Stop the rotary, sound the alarm
k) Pick up the string until tool joint clears the rotary table
l) Stop the pumps
m) Close the pipe rams
n) Confirm all flow has stopped
o) Open the HCR valve
p) Read and record SIDPP, SICP, Pit Gain,

B. Shut-in procedures--Surface stack while tripping

1. Set the drillpipe on slips
2. Sound the alarm
3. Install an FOSV
4. Close the FOSV
5. Open the HCR valve to choke
6. Close the BOP
7. Close the choke
8. Confirm flow has stopped
9. Install Kelly then open FOSV
10. Record SIDPP, SCIP, Pit gain, and time
11. Notify supervisor

C. Shut-in Drill Pipe Pressure

1. Definition
2. Differential Pressures

D. Shut-in Casing Pressure

1. Definition
2. Differential Pressures

E. Trapped Pressure

1. Definition
2. Trapped pressure
   a) Bleed no more than ½ barrel at a time

   Example of drillpipe and casing pressure liquid vs. gas kick

F. Diverter

1. Minerals Management Service (MMS) on the use of diverter systems
2. Diverter equipment and purpose
   a) Annular preventer
   b) Diverter lines and hydraulic valves

   Diverter procedure

TOPIC VI - SIMULATOR EXERCISE: ORIENTATION & SHUT-IN PROCEDURES (1 hour)

Each team executes a shut-in, other teams will observe the active team.

DAY 2 - 9 HOURS

TOPIC VII – MMS Regulations Subpart D & F(1 hour)

A. 30 CFR Part 250 Subpart D---Oil and Gas Drilling Operations

B. 30 CFR Part 250 Subpart F--- Oil and Gas Well Workover Operations

C. Bridging documents. Company & contractor differences addressed.

TOPIC VIII - Volume Calculations (1 hour)

A. Workbook exercises 1 -4

B. Pulling pipe and / HP loss

TOPIC IX - FLUIDS (1 hour)

A. Drilling fluids

B. Completion and workover fluids:

C. Types of well bore fluids

TOPIC X – Constant Bottomhole Pressure Well Control Methods (1.5 hours)

Video –(PETEX –"Causes and Prevention of Blowouts" Part II)

Objectives of well control methods

Driller's Method

The Driller's method takes two circulations;

Shut-in the well
Record SIDPP, SICP, and Pit Gain
Open choke and bring pump to SPR while pumping CMW
Maintain casing pressure at or slightly above SICP using the choke
After SPR is achieved, use drill pipe gauge to maintain BHP
Shut the well in after influx is removed from the well.
Back pressure on both gauges should read original SIDPP (at a minimum)
Complete Kill Work sheet
Open choke and bring pump to SPR while pumping KMW
Maintain casing pressure at or slightly above SICP using the choke
After SPR is achieved, use casing gauge to maintain BHP
After drill pipe is full of KMW, use drill pipe gauge to maintain BHP
Maintain Drillpipe pressure until KMW reaches surface.
Verify mud weight
Close well in
SIDPP & SICP should read "0".
Clear floor, open BOP and resume operations

Wait and Weight Method

The wait and weight takes one circulation;

Detect kick, shut well in.
Allow pressures to stabilize.
Record the SIDPP, SICP, Pit Gain
Complete kill worksheet
Bring mud weight to KMW.
Attain SPR while holding casing gauge at or slightly above SICP
Once SPR has been reached observe the DP gauge; it should indicate ICP.
Keep pump rate constant, pressure will decrease as KMW fills the DP. DP pressure drop should follow schedule with minor adjustments to choke.
When the KMW reaches the bit, hold FCP until the KMW reaches the surface.
Stop the pumps, close the well in, check pressures, if no pressure, open choke and check for flow.
No flow – clear the floor and open the BOP
Resume operations (Make necessary calculations)

TOPIC XI - KILL SHEETS (2 hours)

A. Demonstration (Kill Sheet Problem #9000')
B. Do Kill Sheet Problem announced by instructor

TOPIC XII - SIMULATOR EXERCISE: KILL PROCEDURES (1 1/2 hour)

Students simulates kill operation, using the driller's method.

TOPIC XIII - WORKBOOK SESSION (1 hour)

Student not involved in current simulator exercises will work on practice problems in workbook.

DAY 3 - 9 HOURS

9 hours for drilling then test, 9 hours for workover then return for day 4

TOPIC XIV – MMS Regulations Subpart D, F, E, C, and O (30 min)

A. Class goes over regulation questions in part 2 of workbook

TOPIC XV - BOP TESTING PROCEDURES (video) (30 min)

PETEX – "Blowout Preventer Controls"

TOPIC XVI - WELL COMPLETION WELL CONTROL PROBLEMS (15 min)

A. Multiple Completions

B. Performing a drill-stem test

C. Underbalanced operations

TOPIC XVII – Do Kill Sheet Problem announced by instructor to be done on simulator using the wait & weight method.(1¾hours)

TOPIC XVIII - SPECIAL PROBLEMS (30 min.)

A. H_2S

B. Off Bottom Kills

C. Open hole kick (Top Kill)

D. Volumetric method

E. False Kick Indicators

F. Drill string washout

G. Stripping pipe

H. Snubbing, coil-tubing and small tubing

I. Dynamic Lubrication Methods

J. Pipe reciprocation during well kill. page 7-11

TOPIC XIX - SIMULATOR EXERCISE (1 ½ hours) with multiple situations. (The kill sheet was done on day 2). Crews will be brought in separately to ensure solutions aren't to be passed from crew to crew.

TOPIC XX - Review Workbook (1 hr.)

TOPIC XXI - SIMULATOR EXERCISES (1 1/2 hours)
strip pipe in the hole using an annular preventer. All students work together on calculations.

TOPIC XXII – Do kill sheet assigned by instructor and simulate (1 ½ hrs.)

TOPIC XXIII - TEST DRILLING & COMBINATION STUDENTS

(2 hour time limit)

A. Drilling Test (Written)

DAY 3 / 4

COMPLETION/WORKOVER day 3 for 4 hours or
COMBINATION/WellServicing day 4 for 9 hours

TOPIC XXIV – MMS Regulations Subpart F (30 min.)

A. 30 CFR Part 250 Subpart F – Workover
B. Field rules

TOPIC XXV - REASONS FOR COMPLETION WORKOVER OPERATIONS (30 min.)

A. Definitions: Completing Operations
B. Definitions: Workover Operations

TOPIC XXVI - LIVE WELL OPERATIONS (30 min.)

A. Techniques for controlling or killing a producing well
   1. Bullheading
   2. Volumetric Method
   3. Lubricate and bleed
   4. Snubbing unit
   5. Coiled Tubing operation
   6. Packer uses and operation
B. Preparing for well entry

TOPIC XXVII – Simulator Exercise (1 ½ Hours)

A. Static well operations: Underbalance a static well and return it to production.

TOPIC XXVIII – PACKERS (1 hour)

A. Purpose of a packer
   1. Types of packers
   2. Setting a packer
      a) Hydraulic
      b) Mechanical
      c) Electric wireline
      d) Sandline (slickline)
B. Calculate differential forces exerted on a packer (example on board)

TOPIC XXIX – TEST - WORKOVER / COMBINATION STUDENTS (2 hour time limit)

A. **Completion/Workover Test (Written)**

TOPIC XXX – Coiled Tubing (2 1/2 hours)

A. Uses
   1. Sand washing
   2. Spotting acid
   3. Cementing
   4. Cleanout
   5. Drilling
   6. Milling

B. Advantages

C. Disadvantages

D. Equipment
   1. Power Pack
      a. Prime mover
      b. Hydraulic System
   2. Tubing Injector
   3. Tubing Reel
      a. Reel mechanism
      b. level wind mechanism
   4. Stripper assembly
   5. Blowout Preventers
   6. Operating Console
   7. Accessories and auxiliary equipment
      a. Tubing depth counter
      b. Hydraulic crane
      c. Freestanding injector base
      d. Fluid pumping unit
      e. Liquid pump
      f. Tanks and mixing equipment
      g. Centrifugal pumps

8. Coiled tubing calculations
   a. Tubing volumes
   b. Cased hole
   c. Inside tubing

TOPIC XXXI - SIMULATOR EXERCISE: Circulating well (1 1/2 hour)

Students participate in simulator exercise calculating volumes and spotting acid at the perforations in practice well.

TOPIC XXXII - SMALL TUBING OPERATIONS (30 min.)

A. Applications

B. BOP equipment

C. Flow string systems

D. Pump down equipment

E. Small Tubing Calculations

1. Hole Volumes
2. Hydrostatic Pressure
3. Pressure losses

TOPIC XXXIII - WELL EQUIPMENT (30 min.)

B. Surface equipment

C. Down hole tools and tubulars

TOPIC XXXIV - WELL SERVICING / COMBO Students

(1 hour time limit)

Well Servicing Test -written

Day 5

SUBSEA *(4 Hours)*

TOPIC XXXV - MMS Regulations Subparts C, D, E, F (45 min.)

A. Cover Subsea specific operations in the following subparts
B. 30 CFR Subpart C – Pollution
C. 30 CFR Subpart D – Drilling
D. 30 CFR Subpart E – Completion
E. 30 CFR Subpart F -- Workover

TOPIC XXXVI - SUBSEA EQUIPMENT (45 min.)

A. Diverter system

1. Shallow flow prior to BOP installation
2. Shallow prevention technique, procedures and practices
3. Shallow flow well control methods

B. BOPE

1. Marine riser systems
2. BOP control systems
3. BOP stack
4. Ball joint
5. Flex joint
6. Slip joint
7. Riser dump valve

a. Reasons
b. Consequences

8. Control options

TOPIC XXXVII - SUBSEA WELL CONTROL CONSIDERATIONS (30 min.)

A. Early kick detection
B. Tripping practices
C. Circulating practices
D. Connecting and rotating practices
E. Ballooning
F. Hydrates
G. Risers
H. Fluids
I. Choke line friction pressure (CLFP)

TOPIC XXXVIII - SUBSEA SHUT-IN PROCEDURES (15 min.)

A. Pre-kick preparation
B. Hard vs Soft shut-in
C. While drilling

D. While tripping

E. Shut-in with bit above BOP's

F. Shut-in with casing or liner

TOPIC XXXIX – CONSTANT BOTTOM HOLE PRESSURE METHODS (15 min.)

A. Drillers method
B. Wait and weight method

TOPIC XXXX - KILL SHEET & SIMULATION (1 1/2 hour)

Students complete a Subsea kill worksheet and use data to complete kill on simulator using the wait and weight method.

TOPIC XXXXI - TEST SUBSEA STUDENTS

(1 HOUR TIME LIMIT)

B. Subsea Test (written)

WellCAP Quality Statement & Comment Policy

Dear Training Participant:
IADC is committed to ensuring that its accredited training providers offer quality instruction and adhere to high standards of conduct. One of the ways we can continue to improve our accreditation system is by listening and responding to the views of training participants. IADC wishes to ensure that:

1. making a comment is as easy as possible
2. we treat any unfavorable comment regarding accredited training providers seriously.
3. we will respond in the right way – for example, with an investigation, an explanation, or collection of further information before taking appropriate action.
4. we learn from comments received and use them to improve the quality of our accreditation program.
5. our training providers learn from comments received and use them to improve the quality of the instruction they provide.

How do you make a comment?
You can comment in person, in writing, by fax, by e-mail, by telephone, or through a form on the IADC website through the addresses listed below.
Please provide sufficient detail concerning your course experience to permit IADC to collect further information as needed (course date, location, training provider, etc.) Your contact information is optional, but will assist IADC if follow-up communications are required.

In Person:	IADC Headquarters 10370 Richmond Ave., Suite 760 Houston, TX 77042 USA	
In Writing:	Western Hemisphere: IADC PO Box 4287 Houston, TX 77210-4287 USA	Eastern Hemisphere: PO Box 1430 6501 BC Nijmegen, The Netherlands
By Fax:	Western Hemisphere: +1-713-292-1946	Eastern Hemisphere: +31-24-360-0759
By Telephone:	Western Hemisphere: +1-713-292-1945	Eastern Hemisphere: +31-24-675-2252
By e-mail:	*training@iadc.org*	
Website:	*www.iadc.org/wellcap/comments.htm*	

APPENDIX D

POST EMERGENCY RESPONSE PROCEDURES

WRITTEN CONFIRMATION OF RELEASES/INCIDENTS

Following the occurrence of a release of a reportable quantity or any emergency situations described in this plan and in compliance with the GRP, PTO and other County or State requirements, a report will be prepared by the PGV environmental representative or designee of the incident and the appropriate report will be transmitted after review by PGV management to the appropriate individuals and agencies listed below:

- ☒ Federal National Response Center
- ☒ Hawaii County Civil Defense Agency
- ☒ Hawaii County Planning Commission
- ☒ Hawaii State Department of Health, Clean Air Branch
- ☒ Hawaii State Emergency Response Commission
- ☒ Hawaii State Department of Land and Natural Resources
- ☒ Local Emergency Planning Commission

The written notification will include an update of verbal notification information plus the following:

- Actions taken to respond to and contain the release.
- Any known or anticipated acute or chronic health risks associated with the release; and
- Where appropriate, advice regarding medical attention necessary for exposed individuals.

FOLLOW UP INVESTIGATION

PGV's Incident Investigation Team shall compile all documentation and perform a post-incident investigation. Using the following procedure from PGV's Incident Investigation and Reporting Program:

- An incident report shall be submitted before the end of the work shift.
- PGV shall initiate an investigation no later than 48 hours following the incident.
- To guide and document this effort, PGV has developed an incident and investigation form which includes the following:
    - ☒ Date of incident
    - ☒ Date investigation began
    - ☒ A detailed description of the incident
    - ☒ Factors that contributed to the incident
    - ☒ Recommendations resulting from the investigation
- All investigations shall be completed in an efficient and timely fashion, and the results of the investigation distributed for recommendation follow-up and review with personnel.
- The Plant Engineer shall be responsible for follow-up and issuance of monthly status reports until all recommendations are completed.

APPENDIX E
EQUIPMENT AND SERVICE CONTRACTORS

CRANES AND TRUCKS

Yamada Trucking	*Office*
	933-8400
Industrial Crane	
Keaau Services	*Office/Fax*:
	966-9373
Justin Alonzo	960-1238

PROPANE REMOVAL

Hawaii Gas	*Office*
	935-0021
Darrell Ramos	491-3098

WELDERS/CUTTERS

Curt Neil	1-903-931-1899
Denali Welding	217-2379

MACHINING SERVICES

Pacifica Services	*Office*
Trent Bateman	345-6600

APPENDIX F
PENTANE SAFETY DATA SHEET

ConocoPhillips
Specialty Solvents

MATERIAL SAFETY DATA SHEET
n-Pentane (Pure Grade)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: n-Pentane (Pure Grade)

Synonyms: Normal Pentane
Pentane

Intended Use: Solvent

Chemical Family: Aliphatic hydrocarbon

Responsible Party: ConocoPhillips Specialty Solvents
Borger, Texas
79007

For Additional MSDSs (800) 762-0942

Technical Information: (832) 486-3339

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison Control System: (800) 356-3129

Health Hazards/Precautionary Measures: Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Extremely flammable liquid and vapor. Vapor can cause flash fire. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Colorless

Physical form: Liquid

Odor: Mild, gasoline-like

NFPA Hazard Class:

Health: 1 (Slight)
Flammability: 4 (Extreme)
Reactivity: 0 (Least)

HMIS Hazard Class

Health: 1 (Slight)
Flammability: 4 (Extreme)
Physical Hazard: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% WEIGHT	EXPOSURE GUIDELINE		
		Limits	Agency	Type
n-Pentane	99.7	600 ppm	ACGIH	TWA
		1000 ppm	OSHA	TWA

CAS# 109-66-0	1500 ppm	NIOSH	IDLH

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

All components are listed on the TSCA inventory.

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Contact may cause mild skin irritation including redness, and a burning sensation. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin leading to dermatitis (inflammation). No information available on skin absorption. Studies of other exposure routes suggest a low degree of hazard by skin absorption.

Inhalation (Breathing): Low degree of toxicity by inhalation.

Ingestion (Swallowing): Low to moderate degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, vomiting, diarrhea, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue) and abdominal pain.

Cancer: No data available.

Target Organs: Inadequate data available for this material.

Developmental: Inadequate data available for this material.

Other Comments: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as Solvent or Painters' Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.

Inhalation (Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

5. FIRE FIGHTING MEASURES

Flammable Properties:
Flash Point: -56.2°F/-49°C (TCC, ASTM D56)
OSHA Flammability Class: Flammable Liquid
LEL%: 1.42 / UEL%: 7.8
Autoignition Temperature: 588°F/309°C

Unusual Fire & Explosion Hazards: This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended.

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and absorption. Examples of approved materials are nitrile, or Viton® (see glove manufacturer literature for information on permeability).

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).
Appearance: Colorless
Physical State: Liquid
Odor: Mild, gasoline-like
pH: Not applicable
Vapor Pressure (mm Hg): 15.6 psia @100°F (37.8°C)
Vapor Density (air=1): 2.49
Boiling Point/Range: 98°F / 37°C
Freezing/Melting Point: -129.7°C
Solubility in Water: Negligible
Specific Gravity: 0.63 @60/60°F (15.6/15.6°C)
Percent Volatile: 100 vol.%
Evaporation Rate (nBuAc=1): >1
Viscosity: 0.23 cp @ 68°F (20°C)
Bulk Density: 5.25 lbs/gal
Flash Point: -56.2°F / -49°C (TCC, ASTM D56)
Flammable/Explosive Limits (%): LEL: 1.42 / UEL: 7.8

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong acids, selected amines, strong bases and oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon dioxide and carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Chronic Data: No definitive information available on carcinogenicity, mutagenicity, target organ, or developmental toxicity.

Acute Data:
Pentane: Dermal LD50=No data available
LC50>6,106 ppm (4-hr., Rat)
Oral LD50>2,000 mg/kg (Rat).

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001). If the spilled or released material impacts soil, water, or other media, characteristic testing of the contaminated materials may be required prior to their disposal. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Pentanes,3,UN1265,I
Bulk Package Placard/Marking:	Flammable/1265
Hazardous Substance/RQ	None
Packaging References	49 CFR 173.150, 173.202,173.242
Emergency Response Guide:	128

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

SARA 313 and 40 CFR 372:
This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

--None--

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

--None Known--

Carcinogen Identification:
This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

EPA (CERCLA) Reportable Quantity:

--None--

Canada - Domestic Substances List: Listed

WHMIS Class:

B2-Flammable Liquid
D2B-Materials causing other toxic effects - Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Issue Date: 01/08/03
Previous Issue Date: 03/21/02
Revised Sections: 1, 2, 8, 11, 13, 16
Previous Product Code: Multiple
MSDS Number: 003459
Status: Final

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

APPENDIX G
50% S MATERIAL SAFETY DATA SHEET

15185 Main Street
Lemont, IL 60439
630-257-3900

Material Safety Data Sheet

50 % Caustic Soda

Section 1: Product Identification

PRODUCT NAME
50% Caustic Soda - Liquid

EVISION DATE
April 1, 2002

SYNONYM
Sodium Hydroxide Solution

ID NUMBER
UN 1824

CHEMICAL FORMULA
NaOH

CAS NUMBER
1310-73-2

EMERGENCY NUMBERS
24 Hour Emergency : CHEMTREC 1-800-424-9300
Product Information: Lemont, IL 1-630-257-3900

Section 2: Physical Data & Ingredients

APPEARANCE
Colorless to slightly grey solution

ODOR
Virtually Odorless

VAPOR PRESSURE
1 mm Hg. @ 68º F (20º C)

BOILING POINT
288º F (142 C)

SPECIFIC GRAVITY
1.53 @ 60º F

SOLUBILITY
Complete in water

DENSITY
12.76 lbs/gal @ 60º F.

pH OF SOLUTIONS
Strongly Basic (14)

HEAT OF SOLUTION
Exothermic

INGREDIENTS	**%**
Materials : Sodium Hydroxide	Approx. 50%
Water	Balance

Section 3: Fire & Explosion Information

FIRE EXTINGUISHING MEDIA
Not Applicable

FIRE
Not Flammable

EXPLOSION - Contact with some metals, particularly magnesium, aluminum and zinc (galvanized), can generate hydrogen rapidly, which is explosive.

Section 4: Reactivity Data

STABILITY - Stable under ordinary conditions of use and storage.

HAZARDOUS DECOMPOSITION PRODUCTS - Reaction with various food sugars may form carbon monoxide.

HAZARDOUS POLYMERIZATION - This substance does not polymerize.

INCOMPATIBILITY: (MATERIALS TO AVOID) - May react violently with water, acids and a number of organic compounds. Reacts rapidly with aluminum, tin and zinc. Also reacts with bronze and brass.

Section 5: Leak, Spill, Disposal Information

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED
Dike area to contain spill. Only trained personnel equipped with NIOSH/MSHA approved, full face combination dust/mist respirators should be permitted in this area. Reclaim spilled material if possible or dilute material with a large quantity of water, then neutralize with dilute acid. Properly neutralize liquid residues (pH 6-9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions. Neutralized material can be recovered by vacuum truck for disposal. After all visible traces have been removed, flush area with large amounts of water.

WASTE DISPOSAL METHOD
Dispose of neutralized material in an approved hazardous waste management facility. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of chemical materials and/or their containers in accordance with all federal, state and local regulations.

Section 6: Health & Hazard Data

IS CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?

NTP - NO IARC - NO OSHA - NO

MEDICAL CONDITION GENERALLY AGGRAVATED BY EXPOSURE: None Known

PERMISSIBLE EXPOSURE LIMIT -OSHA 2mg./m^3 ceiling

ACUTE TOXICITY

PRIMARY ROUTES OF EXPOSURE - Skin and eyes contact, inhalation

INHALATION - Respiratory tract irritant. Severe injury is usually avoided by the self-limiting coughing and sneezing symptoms.

INGESTION - CORROSIVE ! Ingestion of caustic soda liquid can cause
perforation of the esophagus and stomach. Abdominal pain, nausea, vomiting and general gastro-intestinal upset can be expected.

SKIN CONTACT - CORROSIVE ! Will cause severe chemical burns and tissue destruction. Immediately flush with water. Seek medical
attention.

EYE CONTACT - Will cause severe and possible permanent eye damage. Continuously flush eyes with large amounts of water for at least 15 minutes. Seek medical attention.

CHRONIC TOXICITY- No Data Found

Section 7: Emergency & First Aid Procedures

INHALATION - Move person to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

EYE OR SKIN CONTACT - In case of contact, immediately flush eyes and skin with plenty of water (soap and water for skin) for at least 15 minutes, while removing contaminated clothing and shoes. Hold eyelids open during this flushing with water. Call a physician. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing until slick skin feeling is gone. Thoroughly clean contaminated clothing and shoes before reuse or discard.

INGESTION - If swallowed, give at least 3-4 glasses of water or acidic beverages (tomato or orange juice, carbonated soft drinks). Do not induce vomiting. Do not give anything by mouth to an unconscious or
convulsing person. Get medical attention.

NOTES TO PHYSICIAN - Treat symptomatically.

Section 8: Occupational Control Measures

VENTILATION REQUIREMENTS - Local exhaust - to meet the exposure requirements and avoid mist.

PERSONAL RESPIRATORS: (NIOSH APPROVED) - Dust/mist respirators recommended for all personnel working in or about an area of potential mist exposure.

SKIN PROTECTION REQUIREMENTS - Wear impervious protective clothing; including boots; gloves; lab coat; apron or coveralls to prevent skin contact. Preferred Materials: Nitrile, Neoprene, PVC

EYE PROTECTION REQUIREMENTS - Use chemical safety goggles impervious to product. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in immediate work area.
NOTE: ALL PROTECTIVE EQUIPMENT MUST CONFORM WITH 29 CFR 1910.132.

Section 9: Handling & Storage

Store and handle only in containers suitably lined with or constructed of materials specified for this product. Keep separate from incompatibles.

Section 10: Regulatory Information

DOT HAZARD CLASS
8

DOT PLACARD REQUIRED
Corrosive - UN 1824

DOT LABEL
Corrosive - 8

REPORTABLE QUANTITY
1,000 lbs -/ 454 Kgs.

NFPA / HMIS RATINGS
Health - 3 Flammability - 0 Reactivity - 1

TSCA - Sodium Hydroxide is on the TSCA inventory under CAS. NO.1310-73-2.

OSHA - Listed as a “Hazardous Chemical” as defined in 29 CFR 1910.1200 (Hazcom).

CERCLA
Listed in table 302.4 of 40 CFR part 302 as a hazardous substance with a reportable quantity of 1,000 pounds. Release to air, land or water which exceed the RQ must be reported to the National Response Center,
1-800-424-8802.

EUROPE EINECS
This product is listed on EINECS. (204-825-9)

CANADA DSL
This product is listed on the Canadian DSL.

AUSTRALIA AIC
This product is listed on AICS

KOREA ECL
This product is listed on MITI.

JAPAN MITI (ENCS)
This product is listed on MITI.

SARA TITLE III
SARA (311,312) HAZARD CLASS: Acute Health Hazard. Reactive Hazard.
SARA (313) CHEMICALS: Not Listed
SARA Section 302: Not listed as an Extremely Hazardous Substance/

CANADIAN REGULATIONS (WHMIS)
a.) Class E - Corrosive Material.
b.) Sensitization to product - None known.
c.) Reproductivity Toxicity - None known.
d.) Odor Threshold - No Odor.
e.) Product Use - Neutralization, chemical processing.

The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, K.A. Steel Chemicals makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving information will exercise their independent judgement in determining its appropriateness for a particular purpose. Accordingly, K.A. Steel Chemicals will not be responsible for damages of any kind resulting from the use of or reliance upon such information. No representation, or warranties, either express or implied, of merchantability fitness for a particular purpose or of any nature are made hereunder with respect to the information set forth herein or to the product to which the information refers.

THERMOCHEM

PGV Emergency Response Plan
Worst Case Air Toxics Profile

Brine Aerosol Characterization

An estimation of the potential brine aerosol chemical speciation and mass emission rate was performed for the Puna Geothermal Venture (PGV) Uncontrolled Flow Event Scenario Hazards Analysis by Thermochem, Inc. (TCI). The worst case scenario assumes a 500 KPH vertical discharge comprised of 80% steam and 20% brine by mass at atmospheric pressure (14.4 psia).

For this initial evaluation it has been assumed that 50% of the total brine discharge is converted to droplets smaller than 100 um in the atmosphere. The actual fraction of brine converted to aerosol at a given total flow rate (steam + brine) would be strongly dependent on the discharge enthalpy (steam/brine ratio). At high enthalpies a greater proportion of brine would be converted to an aerosol, but the brine discharge rate would be lower, compensating this effect. Therefore, a 50% aerosol production rate appears to be a reasonable worst case assumption given the 500 KPH total flow and 20% brine specification that is several times above any observed discharge rate for Puna and only speculated for the KS-8 well.

The brine chemistry data used in this evaluation, summarized in Table 1, was derived primarily from the KS-3 flow test results and only supplemented with KS-1A data for certain analytes not measured or reported undetected for the KS-3 samples. The KS-3 brine chemistry clearly represents the worst case for the Puna resource known to date given the high salinity and low pH of this fluid. The KS-3 brine contains the highest concentrations of heavy metals, in addition to the other salts, due to the brine acidity that assists in mobilizing these metals in the reservoir. Data used from KS-1A brine analyses were factored up in concentration based on the KS-3/KS-1A chloride ratios. Unfortunately, numerous toxic metals were not measured or reported undetected, with relatively high detection limits, in both sets of data and could not be included in this evaluation.

The worst case discharge scenario considered here assumes that H_2S abatement chemicals (such as NaOH) are not injected into the flow. This would be the case when the well vents directly to atmosphere, bypassing any muffler or vapor/liquid separator. The injection of H_2S abatement chemicals under these conditions would have a minimal effect on H_2S emission rates and would only render the brine aerosol considerably more hazardous.

The concentrations of brine aerosol constituents (Table 2) were calculated by assuming droplet evaporation until equilibrium with atmospheric conditions was achieved. Equilibrium is realized when the water vapor pressure exerted by the aerosol, which is depressed due to the high salt concentration, equals the atmospheric water vapor pressure, defined by the ambient temperature and relative humidity. Annual average temperature and humidity data for Puna was used in the worst case exercise since actual near plume humidities would be much higher.

The primary computer model used in these computations was a heterogeneous chemical equilibrium code using Pitzer-derived specific interaction parameters to predict high ionic strength solution behavior (Weare, 1991). Under the conditions modeled, only amorphous silica precipitates to a solid phase in the aerosol. At 79% relative humidity NaCl is near saturation, which is consistent with a similar study performed by Clegg (1990) where NaCl was found to be supersaturated in seawater aerosols below 75% relative humidity. Certain iron, calcium and magnesium silicates may also precipitate in the Puna aerosol, although there is insufficient thermodynamic data available to predict their formation.

The brine aerosol speciation is based on the known form of certain elements as normally found in hydrothermal reservoirs, the initial speciation expected at the brine pH and redox condition, and consideration of oxidation reaction kinetics upon exposure to atmospheric oxygen. Only iron was assumed to oxidize substantially, although even this reaction would be relatively slow given the low aerosol pH and high chloride content. Many of the cations listed in Table 2 would be present as chloride complexes in addition to the free ion form.

All the weak acid compounds, silicic, boric and arsenious acids, would be unionized at the aerosol pH. For kinetic reasons, arsenic is assumed to remain in the trivalent oxidation state, which is also the most toxic form (Solomon, 1991). Concentrations of each constituent in the aerosol are given by weight as the actual species or compound considered present.

The mass emission rates for each constituent are based on the KS-3 or normalized KS-1A brine chemistry after flashing to 14.4 psia. A total of 50 KPH of the atmospheric flashed brine is assumed to form aerosols. After evaporation of this brine to 47% of its initial weight, 23.5 KPH of concentrated aerosol would be produced. The mass rates of individual constituents were calculated by weight as the respective element or most common compound, as shown in Table 2. These mass emission rates can be used for preliminary modeling of maximum ambient air impacts.

Vapor Phase Characterization

A vapor phase composition of the initial steam plume and mass emission rate of each species was also estimated for the worst case hazards analysis, assuming a 500 KPH discharge comprised of 80% steam and 20% brine by mass at atmospheric pressure (Table 3). Hydrogen sulfide was not evaluated in this exercise, at the request of PGV, since H_2S

emission rate estimates and dispersion modeling was previously performed by PGV and Environmental Management Associates (EMA).

For purposes in modeling vapor phase concentrations of hydrogen chloride (HCl), the wellhead pressure was assumed to be 575 psia and the temperature 250°C. No re-equilibration between phases was considered after discharge to atmosphere, which results in maximum vapor phase concentrations of HCl and arsenic. All other gas species, including H_2S, would partition essentially 100% to the vapor phase after discharge.

The steam chemistry data used in this evaluation was derived from KS-1A and KS-3 flow test sample analysis results. The highest concentration found in the available data was used for each constituent, provided there was no reason to question the data quality. The data sources are also summarized in Table 3.

Arsenic measured in KS-1A steam samples was most likely present in the same form as arsenic in the brine phase ($HAsO_2$), and occurred through direct vapor phase partitioning at the separator temperature. This arsenic would actually condense to an aerosol or particulate phase after cooling in the atmosphere.

The concentration of HCl in the steam phase was calculated based on KS-3 brine chemistry at the wellhead conditions specified above, using the chemical model proposed by Anderson (1989). This model was designed to predict the partial pressure of HCl exerted by high temperature saline brines, such as those found in the Puna resource.

The radon data used in this evaluation was obtained from analysis results of a KS-1A steam sample collected near the end of the flow test (October 27, 1985). Radon data reported for samples collected earlier in the KS-1A flow test is invalid due to the excessive time span (2 months) between sample collection and analysis. This delay resulted in virtually complete decay of the radon. The data reported was essentially the instrument noise multiplied by a decay correction factor of over 50,000. This problem was noted in the original Anatec laboratory report to Thermal Power, dated January 29, 1986. A subsequent data quality study performed by Thermochem, Inc., for Thermal Power also discussed the radon data inaccuracy (1986).

The initial steam plume concentration of each species (other than HCl) in Table 3 is based on the original analysis results (KS-1A or KS-3) after correction to atmospheric flash for the given fluid. All constituent emission rates are based on the steam plume concentrations and a 400 KPH steam flow rate at atmospheric pressure. These emission rates can also be used for preliminary maximum ambient air impact modeling.

References

1. Moller, Nancy; John H. Weare, Zhenhao Duan, Jerry Greenberg, *Models for Optimizing Geothermal Power Plant Performance,* DOE Geothermal Modeling Workshop, 1991.

2. Clegg, Simon L., Peter Brimblecombe, *Solubility of Volatile Electrolytes in Multicomponent Solutions with Atmospheric Applications,* American Chemical Society, 1990.

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TABLE 1

PGV EMERGENCY RESPONSE PLAN
WORST CASE UNCONTROLLED FLOW EVENT

INITIAL BRINE COMPOSITION : ATMOSPHERIC FLASH

DISSOLVED CONSTITUENTS , CATIONS

	INITIAL FORM	ug/g	DATA SOURCE
SODIUM	Na+	3.06E+04	(1)
POTASSIUM	K+	7.14E+03	(1)
CALCIUM	Ca ++	5.33E+03	(1)
MAGNESIUM	Mg++	7.87E+01	(1)
IRON	Fe++	3.17E+03	(1)
LITHIUM	Li+	2.20E+01	(1)
STRONTIUM	Sr++	7.80E+01	(1)
ZINC	Zn ++	6.95E+01	(1)
BARIUM	Ba++	1.42E+02	(1)
MANGANESE	Mn++	2.63E+02	(1)
LEAD	Pb++	3.73E+00	(1)

DISSOLVED CONSTITUENTS , ANIONS

CHLORIDE	Cl-	6.76E+04	(1)
FLUORIDE	F-	2.70E+00	(1)
BROMIDE	Br-	2.71E+02	(2)
SULFATE	SO4=	8.10E+00	(1)

DISSOLVED CONSTITUENTS , NEUTRAL SPECIES

SILICIC ACID	H4SiO4	3.02E+03	(1)
BORIC ACID	H3BO3	1.81E+02	(1)
ARSENIOUS ACID	HAsO2	2.32E+00	(2)
MERCURY	Hg	6.21E-03	(2)
BRINE pH		3.58 units	(1)

DATA SOURCES: (1) KS-3 BRINE ANALYSIS ,SAMPLE DATE 03/31/91,FIELD I.D. BC-013
(2) KS-1A BRINE ANALYSIS , SAMPLE DATE 10/24/85,FIELD I.D. 1006 CC

TABLE 2

PGV EMERGENCY RESPONSE PLAN
WORST CASE AIR TOXICS PROFILE

BRINE AEROSOL : SPECIES CONCENTRATIONS			MASS EMISSION RATES			
DISSOLVED CONSTITUENTS , CATIONS	PRIMARY FORM	ug/g	Calculated by WT. as	Lbs/Hr	g/sec	DATA SOURCE
SODIUM	Na+	6.51E+04	Na	1.53E+03	1.93E+02	(1)
POTASSIUM	K+	1.52E+04	K	3.57E+02	4.50E+01	(1)
CALCIUM	Ca ++	1.13E+04	Ca	2.67E+02	3.36E+01	(1)
MAGNESIUM	Mg++	1.67E+02	Mg	3.94E+00	4.96E-01	(1)
IRON	Fe+++	6.74E+03	Fe	1.59E+02	2.00E+01	(1)
LITHIUM	Li+	4.68E+01	Li	1.10E+00	1.39E-01	(1)
STRONTIUM	Sr++	1.66E+02	Sr	3.90E+00	4.92E-01	(1)
ZINC	Zn ++	1.48E+02	Zn	3.48E+00	4.38E-01	(1)
BARIUM	Ba++	3.01E+02	Ba	7.09E+00	8.93E-01	(1)
MANGANESE	Mn++	5.60E+02	Mn	1.32E+01	1.66E+00	(1)
LEAD	Pb++	7.92E+00	Pb	1.86E-01	2.35E-02	(1)
DISSOLVED CONSTITUENTS , ANIONS						
CHLORIDE	Cl-	1.44E+05	Cl	3.38E+03	4.26E+02	(1)
FLUORIDE	F-	5.74E+00	F	1.35E-01	1.70E-02	(1)
BROMIDE	Br-	5.77E+02	Br	1.36E+01	1.71E+00	(2)
SULFATE	SO4=	1.72E+01	SO4	4.05E-01	5.10E-02	(1)
DISSOLVED CONSTITUENTS , NEUTRAL SPECIES						
SILICIC ACID	H4SiO4	7.04E+01	SiO2	1.03E+00	1.30E-01	(1)
BORIC ACID	H3BO3	3.85E+02	B	1.58E+00	1.99E-01	(1)
ARSENIOUS ACID	HAsO2	4.94E+00	As	8.06E-02	1.02E-02	(2)
MERCURY	Hg	1.32E-02	Hg	3.11E-04	3.91E-05	(2)
SOLID PHASE , PRECIPITATES						
AMORPHOUS SILICA	SiO2	4.01E+03	SiO2	9.41E+01	1.19E+01	(1)
AEROSOL pH		3.0 units	TOTAL AEROSOL	2.35E+04	2.96E+03	

NOTES: A. BRINE AEROSOL CONCENTRATIONS BASED ON DROPLET EVAPORATION TO EQUILIBRIUM WITH ATMOSPHERIC CONDITIONS , 71 DEG. F 79% R.H.

B. EMISSION RATES BASED ON 500 KPH VERTICAL VENT ,20 % BRINE FRACTION AT 14.4 PSIA , AND 50 % CONVERSION OF BRINE TO AEROSOL FORM .

C. DATA SOURCES: (1) KS-3 BRINE ANALYSIS ,SAMPLE DATE 03/31/91,FIELD I.D. BC-013
(2) KS-1A BRINE ANALYSIS , SAMPLE DATE 10/24/85,FIELD I.D. 1006 CC

TABLE 3

PGV EMERGENCY RESPONSE PLAN
WORST CASE AIR TOXICS PROFILE

	VAPOR PHASE : INITIAL SPECIES CONCENTRATIONS			MASS EMISSION RATES			
	PRIMARY FORM	ug/g	ug/m3	Calculated By wt. as	Lbs/Hr	g/sec	DATA SOURCE
ARSENIC	HAsO2	1.32E-02	7.76E+00	As	3.68E-03	4.63E-04	(1)
AMMONIA	NH3	1.41E+00	8.26E+02	NH3	5.64E-01	7.10E-02	(2)
METHANE	CH4	1.73E+01	1.02E+04	CH4	6.94E+00	8.74E-01	(2)
ETHENE	C2H4	4.60E-03	2.69E+00	C2H4	1.84E-03	2.32E-04	(3)
ETHANE	C2H6	9.20E-02	5.39E+01	C2H6	3.68E-02	4.63E-03	(3)
PROPENE	C3H6	8.46E-02	4.96E+01	C3H6	3.38E-02	4.26E-03	(3)
PROPANE	C3H8	7.36E-02	4.31E+01	C3H8	2.94E-02	3.71E-03	(3)
2-METHYLPROPANE	C4H10	2.67E-02	1.56E+01	C4H10	1.07E-02	1.34E-03	(3)
n-BUTANE	C4H10	4.05E-02	2.37E+01	C4H10	1.62E-02	2.04E-03	(3)
2-METHYLBUTANE	C5H12	1.29E-02	7.54E+00	C5H12	5.15E-03	6.49E-04	(3)
n-PENTANE	C5H12	1.38E-02	8.08E+00	C5H12	5.52E-03	6.95E-04	(3)
HYDROGEN CHLORIDE	HCl	1.65E+01	9.67E+03	HCl	6.60E+00	8.32E-01	(4)
		pCi/kg	pCi/m3		uCi/Hr	uCi/sec	
RADON-222	Rn-222	2.87E+03	1.68E+03	Rn-222	5.19E+02	1.44E-01	(5)

NOTES :

A. INITIAL CONCENTRATIONS OF VAPOR PHASE SPECIES EXPRESSED RELATIVE TO STEAM AT ATMOSPHERIC PRESSURE (PLUME CONDITIONS BEFORE DISPERSION)

B. MASS EMISSION RATES BASED ON 500 KPH VENT AND 80 % STEAM FRACTION AT 14.4 PSIA

C. DATA SOURCES :

(1) KS-1A STEAM ANALYSIS , SAMPLE DATE 10/24/85 , FIELD I.D. 1006 GC-A
(2) KS-3 STEAM ANALYSIS , SAMPLE DATE 03/25/91 , LAB I.D. TCI 3495-01,02
(3) KS-1A STEAM ANALYSIS , SAMPLE DATE 10/17/85 , LAB I.D. ANA 7439-69
(4) KS-3 BRINE ANALYSIS , SAMPLE DATE 03/31/91 , FIELD I.D. BC-013 (CALC.)
(5) KS-1A STEAM ANALYSIS , SAMPLE DATE 10/27/85 , LAB I.D. ANA 7328-01

TABLE 3

PGV EMERGENCY RESPONSE PLAN
WORST CASE AIR TOXICS PROFILE

	VAPOR PHASE : INITIAL SPECIES CONCENTRATIONS			MASS EMISSION RATES			
	PRIMARY FORM	ug/g	ug/m3	Calculated By wt. as	Lbs/Hr	g/sec	DATA SOURCE
ARSENIC	HAsO2	1.32E-02	7.76E+00	As	3.68E-03	4.63E-04	(1)
AMMONIA	NH3	1.41E+00	8.26E+02	NH3	5.64E-01	7.10E-02	(2)
METHANE	CH4	1.73E+01	1.02E+04	CH4	6.94E+00	8.74E-01	(2)
ETHENE	C2H4	4.60E-03	2.69E+00	C2H4	1.84E-03	2.32E-04	(3)
ETHANE	C2H6	9.20E-02	5.39E+01	C2H6	3.68E-02	4.63E-03	(3)
PROPENE	C3H6	8.46E-02	4.96E+01	C3H6	3.38E-02	4.26E-03	(3)
PROPANE	C3H8	7.36E-02	4.31E+01	C3H8	2.94E-02	3.71E-03	(3)
2-METHYLPROPANE	C4H10	2.67E-02	1.56E+01	C4H10	1.07E-02	1.34E-03	(3)
n-BUTANE	C4H10	4.05E-02	2.37E+01	C4H10	1.62E-02	2.04E-03	(3)
2-METHYLBUTANE	C5H12	1.29E-02	7.54E+00	C5H12	5.15E-03	6.49E-04	(3)
n-PENTANE	C5H12	1.38E-02	8.08E+00	C5H12	5.52E-03	6.95E-04	(3)
HYDROGEN CHLORIDE	HCl	1.65E+01	9.67E+03	HCl	6.60E+00	8.32E-01	(4)
		pCi/kg	pCi/m3		pCi/Hr	pCi/sec	
RADON-222	Rn-222	2.87E+03	1.68E+03	Rn-222	5.19E+08	1.44E+05	(5)

NOTES :

A. INITIAL CONCENTRATIONS OF VAPOR PHASE SPECIES EXPRESSED RELATIVE TO STEAM AT ATMOSPHERIC PRESSURE (PLUME CONDITIONS BEFORE DISPERSION)

B. MASS EMISSION RATES BASED ON 500 KPH VENT AND 80 % STEAM FRACTION AT 14.4 PSIA

C. DATA SOURCES :

(1) KS-1A STEAM ANALYSIS , SAMPLE DATE 10/24/85 , FIELD I.D. 1006 GC-A
(2) KS-3 STEAM ANALYSIS , SAMPLE DATE 03/25/91 , LAB I.D. TCI 3495-01,02
(3) KS-1A STEAM ANALYSIS , SAMPLE DATE 10/17/85 , LAB I.D. ANA 7439-69
(4) KS-3 BRINE ANALYSIS , SAMPLE DATE 03/31/91 , FIELD I.D. BC-013 (CALC.)
(5) KS-1A STEAM ANALYSIS , SAMPLE DATE 10/27/85 , LAB I.D. ANA 7328-01

TABLE 1

PGV EMERGENCY RESPONSE PLAN
WORST CASE UNCONTROLLED FLOW EVENT

INITIAL BRINE COMPOSITION : ATMOSPHERIC FLASH

DISSOLVED CONSTITUENTS , CATIONS

	INITIAL FORM	ug/g	DATA SOURCE
SODIUM	Na+	3.06E+04	(1)
POTASSIUM	K+	7.14E+03	(1)
CALCIUM	Ca ++	5.33E+03	(1)
MAGNESIUM	Mg++	7.87E+01	(1)
IRON	Fe++	3.17E+03	(1)
LITHIUM	Li+	2.20E+01	(1)
STRONTIUM	Sr++	7.80E+01	(1)
ZINC	Zn ++	6.95E+01	(1)
BARIUM	Ba++	1.42E+02	(1)
MANGANESE	Mn++	2.63E+02	(1)
LEAD	Pb++	3.73E+00	(1)

DISSOLVED CONSTITUENTS , ANIONS

CHLORIDE	Cl-	6.76E+04	(1)
FLUORIDE	F-	2.70E+00	(1)
BROMIDE	Br-	2.71E+02	(2)
SULFATE	SO4=	8.10E+00	(1)

DISSOLVED CONSTITUENTS , NEUTRAL SPECIES

SILICIC ACID	H4SiO4	3.02E+03	(1)
BORIC ACID	H3BO3	1.81E+02	(1)
ARSENIOUS ACID	HAsO2	2.32E+00	(2)
MERCURY	Hg	6.21E-03	(2)
BRINE pH		3.58 units	(1)

DATA SOURCES: (1) KS-3 BRINE ANALYSIS ,SAMPLE DATE 03/31/91,FIELD I.D. BC-013
(2) KS-1A BRINE ANALYSIS , SAMPLE DATE 10/24/85,FIELD I.D. 1006 CC

TABLE 2

PGV EMERGENCY RESPONSE PLAN
WORST CASE AIR TOXICS PROFILE

BRINE AEROSOL : SPECIES CONCENTRATIONS			MASS EMISSION RATES			
DISSOLVED CONSTITUENTS , CATIONS	PRIMARY FORM	ug/g	Calculated by WT. as	Lbs/Hr	g/sec	DATA SOURCE
SODIUM	Na+	6.51E+04	Na	1.53E+03	1.93E+02	(1)
POTASSIUM	K+	1.52E+04	K	3.57E+02	4.50E+01	(1)
CALCIUM	Ca ++	1.13E+04	Ca	2.67E+02	3.36E+01	(1)
MAGNESIUM	Mg++	1.67E+02	Mg	3.94E+00	4.96E-01	(1)
IRON	Fe+++	6.74E+03	Fe	1.59E+02	2.00E+01	(1)
LITHIUM	Li+	4.68E+01	Li	1.10E+00	1.39E-01	(1)
STRONTIUM	Sr++	1.66E+02	Sr	3.90E+00	4.92E-01	(1)
ZINC	Zn ++	1.48E+02	Zn	3.48E+00	4.38E-01	(1)
BARIUM	Ba++	3.01E+02	Ba	7.09E+00	8.93E-01	(1)
MANGANESE	Mn++	5.60E+02	Mn	1.32E+01	1.66E+00	(1)
LEAD	Pb++	7.92E+00	Pb	1.86E-01	2.35E-02	(1)
DISSOLVED CONSTITUENTS , ANIONS						
CHLORIDE	Cl-	1.44E+05	Cl	3.38E+03	4.26E+02	(1)
FLUORIDE	F-	5.74E+00	F	1.35E-01	1.70E-02	(1)
BROMIDE	Br-	5.77E+02	Br	1.36E+01	1.71E+00	(2)
SULFATE	SO4=	1.72E+01	SO4	4.05E-01	5.10E-02	(1)
DISSOLVED CONSTITUENTS , NEUTRAL SPECIES						
SILICIC ACID	H4SiO4	7.04E+01	SiO2	1.03E+00	1.30E-01	(1)
BORIC ACID	H3BO3	3.85E+02	B	1.58E+00	1.99E-01	(1)
ARSENIOUS ACID	HAsO2	4.94E+00	As	8.06E-02	1.02E-02	(2)
MERCURY	Hg	1.32E-02	Hg	3.11E-04	3.91E-05	(2)
SOLID PHASE , PRECIPITATES						
AMORPHOUS SILICA	SIO2	4.01E+03	SiO2	9.41E+01	1.19E+01	(1)
AEROSOL pH		3.0 units	TOTAL AEROSOL	2.35E+04	2.96E+03	

NOTES: A. BRINE AEROSOL CONCENTRATIONS BASED ON DROPLET EVAPORATION TO EQUILIBRIUM WITH ATMOSPHERIC CONDITIONS , 71 DEG. F 79% R.H.

B. EMISSION RATES BASED ON 500 KPH VERTICAL VENT ,20 % BRINE FRACTION AT 14.4 PSIA , AND 50 % CONVERSION OF BRINE TO AEROSOL FORM .

C. DATA SOURCES: (1) KS-3 BRINE ANALYSIS ,SAMPLE DATE 03/31/91,FIELD I.D. BC-013
(2) KS-1A BRINE ANALYSIS , SAMPLE DATE 10/24/85,FIELD I.D. 1006 CC

1 ISCST - (DATED 90346)

IBM-PC VERSION (2.04)
(C) COPYRIGHT 1990, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 6688 SOLD TO ENVIRONMENTAL MANAGMENT ASSOCIATES
RUN BEGAN ON 12-09-91 AT 02:32:47

1

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

```
CALCULATE (CONCENTRATION=1,DEPOSITION=2)                          ISW(1) =   1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)           ISW(2) =   3
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)                  ISW(3) =   1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)                          ISW(4) =   0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)                     ISW(5) =   0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)                  ISW(6) =   2

COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
WITH THE FOLLOWING TIME PERIODS:
  HOURLY (YES=1,NO=0)                                             ISW(7) =   1
  2-HOUR (YES=1,NO=0)                                             ISW(8) =   0
  3-HOUR (YES=1,NO=0)                                             ISW(9) =   0
  4-HOUR (YES=1,NO=0)                                            ISW(10) =   0
  6-HOUR (YES=1,NO=0)                                            ISW(11) =   0
  8-HOUR (YES=1,NO=0)                                            ISW(12) =   0
  12-HOUR (YES=1,NO=0)                                           ISW(13) =   0
  24-HOUR (YES=1,NO=0)                                           ISW(14) =   0
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)                              ISW(15) =   0

PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
SPECIFIED BY ISW(7) THROUGH ISW(14):
  DAILY TABLES (YES=1,NO=0)                                      ISW(16) =   0
  HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)                   ISW(17) =   1
  MAXIMUM 50 TABLES (YES=1,NO=0)                                 ISW(18) =   0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)        ISW(19) =   2
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3) ISW(20) =   0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)        ISW(21) =   1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3) ISW(22) =   1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)                ISW(23) =   0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)            ISW(24) =   1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)      ISW(25) =   1
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)            ISW(26) =   1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)          ISW(27) =   2
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)                          ISW(28) =   2
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)                 ISW(29) =   2
DEBUG OPTION CHOSEN (YES=1,NO=2)                                 ISW(30) =   2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)              ISW(31) =   0

NUMBER OF INPUT SOURCES                                          NSOURC =  20
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)                         NGROUP =  12
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)             IPERD =   0
NUMBER OF X (RANGE) GRID VALUES                                  NXPNTS =   5
NUMBER OF Y (THETA) GRID VALUES                                  NYPNTS =  25
NUMBER OF DISCRETE RECEPTORS                                     NXWYPT =  50
NUMBER OF HOURS PER DAY IN METEOROLOGICAL DATA                   NHOURS =   1
NUMBER OF DAYS OF METEOROLOGICAL DATA                             NDAYS =  33
SOURCE EMISSION RATE UNITS CONVERSION FACTOR                         TK =.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED                 ZR =  10.00  METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA                         IMET =   7
ALLOCATED DATA STORAGE                                            LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN                        MIMIT = 16720 WORDS
```

1

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

0

*** NUMBER OF SOURCE NUMBERS REQUIRED TO DEFINE SOURCE GROUPS ***
(NSOGRP)

1, 1, 3, 1, 1, 1, 1, 1, 1, 3, 1, 1,

0

*** SOURCE NUMBERS DEFINING SOURCE GROUPS ***
(IDSOR)

1, 2, 3, 13, -16, 4, 5, 6, 7, 8, 9, 10, 17, -20,
11, 12,

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** X-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

-100.0, -50.0, 0.0, 50.0, 100.0,

*** Y-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

1000.0, 2000.0, 3000.0, 4000.0, 5000.0, 6000.0, 7000.0, 8000.0, 9000.0, 10000.0,
11000.0, 12000.0, 13000.0, 14000.0, 15000.0, 16000.0, 17000.0, 18000.0, 19000.0, 20000.0,
21000.0, 22000.0, 23000.0, 24000.0, 25000.0,

1

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

*** X,Y COORDINATES OF DISCRETE RECEPTORS ***
(METERS)

(	-100.0,	50.0),	(	-50.0,	50.0),	(	0.0,	50.0),	(	50.0,	50.0),	(	100.0,	50.0),
(	-100.0,	100.0),	(	-50.0,	100.0),	(	0.0,	100.0),	(	50.0,	100.0),	(	100.0,	100.0),
(	-100.0,	200.0),	(	-50.0,	200.0),	(	0.0,	200.0),	(	50.0,	200.0),	(	100.0,	200.0),
(	-100.0,	300.0),	(	-50.0,	300.0),	(	0.0,	300.0),	(	50.0,	300.0),	(	100.0,	300.0),
(	-100.0,	400.0),	(	-50.0,	400.0),	(	0.0,	400.0),	(	50.0,	400.0),	(	100.0,	400.0),
(	-100.0,	500.0),	(	-50.0,	500.0),	(	0.0,	500.0),	(	50.0,	500.0),	(	100.0,	500.0),
(	-100.0,	600.0),	(	-50.0,	600.0),	(	0.0,	600.0),	(	50.0,	600.0),	(	100.0,	600.0),
(	-100.0,	700.0),	(	-50.0,	700.0),	(	0.0,	700.0),	(	50.0,	700.0),	(	100.0,	700.0),
(	-100.0,	800.0),	(	-50.0,	800.0),	(	0.0,	800.0),	(	50.0,	800.0),	(	100.0,	800.0),
(	-100.0,	900.0),	(	-50.0,	900.0),	(	0.0,	900.0),	(	50.0,	900.0),	(	100.0,	900.0),

(

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	0.56447E+01	0.0	0.0	204.2	6.10	372.59	5.23	4.57	0.00	0.00	0.00
2	0	0	0	0.56447E+02	0.0	0.0	204.2	6.10	372.59	5.23	4.57	0.00	0.00	0.00
3	1	0	0	0.37673E+01	0.0	19.0	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
4	0	0	0	0.56447E+02	0.0	0.0	204.2	21.64	372.59	0.21	22.86	0.00	0.00	0.00
5	0	0	0	0.56447E+02	0.0	0.0	204.2	21.64	372.59	0.21	22.86	0.00	0.00	0.00
6	0	0	0	0.56447E+02	0.0	0.0	204.2	12.19	372.59	0.18	24.38	0.00	0.00	0.00
7	0	0	0	0.56447E+02	0.0	0.0	204.2	0.00	372.59	0.47	15.24	0.00	0.00	0.00
8	0	0	0	0.56447E+00	0.0	0.0	204.2	1.83	344.26	0.02	7.77	0.00	0.00	0.00
9	0	0	0	0.56447E+00	0.0	0.0	204.2	0.00	344.26	0.02	21.55	0.00	0.00	0.00
10	1	0	0	0.18774E+01	0.0	19.0	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
11	0	0	0	0.61739E+00	0.0	0.0	204.2	0.00	338.71	0.00	1.00	0.00	0.00	0.00
12	0	0	0	0.70559E+02	0.0	0.0	204.2	6.10	372.59	14.37	4.57	0.00	0.00	0.00
13	1	0	0	0.75221E+01	0.0	95.3	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
14	1	0	0	0.11277E+02	0.0	171.5	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
15	1	0	0	0.15057E+02	0.0	247.7	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
16	1	0	0	0.18811E+02	0.0	323.9	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
17	1	0	0	0.37673E+01	0.0	95.3	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
18	1	0	0	0.56447E+01	0.0	171.5	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
19	1	0	0	0.75221E+01	0.0	247.7	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
20	1	0	0	0.94120E+01	0.0	323.9	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

SOURCE NUMBER	- - RECEPTOR LOCATION - - X OR RANGE (METERS)	Y (METERS) OR DIRECTION (DEGREES)	DISTANCE BETWEEN (METERS)
3	0.0	50.0	-7.16
10	0.0	50.0	-7.16
13	0.0	100.0	-33.36
14	0.0	200.0	-9.56
16	0.0	300.0	-14.25
17	0.0	100.0	-33.36
18	0.0	200.0	-9.56
20	0.0	300.0	-14.25

1 MET. DATA DAY 1

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 1 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1 MET. DATA DAY 2

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 2 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1 MET. DATA DAY 3

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 3 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1 MET. DATA DAY 4

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 4 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 5

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 5 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 6

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 6 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 7

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 7 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 8

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 8 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 9

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 9 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 10

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 10 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 11

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 11 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 12

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 12 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 13

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 13 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 14

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 14 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	8.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 15

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 15 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	10.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 16

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 16 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 17

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 17 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 18

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 18 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 19

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 19 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 20

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 20 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 21

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 21 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	8.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 22

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 22 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	10.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 23

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 23 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	15.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 24

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 24 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	20.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 25

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 25 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 26

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 26 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 27

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 27 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 28

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 28 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 29

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 29 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 30

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 30 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1 MET. DATA DAY 31

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 31 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1 MET. DATA DAY 32

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 32 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1 MET. DATA DAY 33

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 33 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 30.01099 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	14.36572 (30, 1)	14.51106 (30, 1)	14.55983 (30, 1)	14.51107 (30, 1)	14.36574 (30, 1)
24000.0 /	14.68593 (30, 1)	14.84560 (30, 1)	14.89922 (30, 1)	14.84561 (30, 1)	14.68595 (30, 1)
23000.0 /	15.01857 (30, 1)	15.19461 (30, 1)	15.25375 (30, 1)	15.19462 (30, 1)	15.01859 (30, 1)
22000.0 /	15.36406 (30, 1)	15.55886 (30, 1)	15.62435 (30, 1)	15.55887 (30, 1)	15.36407 (30, 1)
21000.0 /	15.72268 (30, 1)	15.93914 (30, 1)	16.01196 (30, 1)	15.93915 (30, 1)	15.72270 (30, 1)
20000.0 /	16.09465 (30, 1)	16.33624 (30, 1)	16.41757 (30, 1)	16.33625 (30, 1)	16.09467 (30, 1)
19000.0 /	16.47997 (30, 1)	16.75089 (30, 1)	16.84220 (30, 1)	16.75091 (30, 1)	16.47999 (30, 1)
18000.0 /	16.87836 (30, 1)	17.18380 (30, 1)	17.28684 (30, 1)	17.18382 (30, 1)	16.87839 (30, 1)
17000.0 /	17.28917 (30, 1)	17.63552 (30, 1)	17.75251 (30, 1)	17.63553 (30, 1)	17.28919 (30, 1)
16000.0 /	17.71114 (30, 1)	18.10639 (30, 1)	18.24010 (30, 1)	18.10641 (30, 1)	17.71116 (30, 1)
15000.0 /	18.14214 (30, 1)	18.59642 (30, 1)	18.75036 (30, 1)	18.59643 (30, 1)	18.14217 (30, 1)
14000.0 /	18.41094 (30, 1)	18.93245 (30, 1)	19.10955 (30, 1)	18.93246 (30, 1)	18.41098 (30, 1)
13000.0 /	18.64104 (30, 1)	19.24400 (30, 1)	19.44929 (30, 1)	19.24401 (30, 1)	18.64107 (30, 1)
12000.0 /	18.81736 (30, 1)	19.52007 (30, 1)	19.76010 (30, 1)	19.52009 (30, 1)	18.81740 (30, 1)
11000.0 /	18.91862 (30, 1)	19.74490 (30, 1)	20.02828 (30, 1)	19.74492 (30, 1)	18.91866 (30, 1)
10000.0 /	18.91577 (30, 1)	19.89711 (30, 1)	20.23541 (30, 1)	19.89713 (30, 1)	18.91582 (30, 1)
9000.0 /	18.97855 (25, 1)	19.94750 (30, 1)	20.35662 (30, 1)	19.94752 (30, 1)	18.97857 (25, 1)
8000.0 /	19.58064 (25, 1)	20.24563 (25, 1)	20.47227 (25, 1)	20.24564 (25, 1)	19.58067 (25, 1)
7000.0 /	19.99098 (25, 1)	20.85464 (25, 1)	21.15074 (25, 1)	20.85465 (25, 1)	19.99100 (25, 1)
6000.0 /	20.05586 (25, 1)	21.20109 (25, 1)	21.59719 (25, 1)	21.20110 (25, 1)	20.05589 (25, 1)
5000.0 /	19.52397 (25, 1)	21.07733 (25, 1)	21.62212 (25, 1)	21.07735 (25, 1)	19.52400 (25, 1)
4000.0 /	17.98990 (25, 1)	20.14481 (25, 1)	20.91903 (25, 1)	20.14483 (25, 1)	17.98994 (25, 1)
3000.0 /	14.49619 (26, 1)	17.52498 (26, 1)	18.66919 (26, 1)	17.52500 (26, 1)	14.49623 (26, 1)
2000.0 /	12.62749 (21, 1)	15.82546 (21, 1)	17.06225 (21, 1)	15.82548 (21, 1)	12.62752 (21, 1)
1000.0 /	15.55249 (2, 1)	23.01575 (23, 1)	30.01099 (23, 1)	23.01579 (23, 1)	15.55250 (2, 1)

HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.05437	(30, 1)
0.0	50.0	0.44360	(30, 1)	50.0	50.0	0.05437	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.02283	(25, 1)
-50.0	100.0	0.64601	(25, 1)	0.0	100.0	2.41861	(30, 1)
50.0	100.0	0.64602	(25, 1)	100.0	100.0	0.02283	(25, 1)
-100.0	200.0	0.03621	(25, 1)	-50.0	200.0	0.78395	(25, 1)
0.0	200.0	5.24939	(24, 1)	50.0	200.0	0.78395	(25, 1)
100.0	200.0	0.03621	(25, 1)	-100.0	300.0	1.65995	(3, 1)
-50.0	300.0	6.78064	(15, 1)	0.0	300.0	27.80252	(24, 1)
50.0	300.0	6.78065	(15, 1)	100.0	300.0	1.65995	(3, 1)
-100.0	400.0	8.19260	(3, 1)	-50.0	400.0	16.77986	(15, 1)
0.0	400.0	41.18331	(24, 1)	50.0	400.0	16.77988	(15, 1)
100.0	400.0	8.19261	(3, 1)	-100.0	500.0	13.58333	(3, 1)
-50.0	500.0	22.59450	(15, 1)	0.0	500.0	44.34478	(24, 1)
50.0	500.0	22.59453	(15, 1)	100.0	500.0	13.58334	(3, 1)
-100.0	600.0	14.64026	(2, 1)	-50.0	600.0	24.20822	(15, 1)
0.0	600.0	42.48670	(24, 1)	50.0	600.0	24.20825	(15, 1)
100.0	600.0	14.64027	(2, 1)	-100.0	700.0	17.42719	(2, 1)
-50.0	700.0	23.54205	(15, 1)	0.0	700.0	38.84076	(24, 1)
50.0	700.0	23.54207	(15, 1)	100.0	700.0	17.42719	(2, 1)
-100.0	800.0	17.54636	(2, 1)	-50.0	800.0	23.42496	(24, 1)
0.0	800.0	34.93639	(24, 1)	50.0	800.0	23.42501	(24, 1)
100.0	800.0	17.54637	(2, 1)	-100.0	900.0	16.59435	(2, 1)
-50.0	900.0	23.52546	(23, 1)	0.0	900.0	32.41837	(23, 1)
50.0	900.0	23.52551	(23, 1)	100.0	900.0	16.59435	(2, 1)

2ND HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.91977 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	10.27385 (31, 1)	10.37787 (31, 1)	10.41278 (31, 1)	10.37788 (31, 1)	10.27387 (31, 1)
24000.0 /	10.57870 (31, 1)	10.69381 (31, 1)	10.73246 (31, 1)	10.69382 (31, 1)	10.57872 (31, 1)
23000.0 /	10.90079 (31, 1)	11.02867 (31, 1)	11.07163 (31, 1)	11.02868 (31, 1)	10.90080 (31, 1)
22000.0 /	11.24144 (31, 1)	11.38411 (31, 1)	11.43207 (31, 1)	11.38412 (31, 1)	11.24146 (31, 1)
21000.0 /	11.60213 (31, 1)	11.76203 (31, 1)	11.81582 (31, 1)	11.76204 (31, 1)	11.60215 (31, 1)
20000.0 /	11.98441 (31, 1)	12.16450 (31, 1)	12.22513 (31, 1)	12.16451 (31, 1)	11.98442 (31, 1)
19000.0 /	12.38991 (31, 1)	12.59385 (31, 1)	12.66258 (31, 1)	12.59386 (31, 1)	12.38993 (31, 1)
18000.0 /	12.82036 (31, 1)	13.05268 (31, 1)	13.13105 (31, 1)	13.05269 (31, 1)	12.82038 (31, 1)
17000.0 /	13.35157 (25, 1)	13.54385 (31, 1)	13.63383 (31, 1)	13.54386 (31, 1)	13.35158 (25, 1)
16000.0 /	13.94797 (25, 1)	14.08534 (25, 1)	14.17464 (31, 1)	14.08534 (25, 1)	13.94798 (25, 1)
15000.0 /	14.58266 (25, 1)	14.74371 (25, 1)	14.79779 (25, 1)	14.74372 (25, 1)	14.58267 (25, 1)
14000.0 /	15.25633 (25, 1)	15.44680 (25, 1)	15.51082 (25, 1)	15.44681 (25, 1)	15.25634 (25, 1)
13000.0 /	15.96822 (25, 1)	16.19568 (25, 1)	16.27222 (25, 1)	16.19569 (25, 1)	15.96824 (25, 1)
12000.0 /	16.71515 (25, 1)	16.98975 (25, 1)	17.08228 (25, 1)	16.98976 (25, 1)	16.71516 (25, 1)
11000.0 /	17.48979 (25, 1)	17.82539 (25, 1)	17.93869 (25, 1)	17.82540 (25, 1)	17.48980 (25, 1)
10000.0 /	18.27835 (25, 1)	18.69427 (25, 1)	18.83500 (25, 1)	18.69427 (25, 1)	18.27837 (25, 1)
9000.0 /	18.76883 (30, 1)	19.50015 (25, 1)	19.67719 (25, 1)	19.50016 (25, 1)	18.76888 (30, 1)
8000.0 /	18.42194 (30, 1)	19.85576 (30, 1)	20.35809 (30, 1)	19.85579 (30, 1)	18.42199 (30, 1)
7000.0 /	17.79623 (30, 1)	19.56566 (30, 1)	20.19375 (30, 1)	19.56569 (30, 1)	17.79628 (30, 1)
6000.0 /	16.47786 (26, 1)	18.63297 (30, 1)	19.42055 (30, 1)	18.63300 (30, 1)	16.47789 (26, 1)
5000.0 /	16.99904 (26, 1)	18.36312 (26, 1)	19.06910 (31, 1)	18.36314 (26, 1)	16.99907 (26, 1)
4000.0 /	16.80680 (26, 1)	18.84610 (26, 1)	19.57945 (26, 1)	18.84612 (26, 1)	16.80684 (26, 1)
3000.0 /	14.14039 (25, 1)	17.03041 (25, 1)	18.11951 (25, 1)	17.03043 (25, 1)	14.14043 (25, 1)
2000.0 /	12.59149 (22, 1)	15.79916 (22, 1)	17.04066 (22, 1)	15.79917 (22, 1)	12.59152 (22, 1)
1000.0 /	13.77049 (14, 1)	21.37539 (24, 1)	27.91977 (24, 1)	21.37543 (24, 1)	13.77051 (14, 1)

2ND HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00127	(25, 1)
0.0	50.0	0.01052	(25, 1)	50.0	50.0	0.00127	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00372	(30, 1)
-50.0	100.0	0.47897	(30, 1)	0.0	100.0	1.96852	(25, 1)
50.0	100.0	0.47897	(30, 1)	100.0	100.0	0.00372	(30, 1)
-100.0	200.0	0.01166	(3, 1)	-50.0	200.0	0.55770	(30, 1)
0.0	200.0	2.74830	(15, 1)	50.0	200.0	0.55770	(30, 1)
100.0	200.0	0.01167	(3, 1)	-100.0	300.0	0.97256	(8, 1)
-50.0	300.0	3.44657	(8, 1)	0.0	300.0	18.63120	(15, 1)
50.0	300.0	3.44658	(8, 1)	100.0	300.0	0.97256	(8, 1)
-100.0	400.0	5.01718	(8, 1)	-50.0	400.0	12.13191	(3, 1)
0.0	400.0	30.58105	(15, 1)	50.0	400.0	12.13191	(3, 1)
100.0	400.0	5.01719	(8, 1)	-100.0	500.0	9.95417	(8, 1)
-50.0	500.0	18.10041	(14, 1)	0.0	500.0	33.72879	(15, 1)
50.0	500.0	18.10044	(14, 1)	100.0	500.0	9.95418	(8, 1)
-100.0	600.0	14.17963	(3, 1)	-50.0	600.0	21.72404	(24, 1)
0.0	600.0	36.74251	(23, 1)	50.0	600.0	21.72411	(24, 1)
100.0	600.0	14.17964	(3, 1)	-100.0	700.0	13.88450	(8, 1)
-50.0	700.0	23.35882	(24, 1)	0.0	700.0	36.32670	(23, 1)
50.0	700.0	23.35888	(24, 1)	100.0	700.0	13.88452	(8, 1)
-100.0	800.0	13.75135	(8, 1)	-50.0	800.0	23.32469	(23, 1)
0.0	800.0	34.65434	(23, 1)	50.0	800.0	23.32474	(23, 1)
100.0	800.0	13.75136	(8, 1)	-100.0	900.0	13.77472	(14, 1)
-50.0	900.0	22.61492	(24, 1)	0.0	900.0	31.24158	(24, 1)
50.0	900.0	22.61496	(24, 1)	100.0	900.0	13.77474	(14, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 300.10992 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	143.65723 (30, 1)	145.11058 (30, 1)	145.59833 (30, 1)	145.11067 (30, 1)	143.65739 (30, 1)
24000.0 /	146.85931 (30, 1)	148.45602 (30, 1)	148.99216 (30, 1)	148.45612 (30, 1)	146.85948 (30, 1)
23000.0 /	150.18575 (30, 1)	151.94611 (30, 1)	152.53749 (30, 1)	151.94620 (30, 1)	150.18593 (30, 1)
22000.0 /	153.64055 (30, 1)	155.58862 (30, 1)	156.24348 (30, 1)	155.58871 (30, 1)	153.64075 (30, 1)
21000.0 /	157.22679 (30, 1)	159.39139 (30, 1)	160.11955 (30, 1)	159.39149 (30, 1)	157.22701 (30, 1)
20000.0 /	160.94649 (30, 1)	163.36234 (30, 1)	164.17569 (30, 1)	163.36246 (30, 1)	160.94672 (30, 1)
19000.0 /	164.79965 (30, 1)	167.50894 (30, 1)	168.42194 (30, 1)	167.50906 (30, 1)	164.79990 (30, 1)
18000.0 /	168.78360 (30, 1)	171.83801 (30, 1)	172.86842 (30, 1)	171.83813 (30, 1)	168.78384 (30, 1)
17000.0 /	172.89166 (30, 1)	176.35516 (30, 1)	177.52505 (30, 1)	176.35530 (30, 1)	172.89194 (30, 1)
16000.0 /	177.11136 (30, 1)	181.06390 (30, 1)	182.40099 (30, 1)	181.06406 (30, 1)	177.11165 (30, 1)
15000.0 /	181.42139 (30, 1)	185.96416 (30, 1)	187.50360 (30, 1)	185.96431 (30, 1)	181.42171 (30, 1)
14000.0 /	184.10942 (30, 1)	189.32445 (30, 1)	191.09547 (30, 1)	189.32462 (30, 1)	184.10976 (30, 1)
13000.0 /	186.41034 (30, 1)	192.43994 (30, 1)	194.49290 (30, 1)	192.44012 (30, 1)	186.41071 (30, 1)
12000.0 /	188.17357 (30, 1)	195.20071 (30, 1)	197.60100 (30, 1)	195.20091 (30, 1)	188.17397 (30, 1)
11000.0 /	189.18614 (30, 1)	197.44899 (30, 1)	200.28278 (30, 1)	197.44920 (30, 1)	189.18655 (30, 1)
10000.0 /	189.15773 (30, 1)	198.97107 (30, 1)	202.35411 (30, 1)	198.97130 (30, 1)	189.15819 (30, 1)
9000.0 /	189.78546 (25, 1)	199.47498 (30, 1)	203.56621 (30, 1)	199.47523 (30, 1)	189.78568 (25, 1)
8000.0 /	195.80640 (25, 1)	202.45627 (25, 1)	204.72275 (25, 1)	202.45639 (25, 1)	195.80664 (25, 1)
7000.0 /	199.90974 (25, 1)	208.54634 (25, 1)	211.50740 (25, 1)	208.54649 (25, 1)	199.91002 (25, 1)
6000.0 /	200.55856 (25, 1)	212.01086 (25, 1)	215.97188 (25, 1)	212.01103 (25, 1)	200.55887 (25, 1)
5000.0 /	195.23965 (25, 1)	210.77328 (25, 1)	216.22116 (25, 1)	210.77347 (25, 1)	195.24001 (25, 1)
4000.0 /	179.89902 (25, 1)	201.44809 (25, 1)	209.19023 (25, 1)	201.44830 (25, 1)	179.89940 (25, 1)
3000.0 /	144.96194 (26, 1)	175.24977 (26, 1)	186.69191 (26, 1)	175.25000 (26, 1)	144.96233 (26, 1)
2000.0 /	126.27491 (21, 1)	158.25464 (21, 1)	170.62253 (21, 1)	158.25481 (21, 1)	126.27518 (21, 1)
1000.0 /	155.52490 (2, 1)	230.15749 (23, 1)	300.10992 (23, 1)	230.15790 (23, 1)	155.52496 (2, 1)

HIGH
1-HR
SGROUP# 2

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.54370	(30, 1)
0.0	50.0	4.43602	(30, 1)	50.0	50.0	0.54370	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.22831	(25, 1)
-50.0	100.0	6.46006	(25, 1)	0.0	100.0	24.18613	(30, 1)
50.0	100.0	6.46023	(25, 1)	100.0	100.0	0.22832	(25, 1)
-100.0	200.0	0.36211	(25, 1)	-50.0	200.0	7.83946	(25, 1)
0.0	200.0	52.49389	(24, 1)	50.0	200.0	7.83948	(25, 1)
100.0	200.0	0.36211	(25, 1)	-100.0	300.0	16.59948	(3, 1)
-50.0	300.0	67.80637	(15, 1)	0.0	300.0	278.02518	(24, 1)
50.0	300.0	67.80652	(15, 1)	100.0	300.0	16.59949	(3, 1)
-100.0	400.0	81.92597	(3, 1)	-50.0	400.0	167.79857	(15, 1)
0.0	400.0	411.83310	(24, 1)	50.0	400.0	167.79884	(15, 1)
100.0	400.0	81.92604	(3, 1)	-100.0	500.0	135.83331	(3, 1)
-50.0	500.0	225.94499	(15, 1)	0.0	500.0	443.44781	(24, 1)
50.0	500.0	225.94530	(15, 1)	100.0	500.0	135.83339	(3, 1)
-100.0	600.0	146.40263	(2, 1)	-50.0	600.0	242.08218	(15, 1)
0.0	600.0	424.86697	(24, 1)	50.0	600.0	242.08247	(15, 1)
100.0	600.0	146.40269	(2, 1)	-100.0	700.0	174.27185	(2, 1)
-50.0	700.0	235.42047	(15, 1)	0.0	700.0	388.40756	(24, 1)
50.0	700.0	235.42073	(15, 1)	100.0	700.0	174.27193	(2, 1)
-100.0	800.0	175.46364	(2, 1)	-50.0	800.0	234.24959	(24, 1)
0.0	800.0	349.36386	(24, 1)	50.0	800.0	234.25011	(24, 1)
100.0	800.0	175.46371	(2, 1)	-100.0	900.0	165.94345	(2, 1)
-50.0	900.0	235.25462	(23, 1)	0.0	900.0	324.18365	(23, 1)
50.0	900.0	235.25510	(23, 1)	100.0	900.0	165.94351	(2, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 279.19766 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	102.73854 (31, 1)	103.77872 (31, 1)	104.12780 (31, 1)	103.77878 (31, 1)	102.73866 (31, 1)
24000.0 /	105.78704 (31, 1)	106.93814 (31, 1)	107.32464 (31, 1)	106.93820 (31, 1)	105.78717 (31, 1)
23000.0 /	109.00786 (31, 1)	110.28667 (31, 1)	110.71629 (31, 1)	110.28674 (31, 1)	109.00800 (31, 1)
22000.0 /	112.41444 (31, 1)	113.84113 (31, 1)	114.32074 (31, 1)	113.84121 (31, 1)	112.41458 (31, 1)
21000.0 /	116.02133 (31, 1)	117.62028 (31, 1)	118.15816 (31, 1)	117.62035 (31, 1)	116.02148 (31, 1)
20000.0 /	119.84408 (31, 1)	121.64498 (31, 1)	122.25130 (31, 1)	121.64507 (31, 1)	119.84425 (31, 1)
19000.0 /	123.89911 (31, 1)	125.93850 (31, 1)	126.62576 (31, 1)	125.93859 (31, 1)	123.89929 (31, 1)
18000.0 /	128.20357 (31, 1)	130.52676 (31, 1)	131.31050 (31, 1)	130.52686 (31, 1)	128.20377 (31, 1)
17000.0 /	133.51570 (25, 1)	135.43849 (31, 1)	136.33830 (31, 1)	135.43860 (31, 1)	133.51579 (25, 1)
16000.0 /	139.47968 (25, 1)	140.85339 (25, 1)	141.74640 (31, 1)	140.85344 (25, 1)	139.47977 (25, 1)
15000.0 /	145.82658 (25, 1)	147.43710 (25, 1)	147.97792 (25, 1)	147.43716 (25, 1)	145.82669 (25, 1)
14000.0 /	152.56329 (25, 1)	154.46799 (25, 1)	155.10818 (25, 1)	154.46806 (25, 1)	152.56342 (25, 1)
13000.0 /	159.68224 (25, 1)	161.95683 (25, 1)	162.72223 (25, 1)	161.95689 (25, 1)	159.68237 (25, 1)
12000.0 /	167.15146 (25, 1)	169.89748 (25, 1)	170.82283 (25, 1)	169.89755 (25, 1)	167.15161 (25, 1)
11000.0 /	174.89786 (25, 1)	178.25392 (25, 1)	179.38690 (25, 1)	178.25401 (25, 1)	174.89803 (25, 1)
10000.0 /	182.78346 (25, 1)	186.94264 (25, 1)	188.35001 (25, 1)	186.94275 (25, 1)	182.78366 (25, 1)
9000.0 /	187.68829 (30, 1)	195.00150 (25, 1)	196.77187 (25, 1)	195.00160 (25, 1)	187.68877 (30, 1)
8000.0 /	184.21939 (30, 1)	198.55759 (30, 1)	203.58092 (30, 1)	198.55786 (30, 1)	184.21991 (30, 1)
7000.0 /	177.96225 (30, 1)	195.65665 (30, 1)	201.93753 (30, 1)	195.65695 (30, 1)	177.96280 (30, 1)
6000.0 /	164.77864 (26, 1)	186.32968 (30, 1)	194.20546 (30, 1)	186.33000 (30, 1)	164.77890 (26, 1)
5000.0 /	169.99039 (26, 1)	183.63121 (26, 1)	190.69095 (31, 1)	183.63138 (26, 1)	169.99069 (26, 1)
4000.0 /	168.06802 (26, 1)	188.46100 (26, 1)	195.79449 (26, 1)	188.46121 (26, 1)	168.06837 (26, 1)
3000.0 /	141.40388 (25, 1)	170.30409 (25, 1)	181.19514 (25, 1)	170.30432 (25, 1)	141.40425 (25, 1)
2000.0 /	125.91491 (22, 1)	157.99156 (22, 1)	170.40656 (22, 1)	157.99173 (22, 1)	125.91518 (22, 1)
1000.0 /	137.70486 (14, 1)	213.75394 (24, 1)	279.19766 (24, 1)	213.75433 (24, 1)	137.70508 (14, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.01273	(25, 1)
0.0	50.0	0.10522	(25, 1)	50.0	50.0	0.01273	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.03720	(30, 1)
-50.0	100.0	4.78970	(30, 1)	0.0	100.0	19.68518	(25, 1)
50.0	100.0	4.78971	(30, 1)	100.0	100.0	0.03720	(30, 1)
-100.0	200.0	0.11662	(3, 1)	-50.0	200.0	5.57699	(30, 1)
0.0	200.0	27.48297	(15, 1)	50.0	200.0	5.57700	(30, 1)
100.0	200.0	0.11672	(3, 1)	-100.0	300.0	9.72563	(8, 1)
-50.0	300.0	34.46574	(8, 1)	0.0	300.0	186.31201	(15, 1)
50.0	300.0	34.46577	(8, 1)	100.0	300.0	9.72565	(8, 1)
-100.0	400.0	50.17179	(8, 1)	-50.0	400.0	121.31908	(3, 1)
0.0	400.0	305.81042	(15, 1)	50.0	400.0	121.31912	(3, 1)
100.0	400.0	50.17187	(8, 1)	-100.0	500.0	99.54169	(8, 1)
-50.0	500.0	181.00414	(14, 1)	0.0	500.0	337.28784	(15, 1)
50.0	500.0	181.00436	(14, 1)	100.0	500.0	99.54181	(8, 1)
-100.0	600.0	141.79626	(3, 1)	-50.0	600.0	217.24045	(24, 1)
0.0	600.0	367.42511	(23, 1)	50.0	600.0	217.24106	(24, 1)
100.0	600.0	141.79634	(3, 1)	-100.0	700.0	138.84502	(8, 1)
-50.0	700.0	233.58821	(24, 1)	0.0	700.0	363.26697	(23, 1)
50.0	700.0	233.58879	(24, 1)	100.0	700.0	138.84515	(8, 1)
-100.0	800.0	137.51347	(8, 1)	-50.0	800.0	233.24690	(23, 1)
0.0	800.0	346.54337	(23, 1)	50.0	800.0	233.24742	(23, 1)
100.0	800.0	137.51358	(8, 1)	-100.0	900.0	137.74718	(14, 1)
-50.0	900.0	226.14915	(24, 1)	0.0	900.0	312.41583	(24, 1)
50.0	900.0	226.14963	(24, 1)	100.0	900.0	137.74741	(14, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 8605.34668 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	291.53802 (30, 1)	294.43787 (30, 1)	295.41095 (30, 1)	294.43805 (30, 1)	291.53839 (30, 1)
24000.0 /	305.47165 (30, 1)	308.73489 (30, 1)	309.83044 (30, 1)	308.73508 (30, 1)	305.47202 (30, 1)
23000.0 /	320.67520 (30, 1)	324.36566 (30, 1)	325.60529 (30, 1)	324.36588 (30, 1)	320.67560 (30, 1)
22000.0 /	337.32275 (30, 1)	341.51895 (30, 1)	342.92932 (30, 1)	341.51917 (30, 1)	337.32318 (30, 1)
21000.0 /	355.62085 (30, 1)	360.42029 (30, 1)	362.03452 (30, 1)	360.42053 (30, 1)	355.62128 (30, 1)
20000.0 /	375.81601 (30, 1)	381.34094 (30, 1)	383.20062 (30, 1)	381.34119 (30, 1)	375.81656 (30, 1)
19000.0 /	398.20477 (30, 1)	404.61005 (30, 1)	406.76804 (30, 1)	404.61029 (30, 1)	398.20538 (30, 1)
18000.0 /	423.14673 (30, 1)	430.63095 (30, 1)	433.15509 (30, 1)	430.63129 (30, 1)	423.14734 (30, 1)
17000.0 /	451.08136 (30, 1)	459.90265 (30, 1)	462.88138 (30, 1)	459.90298 (30, 1)	451.08206 (30, 1)
16000.0 /	482.55090 (30, 1)	493.04956 (30, 1)	496.59973 (30, 1)	493.04996 (30, 1)	482.55170 (30, 1)
15000.0 /	517.52643 (30, 1)	530.14099 (30, 1)	534.41394 (30, 1)	530.14136 (30, 1)	517.52728 (30, 1)
14000.0 /	560.37036 (30, 1)	575.79602 (30, 1)	581.03186 (30, 1)	575.79651 (30, 1)	560.37134 (30, 1)
13000.0 /	610.63354 (30, 1)	629.79224 (30, 1)	636.31134 (30, 1)	629.79285 (30, 1)	610.63464 (30, 1)
12000.0 /	669.25159 (30, 1)	693.44183 (30, 1)	701.69824 (30, 1)	693.44250 (30, 1)	669.25293 (30, 1)
11000.0 /	738.27649 (30, 1)	769.40894 (30, 1)	780.07581 (30, 1)	769.40973 (30, 1)	738.27808 (30, 1)
10000.0 /	820.41522 (30, 1)	861.39111 (30, 1)	875.50000 (30, 1)	861.39203 (30, 1)	820.41711 (30, 1)
9000.0 /	919.26318 (30, 1)	974.65234 (30, 1)	993.84802 (30, 1)	974.65356 (30, 1)	919.26526 (30, 1)
8000.0 /	1039.58826 (30, 1)	1116.90967 (30, 1)	1143.94214 (30, 1)	1116.91113 (30, 1)	1039.59082 (30, 1)
7000.0 /	1185.94580 (30, 1)	1298.07642 (30, 1)	1337.76355 (30, 1)	1298.07825 (30, 1)	1185.94922 (30, 1)
6000.0 /	1371.21875 (30, 1)	1542.63330 (30, 1)	1604.41211 (30, 1)	1542.63574 (30, 1)	1371.22302 (30, 1)
5000.0 /	1603.65979 (30, 1)	1883.67993 (30, 1)	1987.50488 (30, 1)	1883.68335 (30, 1)	1603.66553 (30, 1)
4000.0 /	1872.62866 (30, 1)	2368.91870 (30, 1)	2562.07275 (30, 1)	2368.92383 (30, 1)	1872.63647 (30, 1)
3000.0 /	2104.68994 (30, 1)	3079.73901 (30, 1)	3496.70654 (30, 1)	3079.74634 (30, 1)	2104.70044 (30, 1)
2000.0 /	2146.46460 (25, 1)	4063.64844 (30, 1)	5199.51172 (30, 1)	4063.66113 (30, 1)	2146.47144 (25, 1)
1000.0 /	2108.23242 (16, 1)	5103.53809 (25, 1)	8605.34668 (30, 1)	5103.54980 (25, 1)	2108.23853 (16, 1)

HIGH
1-HR
SGROUP# 3

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	378.89456	(1, 1)	0.0	100.0	1142.53784	(9, 1)
50.0	100.0	378.89481	(1, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	202.36325	(1, 1)	-50.0	200.0	1117.72803	(4, 1)
0.0	200.0	3151.46558	(9, 1)	50.0	200.0	1117.72888	(4, 1)
100.0	200.0	202.36349	(1, 1)	-100.0	300.0	534.81128	(1, 1)
-50.0	300.0	3024.33594	(4, 1)	0.0	300.0	9988.27734	(9, 1)
50.0	300.0	3024.33838	(4, 1)	100.0	300.0	534.81183	(1, 1)
-100.0	400.0	921.31323	(1, 1)	-50.0	400.0	4912.34814	(4, 1)
0.0	400.0	14365.40039	(16, 1)	50.0	400.0	4912.35156	(4, 1)
100.0	400.0	921.31403	(1, 1)	-100.0	500.0	1521.49390	(4, 1)
-50.0	500.0	5429.22705	(9, 1)	0.0	500.0	13315.02539	(16, 1)
50.0	500.0	5429.23291	(9, 1)	100.0	500.0	1521.49609	(4, 1)
-100.0	600.0	1733.68152	(4, 1)	-50.0	600.0	5624.42676	(16, 1)
0.0	600.0	11542.34570	(16, 1)	50.0	600.0	5624.43652	(16, 1)
100.0	600.0	1733.68347	(4, 1)	-100.0	700.0	1783.24976	(9, 1)
-50.0	700.0	5729.05566	(16, 1)	0.0	700.0	10424.50781	(25, 1)
50.0	700.0	5729.06543	(16, 1)	100.0	700.0	1783.25317	(9, 1)
-100.0	800.0	1864.07397	(9, 1)	-50.0	800.0	5494.63428	(16, 1)
0.0	800.0	9456.61523	(25, 1)	50.0	800.0	5494.64307	(16, 1)
100.0	800.0	1864.07715	(9, 1)	-100.0	900.0	1919.57629	(16, 1)
-50.0	900.0	5182.89746	(25, 1)	0.0	900.0	9018.02539	(30, 1)
50.0	900.0	5182.90918	(25, 1)	100.0	900.0	1919.58203	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 7763.14355 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	145.76901 (31, 1)	147.21893 (31, 1)	147.70547 (31, 1)	147.21902 (31, 1)	145.76920 (31, 1)
24000.0 /	152.73582 (31, 1)	154.36745 (31, 1)	154.91522 (31, 1)	154.36754 (31, 1)	152.73601 (31, 1)
23000.0 /	160.33760 (31, 1)	162.18283 (31, 1)	162.80264 (31, 1)	162.18294 (31, 1)	160.33780 (31, 1)
22000.0 /	168.66138 (31, 1)	170.75948 (31, 1)	171.46466 (31, 1)	170.75958 (31, 1)	168.66159 (31, 1)
21000.0 /	177.81042 (31, 1)	180.21014 (31, 1)	181.01726 (31, 1)	180.21027 (31, 1)	177.81064 (31, 1)
20000.0 /	187.90800 (31, 1)	190.67047 (31, 1)	191.60031 (31, 1)	190.67059 (31, 1)	187.90828 (31, 1)
19000.0 /	199.10239 (31, 1)	202.30502 (31, 1)	203.38402 (31, 1)	202.30515 (31, 1)	199.10269 (31, 1)
18000.0 /	211.57336 (31, 1)	215.31548 (31, 1)	216.57755 (31, 1)	215.31564 (31, 1)	211.57367 (31, 1)
17000.0 /	225.54068 (31, 1)	229.95132 (31, 1)	231.44069 (31, 1)	229.95149 (31, 1)	225.54103 (31, 1)
16000.0 /	241.27545 (31, 1)	246.52478 (31, 1)	248.29987 (31, 1)	246.52498 (31, 1)	241.27585 (31, 1)
15000.0 /	258.76321 (31, 1)	265.07050 (31, 1)	267.20697 (31, 1)	265.07068 (31, 1)	258.76364 (31, 1)
14000.0 /	280.18518 (31, 1)	287.89801 (31, 1)	290.51593 (31, 1)	287.89825 (31, 1)	280.18567 (31, 1)
13000.0 /	305.31677 (31, 1)	314.89612 (31, 1)	318.15567 (31, 1)	314.89642 (31, 1)	305.31732 (31, 1)
12000.0 /	334.62579 (31, 1)	346.72092 (31, 1)	350.84912 (31, 1)	346.72125 (31, 1)	334.62646 (31, 1)
11000.0 /	369.13824 (31, 1)	384.70447 (31, 1)	390.03790 (31, 1)	384.70486 (31, 1)	369.13904 (31, 1)
10000.0 /	411.76709 (25, 1)	430.69556 (31, 1)	437.75000 (31, 1)	430.69601 (31, 1)	411.76752 (25, 1)
9000.0 /	472.05408 (25, 1)	487.32617 (31, 1)	496.92401 (31, 1)	487.32678 (31, 1)	472.05457 (25, 1)
8000.0 /	549.17639 (25, 1)	567.62598 (25, 1)	573.91272 (25, 1)	567.62628 (25, 1)	549.17706 (25, 1)
7000.0 /	650.04456 (25, 1)	677.81714 (25, 1)	687.33624 (25, 1)	677.81763 (25, 1)	650.04535 (25, 1)
6000.0 /	785.89063 (25, 1)	830.27332 (25, 1)	845.61829 (25, 1)	830.27386 (25, 1)	785.89178 (25, 1)
5000.0 /	975.04413 (25, 1)	1051.84119 (25, 1)	1078.76343 (25, 1)	1051.84204 (25, 1)	975.04578 (25, 1)
4000.0 /	1242.58557 (25, 1)	1390.39893 (25, 1)	1443.48621 (25, 1)	1390.40027 (25, 1)	1242.58801 (25, 1)
3000.0 /	1652.17297 (25, 1)	1991.04285 (25, 1)	2118.84302 (25, 1)	1991.04517 (25, 1)	1652.17700 (25, 1)
2000.0 /	1943.67261 (30, 1)	3136.62256 (25, 1)	3560.08984 (25, 1)	3136.62744 (25, 1)	1943.68433 (30, 1)
1000.0 /	1704.74976 (9, 1)	4757.47266 (16, 1)	7763.14355 (25, 1)	4757.47949 (16, 1)	1704.75244 (9, 1)

2ND HIGH
1-HR
SGROUP# 3

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	307.49426	(4, 1)	0.0	100.0	1085.21472	(4, 1)
50.0	100.0	307.49463	(4, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	111.73393	(4, 1)	-50.0	200.0	1081.23230	(1, 1)
0.0	200.0	3020.23389	(16, 1)	50.0	200.0	1081.23279	(1, 1)
100.0	200.0	111.73412	(4, 1)	-100.0	300.0	406.35938	(4, 1)
-50.0	300.0	2988.96265	(1, 1)	0.0	300.0	9610.01953	(16, 1)
50.0	300.0	2988.96436	(1, 1)	100.0	300.0	406.35986	(4, 1)
-100.0	400.0	893.52429	(4, 1)	-50.0	400.0	4534.73389	(9, 1)
0.0	400.0	13815.90234	(9, 1)	50.0	400.0	4534.73877	(9, 1)
100.0	400.0	893.52557	(4, 1)	-100.0	500.0	1301.91553	(1, 1)
-50.0	500.0	4892.54199	(16, 1)	0.0	500.0	12029.47852	(25, 1)
50.0	500.0	4892.55078	(16, 1)	100.0	500.0	1301.91675	(1, 1)
-100.0	600.0	1489.57422	(9, 1)	-50.0	600.0	5061.23584	(9, 1)
0.0	600.0	11361.34668	(25, 1)	50.0	600.0	5061.24072	(9, 1)
100.0	600.0	1489.57727	(9, 1)	-100.0	700.0	1605.11353	(4, 1)
-50.0	700.0	4870.35938	(25, 1)	0.0	700.0	9820.06836	(16, 1)
50.0	700.0	4870.37061	(25, 1)	100.0	700.0	1605.11499	(4, 1)
-100.0	800.0	1625.48596	(16, 1)	-50.0	800.0	5133.68799	(25, 1)
0.0	800.0	9397.77246	(30, 1)	50.0	800.0	5133.70068	(25, 1)
100.0	800.0	1625.49084	(16, 1)	-100.0	900.0	1815.56873	(9, 1)
-50.0	900.0	5144.27441	(16, 1)	0.0	900.0	8557.44727	(25, 1)
50.0	900.0	5144.28223	(16, 1)	100.0	900.0	1815.57153	(9, 1)

HIGH
1-HR
SGROUP# 4

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 166.93977 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	86.40832 (30, 1)	87.28294 (30, 1)	87.57646 (30, 1)	87.28299 (30, 1)	86.40842 (30, 1)
24000.0 /	88.07448 (30, 1)	89.03259 (30, 1)	89.35428 (30, 1)	89.03264 (30, 1)	88.07458 (30, 1)
23000.0 /	89.78332 (30, 1)	90.83630 (30, 1)	91.19005 (30, 1)	90.83636 (30, 1)	89.78343 (30, 1)
22000.0 /	91.53252 (30, 1)	92.69383 (30, 1)	93.08422 (30, 1)	92.69389 (30, 1)	91.53264 (30, 1)
21000.0 /	93.31859 (30, 1)	94.60422 (30, 1)	95.03671 (30, 1)	94.60429 (30, 1)	93.31872 (30, 1)
20000.0 /	95.13628 (30, 1)	96.56537 (30, 1)	97.04651 (30, 1)	96.56544 (30, 1)	95.13641 (30, 1)
19000.0 /	96.97801 (30, 1)	98.57362 (30, 1)	99.11133 (30, 1)	98.57369 (30, 1)	96.97816 (30, 1)
18000.0 /	98.83317 (30, 1)	100.62332 (30, 1)	101.22724 (30, 1)	100.62340 (30, 1)	98.83332 (30, 1)
17000.0 /	100.68695 (30, 1)	102.70600 (30, 1)	103.38800 (30, 1)	102.70608 (30, 1)	100.68711 (30, 1)
16000.0 /	102.51892 (30, 1)	104.80935 (30, 1)	105.58418 (30, 1)	104.80944 (30, 1)	102.51909 (30, 1)
15000.0 /	104.30079 (30, 1)	106.91571 (30, 1)	107.80187 (30, 1)	106.91580 (30, 1)	104.30096 (30, 1)
14000.0 /	107.64511 (25, 1)	108.98982 (25, 1)	109.44180 (25, 1)	108.98987 (25, 1)	107.64520 (25, 1)
13000.0 /	111.99289 (25, 1)	113.58926 (25, 1)	114.12643 (25, 1)	113.58930 (25, 1)	111.99299 (25, 1)
12000.0 /	116.41211 (25, 1)	118.32607 (25, 1)	118.97104 (25, 1)	118.32613 (25, 1)	116.41222 (25, 1)
11000.0 /	120.80189 (25, 1)	123.12205 (25, 1)	123.90531 (25, 1)	123.12211 (25, 1)	120.80201 (25, 1)
10000.0 /	125.00088 (25, 1)	127.84832 (25, 1)	128.81183 (25, 1)	127.84839 (25, 1)	125.00101 (25, 1)
9000.0 /	128.09018 (25, 1)	131.61519 (25, 1)	132.81165 (25, 1)	131.61526 (25, 1)	128.09032 (25, 1)
8000.0 /	129.98233 (25, 1)	134.40387 (25, 1)	135.91092 (25, 1)	134.40396 (25, 1)	129.98250 (25, 1)
7000.0 /	129.89729 (25, 1)	135.52075 (25, 1)	137.44887 (25, 1)	135.52084 (25, 1)	129.89748 (25, 1)
6000.0 /	126.64941 (25, 1)	133.90108 (25, 1)	136.40945 (25, 1)	133.90118 (25, 1)	126.64961 (25, 1)
5000.0 /	118.47974 (25, 1)	127.94205 (25, 1)	131.26125 (25, 1)	127.94217 (25, 1)	118.47995 (25, 1)
4000.0 /	102.94048 (25, 1)	115.34181 (25, 1)	119.79916 (25, 1)	115.34193 (25, 1)	102.94070 (25, 1)
3000.0 /	86.73267 (10, 1)	90.83924 (10, 1)	95.82949 (26, 1)	90.83927 (10, 1)	86.73273 (10, 1)
2000.0 /	108.38101 (5, 1)	113.27032 (5, 1)	121.35062 (22, 1)	113.27035 (5, 1)	108.38106 (5, 1)
1000.0 /	147.79041 (2, 1)	160.13829 (2, 1)	166.93977 (14, 1)	160.13832 (2, 1)	147.79045 (2, 1)

HIGH
1-HR
SGROUP# 4

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(30, 1)
0.0	50.0	0.00002	(30, 1)	50.0	50.0	0.00000	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00518	(25, 1)
-50.0	100.0	0.34826	(25, 1)	0.0	100.0	1.41621	(25, 1)
50.0	100.0	0.34828	(25, 1)	100.0	100.0	0.00518	(25, 1)
-100.0	200.0	0.03005	(3, 1)	-50.0	200.0	0.81875	(25, 1)
0.0	200.0	2.72081	(25, 1)	50.0	200.0	0.81875	(25, 1)
100.0	200.0	0.03008	(3, 1)	-100.0	300.0	9.42641	(3, 1)
-50.0	300.0	18.12719	(3, 1)	0.0	300.0	38.45771	(15, 1)
50.0	300.0	18.12720	(3, 1)	100.0	300.0	9.42642	(3, 1)
-100.0	400.0	61.74636	(3, 1)	-50.0	400.0	91.80869	(3, 1)
0.0	400.0	115.89244	(15, 1)	50.0	400.0	91.80872	(3, 1)
100.0	400.0	61.74641	(3, 1)	-100.0	500.0	115.96919	(3, 1)
-50.0	500.0	151.78448	(3, 1)	0.0	500.0	172.07773	(15, 1)
50.0	500.0	151.78453	(3, 1)	100.0	500.0	115.96927	(3, 1)
-100.0	600.0	135.02815	(2, 1)	-50.0	600.0	161.66185	(2, 1)
0.0	600.0	194.87155	(15, 1)	50.0	600.0	161.66190	(2, 1)
100.0	600.0	135.02821	(2, 1)	-100.0	700.0	164.56766	(2, 1)
-50.0	700.0	189.71365	(2, 1)	0.0	700.0	198.92223	(2, 1)
50.0	700.0	189.71370	(2, 1)	100.0	700.0	164.56772	(2, 1)
-100.0	800.0	166.69812	(2, 1)	-50.0	800.0	187.05219	(2, 1)
0.0	800.0	194.37489	(2, 1)	50.0	800.0	187.05223	(2, 1)
100.0	800.0	166.69820	(2, 1)	-100.0	900.0	157.74208	(2, 1)
-50.0	900.0	173.51654	(2, 1)	0.0	900.0	179.11778	(2, 1)
50.0	900.0	173.51657	(2, 1)	100.0	900.0	157.74214	(2, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 166.92752 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	70.98795 (25, 1)	71.30583 (25, 1)	71.41212 (25, 1)	71.30585 (25, 1)	70.98799 (25, 1)
24000.0 /	73.45352 (25, 1)	73.80695 (25, 1)	73.92515 (25, 1)	73.80697 (25, 1)	73.45357 (25, 1)
23000.0 /	76.07738 (25, 1)	76.47194 (25, 1)	76.60392 (25, 1)	76.47196 (25, 1)	76.07743 (25, 1)
22000.0 /	78.87391 (25, 1)	79.31632 (25, 1)	79.46436 (25, 1)	79.31635 (25, 1)	78.87395 (25, 1)
21000.0 /	81.85903 (25, 1)	82.35748 (25, 1)	82.52430 (25, 1)	82.35750 (25, 1)	81.85908 (25, 1)
20000.0 /	85.05039 (25, 1)	85.61488 (25, 1)	85.80388 (25, 1)	85.61490 (25, 1)	85.05044 (25, 1)
19000.0 /	88.35042 (25, 1)	88.99247 (25, 1)	89.20753 (25, 1)	88.99250 (25, 1)	88.35047 (25, 1)
18000.0 /	91.83634 (25, 1)	92.57074 (25, 1)	92.81685 (25, 1)	92.57077 (25, 1)	91.83640 (25, 1)
17000.0 /	95.51250 (25, 1)	96.35770 (25, 1)	96.64109 (25, 1)	96.35773 (25, 1)	95.51257 (25, 1)
16000.0 /	99.37899 (25, 1)	100.35822 (25, 1)	100.68678 (25, 1)	100.35825 (25, 1)	99.37906 (25, 1)
15000.0 /	103.42903 (25, 1)	104.57191 (25, 1)	104.95570 (25, 1)	104.57196 (25, 1)	103.42912 (25, 1)
14000.0 /	104.80951 (30, 1)	107.78249 (30, 1)	108.79214 (30, 1)	107.78259 (30, 1)	104.80970 (30, 1)
13000.0 /	104.91891 (30, 1)	108.31806 (30, 1)	109.47545 (30, 1)	108.31817 (30, 1)	104.91912 (30, 1)
12000.0 /	104.51522 (30, 1)	108.42548 (30, 1)	109.76118 (30, 1)	108.42559 (30, 1)	104.51543 (30, 1)
11000.0 /	103.44550 (30, 1)	107.97337 (30, 1)	109.52632 (30, 1)	107.97349 (30, 1)	103.44572 (30, 1)
10000.0 /	101.51237 (30, 1)	106.79234 (30, 1)	108.61270 (30, 1)	106.79247 (30, 1)	101.51261 (30, 1)
9000.0 /	98.46101 (30, 1)	104.66361 (30, 1)	106.81684 (30, 1)	104.66375 (30, 1)	98.46126 (30, 1)
8000.0 /	97.14505 (26, 1)	101.30511 (30, 1)	103.87772 (30, 1)	101.30524 (30, 1)	97.14517 (26, 1)
7000.0 /	101.06947 (26, 1)	105.46191 (26, 1)	106.96810 (26, 1)	105.46198 (26, 1)	101.06960 (26, 1)
6000.0 /	103.43893 (26, 1)	109.39207 (26, 1)	111.45166 (26, 1)	109.39215 (26, 1)	103.43909 (26, 1)
5000.0 /	102.64743 (26, 1)	110.90421 (26, 1)	113.80154 (26, 1)	110.90431 (26, 1)	102.64761 (26, 1)
4000.0 /	95.83032 (26, 1)	107.50060 (26, 1)	111.69842 (26, 1)	107.50072 (26, 1)	95.83053 (26, 1)
3000.0 /	83.49776 (5, 1)	89.92365 (26, 1)	93.27660 (25, 1)	89.92376 (26, 1)	83.49778 (5, 1)
2000.0 /	93.58311 (12, 1)	112.49309 (22, 1)	120.34840 (21, 1)	112.49321 (22, 1)	93.58320 (12, 1)
1000.0 /	109.17087 (7, 1)	148.74783 (14, 1)	166.92752 (23, 1)	148.74796 (14, 1)	109.17094 (7, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(25, 1)
0.0	50.0	0.00000	(25, 1)	50.0	50.0	0.00000	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00026	(30, 1)
-50.0	100.0	0.15922	(30, 1)	0.0	100.0	1.34507	(30, 1)
50.0	100.0	0.15922	(30, 1)	100.0	100.0	0.00026	(30, 1)
-100.0	200.0	0.02231	(25, 1)	-50.0	200.0	0.21223	(30, 1)
0.0	200.0	1.54860	(30, 1)	50.0	200.0	0.21223	(30, 1)
100.0	200.0	0.02231	(25, 1)	-100.0	300.0	3.28493	(8, 1)
-50.0	300.0	13.89655	(15, 1)	0.0	300.0	22.54198	(3, 1)
50.0	300.0	13.89658	(15, 1)	100.0	300.0	3.28493	(8, 1)
-100.0	400.0	26.25138	(8, 1)	-50.0	400.0	63.35564	(15, 1)
0.0	400.0	104.78712	(3, 1)	50.0	400.0	63.35574	(15, 1)
100.0	400.0	26.25142	(8, 1)	-100.0	500.0	74.76759	(2, 1)
-50.0	500.0	115.01746	(15, 1)	0.0	500.0	166.03093	(3, 1)
50.0	500.0	115.01762	(15, 1)	100.0	500.0	74.76764	(2, 1)
-100.0	600.0	128.82957	(3, 1)	-50.0	600.0	156.83070	(3, 1)
0.0	600.0	171.65982	(2, 1)	50.0	600.0	156.83075	(3, 1)
100.0	600.0	128.82965	(3, 1)	-100.0	700.0	122.70412	(3, 1)
-50.0	700.0	156.92682	(15, 1)	0.0	700.0	195.57297	(15, 1)
50.0	700.0	156.92699	(15, 1)	100.0	700.0	122.70419	(3, 1)
-100.0	800.0	114.76163	(3, 1)	-50.0	800.0	156.76149	(15, 1)
0.0	800.0	186.44238	(15, 1)	50.0	800.0	156.76164	(15, 1)
100.0	800.0	114.76168	(3, 1)	-100.0	900.0	111.07755	(7, 1)
-50.0	900.0	153.63974	(14, 1)	0.0	900.0	176.59396	(14, 1)
50.0	900.0	153.63988	(14, 1)	100.0	900.0	111.07763	(7, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 166.93977 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	86.40832 (30, 1)	87.28294 (30, 1)	87.57646 (30, 1)	87.28299 (30, 1)	86.40842 (30, 1)
24000.0 /	88.07448 (30, 1)	89.03259 (30, 1)	89.35428 (30, 1)	89.03264 (30, 1)	88.07458 (30, 1)
23000.0 /	89.78332 (30, 1)	90.83630 (30, 1)	91.19005 (30, 1)	90.83636 (30, 1)	89.78343 (30, 1)
22000.0 /	91.53252 (30, 1)	92.69383 (30, 1)	93.08422 (30, 1)	92.69389 (30, 1)	91.53264 (30, 1)
21000.0 /	93.31859 (30, 1)	94.60422 (30, 1)	95.03671 (30, 1)	94.60429 (30, 1)	93.31872 (30, 1)
20000.0 /	95.13628 (30, 1)	96.56537 (30, 1)	97.04651 (30, 1)	96.56544 (30, 1)	95.13641 (30, 1)
19000.0 /	96.97801 (30, 1)	98.57362 (30, 1)	99.11133 (30, 1)	98.57369 (30, 1)	96.97816 (30, 1)
18000.0 /	98.83317 (30, 1)	100.62332 (30, 1)	101.22724 (30, 1)	100.62340 (30, 1)	98.83332 (30, 1)
17000.0 /	100.68695 (30, 1)	102.70600 (30, 1)	103.38800 (30, 1)	102.70608 (30, 1)	100.68711 (30, 1)
16000.0 /	102.51892 (30, 1)	104.80935 (30, 1)	105.58418 (30, 1)	104.80944 (30, 1)	102.51909 (30, 1)
15000.0 /	104.30079 (30, 1)	106.91571 (30, 1)	107.80187 (30, 1)	106.91580 (30, 1)	104.30096 (30, 1)
14000.0 /	107.64511 (25, 1)	108.98982 (25, 1)	109.44180 (25, 1)	108.98987 (25, 1)	107.64520 (25, 1)
13000.0 /	111.99289 (25, 1)	113.58926 (25, 1)	114.12643 (25, 1)	113.58930 (25, 1)	111.99299 (25, 1)
12000.0 /	116.41211 (25, 1)	118.32607 (25, 1)	118.97104 (25, 1)	118.32613 (25, 1)	116.41222 (25, 1)
11000.0 /	120.80189 (25, 1)	123.12205 (25, 1)	123.90531 (25, 1)	123.12211 (25, 1)	120.80201 (25, 1)
10000.0 /	125.00088 (25, 1)	127.84832 (25, 1)	128.81183 (25, 1)	127.84839 (25, 1)	125.00101 (25, 1)
9000.0 /	128.09018 (25, 1)	131.61519 (25, 1)	132.81165 (25, 1)	131.61526 (25, 1)	128.09032 (25, 1)
8000.0 /	129.98233 (25, 1)	134.40387 (25, 1)	135.91092 (25, 1)	134.40396 (25, 1)	129.98250 (25, 1)
7000.0 /	129.89729 (25, 1)	135.52075 (25, 1)	137.44887 (25, 1)	135.52084 (25, 1)	129.89748 (25, 1)
6000.0 /	126.64941 (25, 1)	133.90108 (25, 1)	136.40945 (25, 1)	133.90118 (25, 1)	126.64961 (25, 1)
5000.0 /	118.47974 (25, 1)	127.94205 (25, 1)	131.26125 (25, 1)	127.94217 (25, 1)	118.47995 (25, 1)
4000.0 /	102.94048 (25, 1)	115.34181 (25, 1)	119.79916 (25, 1)	115.34193 (25, 1)	102.94070 (25, 1)
3000.0 /	86.73267 (10, 1)	90.83924 (10, 1)	95.82949 (26, 1)	90.83927 (10, 1)	86.73273 (10, 1)
2000.0 /	108.38101 (5, 1)	113.27032 (5, 1)	121.35062 (22, 1)	113.27035 (5, 1)	108.38106 (5, 1)
1000.0 /	147.79041 (2, 1)	160.13829 (2, 1)	166.93977 (14, 1)	160.13832 (2, 1)	147.79045 (2, 1)

HIGH
1-HR
SGROUP# 5

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(30, 1)
0.0	50.0	0.00002	(30, 1)	50.0	50.0	0.00000	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00518	(25, 1)
-50.0	100.0	0.34826	(25, 1)	0.0	100.0	1.41621	(25, 1)
50.0	100.0	0.34828	(25, 1)	100.0	100.0	0.00518	(25, 1)
-100.0	200.0	0.03005	(3, 1)	-50.0	200.0	0.81875	(25, 1)
0.0	200.0	2.72081	(25, 1)	50.0	200.0	0.81875	(25, 1)
100.0	200.0	0.03008	(3, 1)	-100.0	300.0	9.42641	(3, 1)
-50.0	300.0	18.12719	(3, 1)	0.0	300.0	38.45771	(15, 1)
50.0	300.0	18.12720	(3, 1)	100.0	300.0	9.42642	(3, 1)
-100.0	400.0	61.74636	(3, 1)	-50.0	400.0	91.80869	(3, 1)
0.0	400.0	115.89244	(15, 1)	50.0	400.0	91.80872	(3, 1)
100.0	400.0	61.74641	(3, 1)	-100.0	500.0	115.96919	(3, 1)
-50.0	500.0	151.78448	(3, 1)	0.0	500.0	172.07773	(15, 1)
50.0	500.0	151.78453	(3, 1)	100.0	500.0	115.96927	(3, 1)
-100.0	600.0	135.02815	(2, 1)	-50.0	600.0	161.66185	(2, 1)
0.0	600.0	194.87155	(15, 1)	50.0	600.0	161.66190	(2, 1)
100.0	600.0	135.02821	(2, 1)	-100.0	700.0	164.56766	(2, 1)
-50.0	700.0	189.71365	(2, 1)	0.0	700.0	198.92223	(2, 1)
50.0	700.0	189.71370	(2, 1)	100.0	700.0	164.56772	(2, 1)
-100.0	800.0	166.69812	(2, 1)	-50.0	800.0	187.05219	(2, 1)
0.0	800.0	194.37489	(2, 1)	50.0	800.0	187.05223	(2, 1)
100.0	800.0	166.69820	(2, 1)	-100.0	900.0	157.74208	(2, 1)
-50.0	900.0	173.51654	(2, 1)	0.0	900.0	179.11778	(2, 1)
50.0	900.0	173.51657	(2, 1)	100.0	900.0	157.74214	(2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 166.92752 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	70.98795 (25, 1)	71.30583 (25, 1)	71.41212 (25, 1)	71.30585 (25, 1)	70.98799 (25, 1)
24000.0 /	73.45352 (25, 1)	73.80695 (25, 1)	73.92515 (25, 1)	73.80697 (25, 1)	73.45357 (25, 1)
23000.0 /	76.07738 (25, 1)	76.47194 (25, 1)	76.60392 (25, 1)	76.47196 (25, 1)	76.07743 (25, 1)
22000.0 /	78.87391 (25, 1)	79.31632 (25, 1)	79.46436 (25, 1)	79.31635 (25, 1)	78.87395 (25, 1)
21000.0 /	81.85903 (25, 1)	82.35748 (25, 1)	82.52430 (25, 1)	82.35750 (25, 1)	81.85908 (25, 1)
20000.0 /	85.05039 (25, 1)	85.61488 (25, 1)	85.80388 (25, 1)	85.61490 (25, 1)	85.05044 (25, 1)
19000.0 /	88.35042 (25, 1)	88.99247 (25, 1)	89.20753 (25, 1)	88.99250 (25, 1)	88.35047 (25, 1)
18000.0 /	91.83634 (25, 1)	92.57074 (25, 1)	92.81685 (25, 1)	92.57077 (25, 1)	91.83640 (25, 1)
17000.0 /	95.51250 (25, 1)	96.35770 (25, 1)	96.64109 (25, 1)	96.35773 (25, 1)	95.51257 (25, 1)
16000.0 /	99.37899 (25, 1)	100.35822 (25, 1)	100.68678 (25, 1)	100.35825 (25, 1)	99.37906 (25, 1)
15000.0 /	103.42903 (25, 1)	104.57191 (25, 1)	104.95570 (25, 1)	104.57196 (25, 1)	103.42912 (25, 1)
14000.0 /	104.80951 (30, 1)	107.78249 (30, 1)	108.79214 (30, 1)	107.78259 (30, 1)	104.80970 (30, 1)
13000.0 /	104.91891 (30, 1)	108.31806 (30, 1)	109.47545 (30, 1)	108.31817 (30, 1)	104.91912 (30, 1)
12000.0 /	104.51522 (30, 1)	108.42548 (30, 1)	109.76118 (30, 1)	108.42559 (30, 1)	104.51543 (30, 1)
11000.0 /	103.44550 (30, 1)	107.97337 (30, 1)	109.52632 (30, 1)	107.97349 (30, 1)	103.44572 (30, 1)
10000.0 /	101.51237 (30, 1)	106.79234 (30, 1)	108.61270 (30, 1)	106.79247 (30, 1)	101.51261 (30, 1)
9000.0 /	98.46101 (30, 1)	104.66361 (30, 1)	106.81684 (30, 1)	104.66375 (30, 1)	98.46126 (30, 1)
8000.0 /	97.14505 (26, 1)	101.30511 (30, 1)	103.87772 (30, 1)	101.30524 (30, 1)	97.14517 (26, 1)
7000.0 /	101.06947 (26, 1)	105.46191 (26, 1)	106.96810 (26, 1)	105.46198 (26, 1)	101.06960 (26, 1)
6000.0 /	103.43893 (26, 1)	109.39207 (26, 1)	111.45166 (26, 1)	109.39215 (26, 1)	103.43909 (26, 1)
5000.0 /	102.64743 (26, 1)	110.90421 (26, 1)	113.80154 (26, 1)	110.90431 (26, 1)	102.64761 (26, 1)
4000.0 /	95.83032 (26, 1)	107.50060 (26, 1)	111.69842 (26, 1)	107.50072 (26, 1)	95.83053 (26, 1)
3000.0 /	83.49776 (5, 1)	89.92365 (26, 1)	93.27660 (25, 1)	89.92376 (26, 1)	83.49778 (5, 1)
2000.0 /	93.58311 (12, 1)	112.49309 (22, 1)	120.34840 (21, 1)	112.49321 (22, 1)	93.58320 (12, 1)
1000.0 /	109.17087 (7, 1)	148.74783 (14, 1)	166.92752 (23, 1)	148.74796 (14, 1)	109.17094 (7, 1)

2ND HIGH
1-HR
SGROUP# 5

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(25, 1)
0.0	50.0	0.00000	(25, 1)	50.0	50.0	0.00000	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00026	(30, 1)
-50.0	100.0	0.15922	(30, 1)	0.0	100.0	1.34507	(30, 1)
50.0	100.0	0.15922	(30, 1)	100.0	100.0	0.00026	(30, 1)
-100.0	200.0	0.02231	(25, 1)	-50.0	200.0	0.21223	(30, 1)
0.0	200.0	1.54860	(30, 1)	50.0	200.0	0.21223	(30, 1)
100.0	200.0	0.02231	(25, 1)	-100.0	300.0	3.28493	(8, 1)
-50.0	300.0	13.89655	(15, 1)	0.0	300.0	22.54198	(3, 1)
50.0	300.0	13.89658	(15, 1)	100.0	300.0	3.28493	(8, 1)
-100.0	400.0	26.25138	(8, 1)	-50.0	400.0	63.35564	(15, 1)
0.0	400.0	104.78712	(3, 1)	50.0	400.0	63.35574	(15, 1)
100.0	400.0	26.25142	(8, 1)	-100.0	500.0	74.76759	(2, 1)
-50.0	500.0	115.01746	(15, 1)	0.0	500.0	166.03093	(3, 1)
50.0	500.0	115.01762	(15, 1)	100.0	500.0	74.76764	(2, 1)
-100.0	600.0	128.82957	(3, 1)	-50.0	600.0	156.83070	(3, 1)
0.0	600.0	171.65982	(2, 1)	50.0	600.0	156.83075	(3, 1)
100.0	600.0	128.82965	(3, 1)	-100.0	700.0	122.70412	(3, 1)
-50.0	700.0	156.92682	(15, 1)	0.0	700.0	195.57297	(15, 1)
50.0	700.0	156.92699	(15, 1)	100.0	700.0	122.70419	(3, 1)
-100.0	800.0	114.76163	(3, 1)	-50.0	800.0	156.76149	(15, 1)
0.0	800.0	186.44238	(15, 1)	50.0	800.0	156.76164	(15, 1)
100.0	800.0	114.76168	(3, 1)	-100.0	900.0	111.07755	(7, 1)
-50.0	900.0	153.63974	(14, 1)	0.0	900.0	176.59396	(14, 1)
50.0	900.0	153.63988	(14, 1)	100.0	900.0	111.07763	(7, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 243.16646 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	121.06509 (30, 1)	122.29007 (30, 1)	122.70117 (30, 1)	122.29015 (30, 1)	121.06524 (30, 1)
24000.0 /	123.55380 (30, 1)	124.89735 (30, 1)	125.34846 (30, 1)	124.89742 (30, 1)	123.55396 (30, 1)
23000.0 /	126.12313 (30, 1)	127.60168 (30, 1)	128.09840 (30, 1)	127.60177 (30, 1)	126.12329 (30, 1)
22000.0 /	128.77313 (30, 1)	130.40619 (30, 1)	130.95515 (30, 1)	130.40628 (30, 1)	128.77330 (30, 1)
21000.0 /	131.50266 (30, 1)	133.31346 (30, 1)	133.92261 (30, 1)	133.31354 (30, 1)	131.50284 (30, 1)
20000.0 /	134.30887 (30, 1)	136.32530 (30, 1)	137.00418 (30, 1)	136.32539 (30, 1)	134.30905 (30, 1)
19000.0 /	137.18657 (30, 1)	139.44243 (30, 1)	140.20262 (30, 1)	139.44254 (30, 1)	137.18677 (30, 1)
18000.0 /	140.12735 (30, 1)	142.66383 (30, 1)	143.51952 (30, 1)	142.66394 (30, 1)	140.12756 (30, 1)
17000.0 /	143.11829 (30, 1)	145.98616 (30, 1)	146.95486 (30, 1)	145.98627 (30, 1)	143.11852 (30, 1)
16000.0 /	146.14023 (30, 1)	149.40265 (30, 1)	150.50626 (30, 1)	149.40277 (30, 1)	146.14047 (30, 1)
15000.0 /	149.16501 (30, 1)	152.90140 (30, 1)	154.16759 (30, 1)	152.90152 (30, 1)	149.16527 (30, 1)
14000.0 /	150.61209 (30, 1)	154.87999 (30, 1)	156.32938 (30, 1)	154.88013 (30, 1)	150.61237 (30, 1)
13000.0 /	151.62280 (30, 1)	156.52942 (30, 1)	158.20004 (30, 1)	156.52957 (30, 1)	151.62309 (30, 1)
12000.0 /	152.05762 (30, 1)	157.73904 (30, 1)	159.67969 (30, 1)	157.73921 (30, 1)	152.05792 (30, 1)
11000.0 /	154.19086 (25, 1)	158.35493 (30, 1)	160.62903 (30, 1)	158.35510 (30, 1)	154.19101 (25, 1)
10000.0 /	160.33752 (25, 1)	163.98705 (25, 1)	165.22194 (25, 1)	163.98712 (25, 1)	160.33769 (25, 1)
9000.0 /	165.39537 (25, 1)	169.94269 (25, 1)	171.48611 (25, 1)	169.94279 (25, 1)	165.39555 (25, 1)
8000.0 /	169.27429 (25, 1)	175.02563 (25, 1)	176.98589 (25, 1)	175.02574 (25, 1)	169.27449 (25, 1)
7000.0 /	171.07545 (25, 1)	178.47052 (25, 1)	181.00595 (25, 1)	178.47064 (25, 1)	171.07570 (25, 1)
6000.0 /	169.38173 (25, 1)	179.06102 (25, 1)	182.40887 (25, 1)	179.06116 (25, 1)	169.38199 (25, 1)
5000.0 /	161.98253 (25, 1)	174.88359 (25, 1)	179.40842 (25, 1)	174.88376 (25, 1)	161.98282 (25, 1)
4000.0 /	145.53687 (25, 1)	162.99724 (25, 1)	169.27109 (25, 1)	162.99741 (25, 1)	145.53719 (25, 1)
3000.0 /	112.80209 (26, 1)	136.41112 (26, 1)	145.33185 (26, 1)	136.41130 (26, 1)	112.80239 (26, 1)
2000.0 /	112.85825 (5, 1)	139.61703 (22, 1)	150.59435 (22, 1)	139.61719 (22, 1)	112.85830 (5, 1)
1000.0 /	153.50703 (2, 1)	186.44502 (23, 1)	243.16646 (23, 1)	186.44536 (23, 1)	153.50710 (2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.02400	(30, 1)
0.0	50.0	0.32506	(30, 1)	50.0	50.0	0.02400	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.08842	(25, 1)
-50.0	100.0	2.91530	(25, 1)	0.0	100.0	9.43190	(30, 1)
50.0	100.0	2.91540	(25, 1)	100.0	100.0	0.08842	(25, 1)
-100.0	200.0	0.14810	(25, 1)	-50.0	200.0	3.64760	(25, 1)
0.0	200.0	10.61269	(25, 1)	50.0	200.0	3.64760	(25, 1)
100.0	200.0	0.14810	(25, 1)	-100.0	300.0	12.96821	(3, 1)
-50.0	300.0	36.99505	(15, 1)	0.0	300.0	101.84873	(15, 1)
50.0	300.0	36.99513	(15, 1)	100.0	300.0	12.96822	(3, 1)
-100.0	400.0	72.54109	(3, 1)	-50.0	400.0	115.92285	(15, 1)
0.0	400.0	211.47961	(15, 1)	50.0	400.0	115.92304	(15, 1)
100.0	400.0	72.54115	(3, 1)	-100.0	500.0	127.32531	(3, 1)
-50.0	500.0	175.26016	(15, 1)	0.0	500.0	271.32639	(24, 1)
50.0	500.0	175.26041	(15, 1)	100.0	500.0	127.32539	(3, 1)
-100.0	600.0	141.96736	(2, 1)	-50.0	600.0	200.48972	(15, 1)
0.0	600.0	292.33371	(24, 1)	50.0	600.0	200.48996	(15, 1)
100.0	600.0	141.96744	(2, 1)	-100.0	700.0	171.31602	(2, 1)
-50.0	700.0	202.75325	(15, 1)	0.0	700.0	287.24609	(24, 1)
50.0	700.0	202.75346	(15, 1)	100.0	700.0	171.31610	(2, 1)
-100.0	800.0	173.11925	(2, 1)	-50.0	800.0	194.22334	(15, 1)
0.0	800.0	271.81274	(24, 1)	50.0	800.0	194.22353	(15, 1)
100.0	800.0	173.11931	(2, 1)	-100.0	900.0	163.80162	(2, 1)
-50.0	900.0	186.27202	(14, 1)	0.0	900.0	254.47247	(23, 1)
50.0	900.0	186.27219	(14, 1)	100.0	900.0	163.80168	(2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 231.85069 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	88.37141 (25, 1)	88.76707 (25, 1)	88.89935 (25, 1)	88.76709 (25, 1)	88.37145 (25, 1)
24000.0 /	91.50127 (25, 1)	91.94147 (25, 1)	92.08868 (25, 1)	91.94150 (25, 1)	91.50133 (25, 1)
23000.0 /	94.83781 (25, 1)	95.32958 (25, 1)	95.49408 (25, 1)	95.32961 (25, 1)	94.83787 (25, 1)
22000.0 /	98.40068 (25, 1)	98.95251 (25, 1)	99.13716 (25, 1)	98.95255 (25, 1)	98.40074 (25, 1)
21000.0 /	102.21182 (25, 1)	102.83407 (25, 1)	103.04233 (25, 1)	102.83410 (25, 1)	102.21188 (25, 1)
20000.0 /	106.29586 (25, 1)	107.00119 (25, 1)	107.23735 (25, 1)	107.00122 (25, 1)	106.29592 (25, 1)
19000.0 /	110.56250 (25, 1)	111.36577 (25, 1)	111.63483 (25, 1)	111.36580 (25, 1)	110.56257 (25, 1)
18000.0 /	115.09079 (25, 1)	116.01089 (25, 1)	116.31924 (25, 1)	116.01093 (25, 1)	115.09087 (25, 1)
17000.0 /	119.89283 (25, 1)	120.95344 (25, 1)	121.30907 (25, 1)	120.95348 (25, 1)	119.89291 (25, 1)
16000.0 /	124.97722 (25, 1)	126.20826 (25, 1)	126.62131 (25, 1)	126.20831 (25, 1)	124.97731 (25, 1)
15000.0 /	130.34631 (25, 1)	131.78609 (25, 1)	132.26955 (25, 1)	131.78613 (25, 1)	130.34642 (25, 1)
14000.0 /	135.99213 (25, 1)	137.69022 (25, 1)	138.26097 (25, 1)	137.69028 (25, 1)	135.99223 (25, 1)
13000.0 /	141.88992 (25, 1)	143.91144 (25, 1)	144.59169 (25, 1)	143.91150 (25, 1)	141.89005 (25, 1)
12000.0 /	147.98788 (25, 1)	150.41960 (25, 1)	151.23904 (25, 1)	150.41968 (25, 1)	147.98802 (25, 1)
11000.0 /	151.72417 (30, 1)	157.15033 (25, 1)	158.14941 (25, 1)	157.15041 (25, 1)	151.72450 (30, 1)
10000.0 /	150.36769 (30, 1)	158.17435 (30, 1)	160.86568 (30, 1)	158.17453 (30, 1)	150.36804 (30, 1)
9000.0 /	147.64806 (30, 1)	156.92848 (30, 1)	160.14989 (30, 1)	156.92868 (30, 1)	147.64844 (30, 1)
8000.0 /	143.10822 (30, 1)	154.25891 (30, 1)	158.16571 (30, 1)	154.25912 (30, 1)	143.10863 (30, 1)
7000.0 /	136.13043 (30, 1)	149.68460 (30, 1)	154.49628 (30, 1)	149.68483 (30, 1)	136.13086 (30, 1)
6000.0 /	139.83154 (26, 1)	147.86909 (26, 1)	150.64970 (26, 1)	147.86922 (26, 1)	139.83176 (26, 1)
5000.0 /	141.78040 (26, 1)	153.16504 (26, 1)	157.15961 (26, 1)	153.16518 (26, 1)	141.78064 (26, 1)
4000.0 /	136.73061 (26, 1)	153.33778 (26, 1)	159.31029 (26, 1)	153.33795 (26, 1)	136.73090 (26, 1)
3000.0 /	109.48261 (25, 1)	131.91858 (25, 1)	140.37608 (25, 1)	131.91875 (25, 1)	109.48289 (25, 1)
2000.0 /	111.25722 (22, 1)	138.52063 (21, 1)	149.35577 (21, 1)	138.52078 (21, 1)	111.25745 (22, 1)
1000.0 /	124.74788 (14, 1)	177.48235 (24, 1)	231.85069 (24, 1)	177.48268 (24, 1)	124.74807 (14, 1)

2ND HIGH
1-HR
SGROUP# (

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00068	(25, 1)
0.0	50.0	0.00762	(25, 1)	50.0	50.0	0.00068	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00900	(30, 1)
-50.0	100.0	1.65766	(30, 1)	0.0	100.0	9.34817	(25, 1)
50.0	100.0	1.65767	(30, 1)	100.0	100.0	0.00900	(30, 1)
-100.0	200.0	0.06494	(3, 1)	-50.0	200.0	1.99278	(30, 1)
0.0	200.0	10.27523	(30, 1)	50.0	200.0	1.99279	(30, 1)
100.0	200.0	0.06501	(3, 1)	-100.0	300.0	6.27927	(8, 1)
-50.0	300.0	24.80095	(3, 1)	0.0	300.0	94.58611	(24, 1)
50.0	300.0	24.80096	(3, 1)	100.0	300.0	6.27928	(8, 1)
-100.0	400.0	38.68829	(8, 1)	-50.0	400.0	107.53783	(3, 1)
0.0	400.0	206.45926	(24, 1)	50.0	400.0	107.53787	(3, 1)
100.0	400.0	38.68835	(8, 1)	-100.0	500.0	84.18063	(8, 1)
-50.0	500.0	166.33978	(3, 1)	0.0	500.0	261.78360	(15, 1)
50.0	500.0	166.33983	(3, 1)	100.0	500.0	84.18073	(8, 1)
-100.0	600.0	136.90382	(3, 1)	-50.0	600.0	175.85812	(14, 1)
0.0	600.0	267.55844	(15, 1)	50.0	600.0	175.85834	(14, 1)
100.0	600.0	136.90390	(3, 1)	-100.0	700.0	128.38989	(3, 1)
-50.0	700.0	197.21503	(2, 1)	0.0	700.0	258.57883	(23, 1)
50.0	700.0	197.21507	(2, 1)	100.0	700.0	128.38995	(3, 1)
-100.0	800.0	127.96165	(8, 1)	-50.0	800.0	194.07736	(2, 1)
0.0	800.0	260.93854	(23, 1)	50.0	800.0	194.07741	(2, 1)
100.0	800.0	127.96175	(8, 1)	-100.0	900.0	123.05807	(7, 1)
-50.0	900.0	184.60580	(23, 1)	0.0	900.0	252.25761	(24, 1)
50.0	900.0	184.60619	(23, 1)	100.0	900.0	123.05817	(7, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 358.62192 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	162.29411 (30, 1)	163.93602 (30, 1)	164.48703 (30, 1)	163.93611 (30, 1)	162.29430 (30, 1)
24000.0 /	166.37422 (30, 1)	168.18312 (30, 1)	168.79048 (30, 1)	168.18323 (30, 1)	166.37444 (30, 1)
23000.0 /	170.64676 (30, 1)	172.64694 (30, 1)	173.31891 (30, 1)	172.64705 (30, 1)	170.64697 (30, 1)
22000.0 /	175.12300 (30, 1)	177.34346 (30, 1)	178.08989 (30, 1)	177.34357 (30, 1)	175.12323 (30, 1)
21000.0 /	179.81450 (30, 1)	182.29007 (30, 1)	183.12285 (30, 1)	182.29019 (30, 1)	179.81474 (30, 1)
20000.0 /	184.73264 (30, 1)	187.50552 (30, 1)	188.43907 (30, 1)	187.50565 (30, 1)	184.73289 (30, 1)
19000.0 /	189.88832 (30, 1)	193.01007 (30, 1)	194.06206 (30, 1)	193.01021 (30, 1)	189.88860 (30, 1)
18000.0 /	195.29124 (30, 1)	198.82536 (30, 1)	200.01761 (30, 1)	198.82550 (30, 1)	195.29153 (30, 1)
17000.0 /	200.94881 (30, 1)	204.97437 (30, 1)	206.33412 (30, 1)	204.97453 (30, 1)	200.94913 (30, 1)
16000.0 /	206.86443 (30, 1)	211.48097 (30, 1)	213.04266 (30, 1)	211.48116 (30, 1)	206.86476 (30, 1)
15000.0 /	213.03496 (30, 1)	218.36932 (30, 1)	220.17703 (30, 1)	218.36952 (30, 1)	213.03534 (30, 1)
14000.0 /	217.81326 (30, 1)	223.98299 (30, 1)	226.07822 (30, 1)	223.98318 (30, 1)	217.81366 (30, 1)
13000.0 /	222.37727 (30, 1)	229.57025 (30, 1)	232.01933 (30, 1)	229.57048 (30, 1)	222.37770 (30, 1)
12000.0 /	226.58046 (30, 1)	235.04187 (30, 1)	237.93207 (30, 1)	235.04211 (30, 1)	226.58093 (30, 1)
11000.0 /	230.20509 (30, 1)	240.25949 (30, 1)	243.70769 (30, 1)	240.25975 (30, 1)	230.20560 (30, 1)
10000.0 /	232.93936 (30, 1)	245.02405 (30, 1)	249.19012 (30, 1)	245.02434 (30, 1)	232.93991 (30, 1)
9000.0 /	234.33112 (30, 1)	249.04694 (30, 1)	254.15489 (30, 1)	249.04726 (30, 1)	234.33171 (30, 1)
8000.0 /	233.71556 (30, 1)	251.90617 (30, 1)	258.27917 (30, 1)	251.90652 (30, 1)	233.71622 (30, 1)
7000.0 /	230.09605 (30, 1)	252.97401 (30, 1)	261.09488 (30, 1)	252.97440 (30, 1)	230.09676 (30, 1)
6000.0 /	232.97440 (25, 1)	247.17264 (30, 1)	257.62015 (30, 1)	247.17307 (30, 1)	232.97476 (25, 1)
5000.0 /	231.94708 (25, 1)	250.40125 (25, 1)	256.87341 (25, 1)	250.40147 (25, 1)	231.94749 (25, 1)
4000.0 /	220.29990 (25, 1)	246.68840 (25, 1)	256.16928 (25, 1)	246.68866 (25, 1)	220.30037 (25, 1)
3000.0 /	183.13791 (26, 1)	221.40218 (26, 1)	251.43683 (32, 1)	221.40247 (26, 1)	183.13840 (26, 1)
2000.0 /	143.40630 (21, 1)	189.01205 (27, 1)	224.65239 (33, 1)	189.01239 (27, 1)	143.40660 (21, 1)
1000.0 /	155.52563 (2, 1)	275.03082 (23, 1)	358.62192 (23, 1)	275.03134 (23, 1)	155.52570 (2, 1)

HIGH
1-HR
SGROUP# 7

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	19.08760	(1, 1)
0.0	50.0	23803.62109	(24, 1)	50.0	50.0	19.08762	(1, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	4.25349	(1, 1)
-50.0	100.0	179.79277	(3, 1)	0.0	100.0	8924.80957	(24, 1)
50.0	100.0	179.97409	(3, 1)	100.0	100.0	4.25563	(1, 1)
-100.0	200.0	85.38639	(3, 1)	-50.0	200.0	359.67493	(8, 1)
0.0	200.0	3190.05396	(24, 1)	50.0	200.0	359.67542	(8, 1)
100.0	200.0	85.40015	(3, 1)	-100.0	300.0	155.86554	(3, 1)
-50.0	300.0	389.43430	(15, 1)	0.0	300.0	1714.13672	(24, 1)
50.0	300.0	389.43512	(15, 1)	100.0	300.0	155.86566	(3, 1)
-100.0	400.0	176.89168	(3, 1)	-50.0	400.0	384.80988	(15, 1)
0.0	400.0	1093.64294	(24, 1)	50.0	400.0	384.81052	(15, 1)
100.0	400.0	176.89183	(3, 1)	-100.0	500.0	167.99527	(3, 1)
-50.0	500.0	336.03433	(15, 1)	0.0	500.0	770.26819	(24, 1)
50.0	500.0	336.03476	(15, 1)	100.0	500.0	167.99539	(3, 1)
-100.0	600.0	150.96660	(2, 1)	-50.0	600.0	296.15723	(24, 1)
0.0	600.0	579.20898	(24, 1)	50.0	600.0	296.15808	(24, 1)
100.0	600.0	150.96666	(2, 1)	-100.0	700.0	175.59790	(2, 1)
-50.0	700.0	298.63620	(24, 1)	0.0	700.0	496.56900	(24, 1)
50.0	700.0	298.63696	(24, 1)	100.0	700.0	175.59798	(2, 1)
-100.0	800.0	175.65027	(2, 1)	-50.0	800.0	299.18204	(23, 1)
0.0	800.0	444.50595	(23, 1)	50.0	800.0	299.18268	(23, 1)
100.0	800.0	175.65034	(2, 1)	-100.0	900.0	165.95425	(2, 1)
-50.0	900.0	289.89764	(23, 1)	0.0	900.0	399.48260	(23, 1)
50.0	900.0	289.89825	(23, 1)	100.0	900.0	165.95432	(2, 1)

2ND HIGH
1-HR
SGROUP# 7

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 338.22894 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	113.93126 (31, 1)	115.08475 (31, 1)	115.47186 (31, 1)	115.08482 (31, 1)	113.93139 (31, 1)
24000.0 /	117.60611 (31, 1)	118.88582 (31, 1)	119.31550 (31, 1)	118.88589 (31, 1)	117.60625 (31, 1)
23000.0 /	121.51060 (31, 1)	122.93609 (31, 1)	123.41499 (31, 1)	122.93616 (31, 1)	121.51075 (31, 1)
22000.0 /	125.66561 (31, 1)	127.26048 (31, 1)	127.79662 (31, 1)	127.26057 (31, 1)	125.66577 (31, 1)
21000.0 /	130.09425 (31, 1)	131.88716 (31, 1)	132.49030 (31, 1)	131.88724 (31, 1)	130.09444 (31, 1)
20000.0 /	134.82224 (31, 1)	136.84822 (31, 1)	137.53032 (31, 1)	136.84831 (31, 1)	134.82242 (31, 1)
19000.0 /	139.87785 (31, 1)	142.18025 (31, 1)	142.95615 (31, 1)	142.18034 (31, 1)	139.87805 (31, 1)
18000.0 /	145.29233 (31, 1)	147.92517 (31, 1)	148.81339 (31, 1)	147.92529 (31, 1)	145.29254 (31, 1)
17000.0 /	151.09969 (31, 1)	154.13116 (31, 1)	155.15515 (31, 1)	154.13129 (31, 1)	151.09993 (31, 1)
16000.0 /	157.33649 (31, 1)	160.85358 (31, 1)	162.04338 (31, 1)	160.85371 (31, 1)	157.33675 (31, 1)
15000.0 /	164.04103 (31, 1)	168.15627 (31, 1)	169.55087 (31, 1)	168.15642 (31, 1)	164.04131 (31, 1)
14000.0 /	170.58876 (31, 1)	175.43103 (31, 1)	177.07553 (31, 1)	175.43120 (31, 1)	170.58907 (31, 1)
13000.0 /	177.41782 (31, 1)	183.17041 (31, 1)	185.12917 (31, 1)	183.17059 (31, 1)	177.41815 (31, 1)
12000.0 /	184.47374 (31, 1)	191.38194 (31, 1)	193.74176 (31, 1)	191.38214 (31, 1)	184.47412 (31, 1)
11000.0 /	191.65013 (31, 1)	200.04794 (31, 1)	202.92828 (31, 1)	200.04816 (31, 1)	191.65056 (31, 1)
10000.0 /	201.67258 (25, 1)	209.11127 (31, 1)	212.68030 (31, 1)	209.11153 (31, 1)	201.67279 (25, 1)
9000.0 /	211.34639 (25, 1)	218.44504 (31, 1)	222.94600 (31, 1)	218.44533 (31, 1)	211.34663 (25, 1)
8000.0 /	220.50110 (25, 1)	227.98962 (25, 1)	233.59651 (31, 1)	227.98978 (25, 1)	220.50137 (25, 1)
7000.0 /	228.23656 (25, 1)	238.09695 (25, 1)	244.36385 (31, 1)	238.09712 (25, 1)	228.23688 (25, 1)
6000.0 /	218.30457 (30, 1)	246.27774 (25, 1)	251.64487 (31, 1)	246.27792 (25, 1)	218.30533 (30, 1)
5000.0 /	203.22719 (31, 1)	241.57275 (31, 1)	255.89999 (31, 1)	241.57324 (31, 1)	203.22801 (31, 1)
4000.0 /	201.70209 (26, 1)	233.78517 (31, 1)	254.56859 (31, 1)	233.78574 (31, 1)	201.70251 (26, 1)
3000.0 /	181.86279 (25, 1)	219.03214 (25, 1)	250.90237 (33, 1)	219.03242 (25, 1)	181.86325 (25, 1)
2000.0 /	140.06279 (22, 1)	187.02499 (28, 1)	215.06708 (27, 1)	187.02534 (28, 1)	140.06310 (22, 1)
1000.0 /	150.22336 (14, 1)	260.63022 (22, 1)	338.22894 (22, 1)	260.63071 (22, 1)	150.22359 (14, 1)

2ND HIGH
1-HR
SGROUP# 7

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	13.06056	(4, 1)
0.0	50.0	15635.97070	(23, 1)	50.0	50.0	13.06057	(4, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	2.43481	(3, 1)
-50.0	100.0	95.35463	(8, 1)	0.0	100.0	6573.44775	(23, 1)
50.0	100.0	95.35485	(8, 1)	100.0	100.0	2.43727	(3, 1)
-100.0	200.0	39.79006	(2, 1)	-50.0	200.0	314.45505	(3, 1)
0.0	200.0	2613.00464	(23, 1)	50.0	200.0	314.45526	(3, 1)
100.0	200.0	39.79859	(2, 1)	-100.0	300.0	100.78796	(8, 1)
-50.0	300.0	357.17493	(8, 1)	0.0	300.0	1486.01074	(23, 1)
50.0	300.0	357.17523	(8, 1)	100.0	300.0	100.78812	(8, 1)
-100.0	400.0	139.83237	(8, 1)	-50.0	400.0	337.76349	(14, 1)
0.0	400.0	974.27032	(23, 1)	50.0	400.0	337.76404	(14, 1)
100.0	400.0	139.83258	(8, 1)	-100.0	500.0	149.57866	(8, 1)
-50.0	500.0	302.43661	(24, 1)	0.0	500.0	700.22479	(23, 1)
50.0	500.0	302.43756	(24, 1)	100.0	500.0	149.57884	(8, 1)
-100.0	600.0	146.25346	(3, 1)	-50.0	600.0	287.84225	(15, 1)
0.0	600.0	535.80670	(23, 1)	50.0	600.0	287.84262	(15, 1)
100.0	600.0	146.25354	(3, 1)	-100.0	700.0	151.72874	(8, 1)
-50.0	700.0	297.53149	(23, 1)	0.0	700.0	491.69421	(23, 1)
50.0	700.0	297.53220	(23, 1)	100.0	700.0	151.72888	(8, 1)
-100.0	800.0	149.79724	(14, 1)	-50.0	800.0	286.19766	(24, 1)
0.0	800.0	426.84033	(24, 1)	50.0	800.0	286.19830	(24, 1)
100.0	800.0	149.79752	(14, 1)	-100.0	900.0	152.87427	(14, 1)
-50.0	900.0	267.24332	(24, 1)	0.0	900.0	369.18591	(24, 1)
50.0	900.0	267.24387	(24, 1)	100.0	900.0	152.87453	(14, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 144.36571 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	4.26488 (30, 1)	4.30811 (30, 1)	4.32262 (30, 1)	4.30811 (30, 1)	4.26488 (30, 1)
24000.0 /	4.46967 (30, 1)	4.51837 (30, 1)	4.53473 (30, 1)	4.51838 (30, 1)	4.46968 (30, 1)
23000.0 /	4.69323 (30, 1)	4.74837 (30, 1)	4.76689 (30, 1)	4.74837 (30, 1)	4.69324 (30, 1)
22000.0 /	4.93813 (30, 1)	5.00090 (30, 1)	5.02200 (30, 1)	5.00090 (30, 1)	4.93814 (30, 1)
21000.0 /	5.20744 (30, 1)	5.27933 (30, 1)	5.30351 (30, 1)	5.27933 (30, 1)	5.20745 (30, 1)
20000.0 /	5.50483 (30, 1)	5.58771 (30, 1)	5.61561 (30, 1)	5.58771 (30, 1)	5.50484 (30, 1)
19000.0 /	5.83472 (30, 1)	5.93095 (30, 1)	5.96338 (30, 1)	5.93095 (30, 1)	5.83473 (30, 1)
18000.0 /	6.20245 (30, 1)	6.31508 (30, 1)	6.35309 (30, 1)	6.31509 (30, 1)	6.20246 (30, 1)
17000.0 /	6.61457 (30, 1)	6.74760 (30, 1)	6.79253 (30, 1)	6.74760 (30, 1)	6.61458 (30, 1)
16000.0 /	7.07918 (30, 1)	7.23786 (30, 1)	7.29154 (30, 1)	7.23786 (30, 1)	7.07920 (30, 1)
15000.0 /	7.60637 (30, 1)	7.79776 (30, 1)	7.86263 (30, 1)	7.79777 (30, 1)	7.60638 (30, 1)
14000.0 /	8.25150 (30, 1)	8.48653 (30, 1)	8.56635 (30, 1)	8.48653 (30, 1)	8.25152 (30, 1)
13000.0 /	8.99831 (30, 1)	9.29121 (30, 1)	9.39095 (30, 1)	9.29122 (30, 1)	8.99833 (30, 1)
12000.0 /	9.87028 (30, 1)	10.24156 (30, 1)	10.36841 (30, 1)	10.24158 (30, 1)	9.87030 (30, 1)
11000.0 /	10.89828 (30, 1)	11.37835 (30, 1)	11.54303 (30, 1)	11.37836 (30, 1)	10.89830 (30, 1)
10000.0 /	12.12304 (30, 1)	12.75837 (30, 1)	12.97747 (30, 1)	12.75839 (30, 1)	12.12307 (30, 1)
9000.0 /	13.59842 (30, 1)	14.46294 (30, 1)	14.76317 (30, 1)	14.46296 (30, 1)	13.59846 (30, 1)
8000.0 /	15.39529 (30, 1)	16.61193 (30, 1)	17.03849 (30, 1)	16.61196 (30, 1)	15.39533 (30, 1)
7000.0 /	17.60355 (30, 1)	19.38829 (30, 1)	20.02256 (30, 1)	19.38832 (30, 1)	17.60361 (30, 1)
6000.0 /	20.43542 (30, 1)	23.20893 (30, 1)	24.21471 (30, 1)	23.20897 (30, 1)	20.43549 (30, 1)
5000.0 /	23.87716 (30, 1)	28.48631 (30, 1)	30.21256 (30, 1)	28.48636 (30, 1)	23.87726 (30, 1)
4000.0 /	27.70182 (30, 1)	36.05574 (30, 1)	39.36681 (30, 1)	36.05583 (30, 1)	27.70195 (30, 1)
3000.0 /	30.32046 (30, 1)	47.19209 (30, 1)	54.69078 (30, 1)	47.19224 (30, 1)	30.32064 (30, 1)
2000.0 /	25.25027 (25, 1)	62.45685 (30, 1)	84.83991 (30, 1)	62.45712 (30, 1)	25.25036 (25, 1)
1000.0 /	26.08921 (16, 1)	58.44471 (16, 1)	144.36571 (30, 1)	58.44482 (16, 1)	26.08930 (16, 1)

HIGH
1-HR
SGROUP# 8

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.69716	(1, 1)
0.0	50.0	1081.26746	(20, 1)	50.0	50.0	1.69716	(1, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.36300	(1, 1)
-50.0	100.0	62.73571	(1, 1)	0.0	100.0	847.36377	(18, 1)
50.0	100.0	62.72558	(1, 1)	100.0	100.0	0.36294	(1, 1)
-100.0	200.0	15.47067	(1, 1)	-50.0	200.0	80.70963	(4, 1)
0.0	200.0	531.99152	(16, 1)	50.0	200.0	80.70974	(4, 1)
100.0	200.0	15.46960	(1, 1)	-100.0	300.0	19.45254	(1, 1)
-50.0	300.0	75.64988	(9, 1)	0.0	300.0	403.93481	(16, 1)
50.0	300.0	75.65005	(9, 1)	100.0	300.0	19.45255	(1, 1)
-100.0	400.0	21.39896	(4, 1)	-50.0	400.0	73.64938	(9, 1)
0.0	400.0	292.79071	(16, 1)	50.0	400.0	73.64951	(9, 1)
100.0	400.0	21.39900	(4, 1)	-100.0	500.0	19.96834	(4, 1)
-50.0	500.0	84.38384	(16, 1)	0.0	500.0	218.36784	(16, 1)
50.0	500.0	84.38411	(16, 1)	100.0	500.0	19.96837	(4, 1)
-100.0	600.0	20.96262	(9, 1)	-50.0	600.0	85.14885	(16, 1)
0.0	600.0	168.40643	(16, 1)	50.0	600.0	85.14910	(16, 1)
100.0	600.0	20.96268	(9, 1)	-100.0	700.0	21.43267	(9, 1)
-50.0	700.0	79.93103	(16, 1)	0.0	700.0	153.87383	(30, 1)
50.0	700.0	79.93123	(16, 1)	100.0	700.0	21.43272	(9, 1)
-100.0	800.0	21.66472	(16, 1)	-50.0	800.0	72.72780	(16, 1)
0.0	800.0	153.42918	(30, 1)	50.0	800.0	72.72796	(16, 1)
100.0	800.0	21.66482	(16, 1)	-100.0	900.0	24.58857	(16, 1)
-50.0	900.0	65.32906	(16, 1)	0.0	900.0	149.81947	(30, 1)
50.0	900.0	65.32919	(16, 1)	100.0	900.0	24.58867	(16, 1)

2ND HIGH
1-HR
SGROUP# 8

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 97.68606 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	2.16888 (31, 1)	2.19087 (31, 1)	2.19825 (31, 1)	2.19087 (31, 1)	2.16888 (31, 1)
24000.0 /	2.27406 (31, 1)	2.29884 (31, 1)	2.30716 (31, 1)	2.29884 (31, 1)	2.27406 (31, 1)
23000.0 /	2.38896 (31, 1)	2.41703 (31, 1)	2.42646 (31, 1)	2.41703 (31, 1)	2.38897 (31, 1)
22000.0 /	2.51494 (31, 1)	2.54690 (31, 1)	2.55765 (31, 1)	2.54690 (31, 1)	2.51494 (31, 1)
21000.0 /	2.65359 (31, 1)	2.69022 (31, 1)	2.70254 (31, 1)	2.69022 (31, 1)	2.65359 (31, 1)
20000.0 /	2.80683 (31, 1)	2.84909 (31, 1)	2.86332 (31, 1)	2.84909 (31, 1)	2.80684 (31, 1)
19000.0 /	2.97700 (31, 1)	3.02610 (31, 1)	3.04265 (31, 1)	3.02611 (31, 1)	2.97701 (31, 1)
18000.0 /	3.16690 (31, 1)	3.22442 (31, 1)	3.24382 (31, 1)	3.22442 (31, 1)	3.16691 (31, 1)
17000.0 /	3.38000 (31, 1)	3.44797 (31, 1)	3.47094 (31, 1)	3.44798 (31, 1)	3.38000 (31, 1)
16000.0 /	3.62055 (31, 1)	3.70171 (31, 1)	3.72916 (31, 1)	3.70171 (31, 1)	3.62056 (31, 1)
15000.0 /	3.89392 (31, 1)	3.99190 (31, 1)	4.02511 (31, 1)	3.99191 (31, 1)	3.89392 (31, 1)
14000.0 /	4.22997 (31, 1)	4.35046 (31, 1)	4.39138 (31, 1)	4.35046 (31, 1)	4.22998 (31, 1)
13000.0 /	4.62000 (31, 1)	4.77040 (31, 1)	4.82161 (31, 1)	4.77040 (31, 1)	4.62001 (31, 1)
12000.0 /	5.07678 (31, 1)	5.26778 (31, 1)	5.33302 (31, 1)	5.26778 (31, 1)	5.07679 (31, 1)
11000.0 /	5.61723 (31, 1)	5.86469 (31, 1)	5.94958 (31, 1)	5.86470 (31, 1)	5.61724 (31, 1)
10000.0 /	6.26385 (31, 1)	6.59217 (31, 1)	6.70539 (31, 1)	6.59218 (31, 1)	6.26387 (31, 1)
9000.0 /	7.04685 (31, 1)	7.49493 (31, 1)	7.65054 (31, 1)	7.49494 (31, 1)	7.04687 (31, 1)
8000.0 /	8.00670 (31, 1)	8.63958 (31, 1)	8.86147 (31, 1)	8.63959 (31, 1)	8.00673 (31, 1)
7000.0 /	9.19641 (31, 1)	10.12903 (31, 1)	10.46048 (31, 1)	10.12905 (31, 1)	9.19643 (31, 1)
6000.0 /	10.74603 (31, 1)	12.20501 (31, 1)	12.73410 (31, 1)	12.20503 (31, 1)	10.74607 (31, 1)
5000.0 /	12.66892 (31, 1)	15.11570 (31, 1)	16.03214 (31, 1)	15.11574 (31, 1)	12.66897 (31, 1)
4000.0 /	15.35491 (25, 1)	19.38506 (31, 1)	21.16651 (31, 1)	19.38511 (31, 1)	15.35495 (25, 1)
3000.0 /	20.18430 (25, 1)	25.91082 (31, 1)	30.03313 (31, 1)	25.91090 (31, 1)	20.18435 (25, 1)
2000.0 /	24.91848 (30, 1)	37.96328 (25, 1)	48.87006 (31, 1)	37.96335 (25, 1)	24.91870 (30, 1)
1000.0 /	17.47750 (9, 1)	56.47611 (25, 1)	97.68606 (31, 1)	56.47630 (25, 1)	17.47753 (9, 1)

2ND HIGH
1-HR
SGROUP# 8

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.46318	(2, 1)
0.0	50.0	1024.77454	(11, 1)	50.0	50.0	1.46319	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.21305	(2, 1)
-50.0	100.0	38.16674	(2, 1)	0.0	100.0	830.70599	(17, 1)
50.0	100.0	38.15444	(2, 1)	100.0	100.0	0.21298	(2, 1)
-100.0	200.0	8.09154	(2, 1)	-50.0	200.0	69.17734	(1, 1)
0.0	200.0	487.74850	(17, 1)	50.0	200.0	69.17739	(1, 1)
100.0	200.0	8.09091	(2, 1)	-100.0	300.0	17.01332	(4, 1)
-50.0	300.0	67.11979	(4, 1)	0.0	300.0	278.39282	(17, 1)
50.0	300.0	67.11986	(4, 1)	100.0	300.0	17.01335	(4, 1)
-100.0	400.0	15.03552	(1, 1)	-50.0	400.0	70.24625	(16, 1)
0.0	400.0	179.95871	(17, 1)	50.0	400.0	70.24652	(16, 1)
100.0	400.0	15.03554	(1, 1)	-100.0	500.0	17.93317	(9, 1)
-50.0	500.0	62.39757	(9, 1)	0.0	500.0	127.57413	(30, 1)
50.0	500.0	62.39765	(9, 1)	100.0	500.0	17.93323	(9, 1)
-100.0	600.0	17.15730	(4, 1)	-50.0	600.0	51.24902	(9, 1)
0.0	600.0	145.31990	(30, 1)	50.0	600.0	51.24908	(9, 1)
100.0	600.0	17.15732	(4, 1)	-100.0	700.0	17.05485	(16, 1)
-50.0	700.0	46.22109	(25, 1)	0.0	700.0	133.76369	(16, 1)
50.0	700.0	46.22129	(25, 1)	100.0	700.0	17.05494	(16, 1)
-100.0	800.0	20.55738	(9, 1)	-50.0	800.0	52.43574	(25, 1)
0.0	800.0	112.55545	(31, 1)	50.0	800.0	52.43595	(25, 1)
100.0	800.0	20.55742	(9, 1)	-100.0	900.0	19.10337	(9, 1)
-50.0	900.0	55.56909	(25, 1)	0.0	900.0	105.15102	(31, 1)
50.0	900.0	55.56929	(25, 1)	100.0	900.0	19.10340	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 38.41808 AND OCCURRED AT (0.0, 2000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	3.82217 (30, 1)	3.86091 (30, 1)	3.87391 (30, 1)	3.86091 (30, 1)	3.82218 (30, 1)
24000.0 /	3.99422 (30, 1)	4.03772 (30, 1)	4.05233 (30, 1)	4.03773 (30, 1)	3.99422 (30, 1)
23000.0 /	4.18112 (30, 1)	4.23022 (30, 1)	4.24672 (30, 1)	4.23023 (30, 1)	4.18112 (30, 1)
22000.0 /	4.38481 (30, 1)	4.44053 (30, 1)	4.45926 (30, 1)	4.44053 (30, 1)	4.38482 (30, 1)
21000.0 /	4.60756 (30, 1)	4.67115 (30, 1)	4.69254 (30, 1)	4.67115 (30, 1)	4.60757 (30, 1)
20000.0 /	4.85207 (30, 1)	4.92509 (30, 1)	4.94967 (30, 1)	4.92509 (30, 1)	4.85207 (30, 1)
19000.0 /	5.12151 (30, 1)	5.20595 (30, 1)	5.23441 (30, 1)	5.20596 (30, 1)	5.12152 (30, 1)
18000.0 /	5.41973 (30, 1)	5.51812 (30, 1)	5.55132 (30, 1)	5.51813 (30, 1)	5.41974 (30, 1)
17000.0 /	5.75135 (30, 1)	5.86697 (30, 1)	5.90602 (30, 1)	5.86697 (30, 1)	5.75136 (30, 1)
16000.0 /	6.12197 (30, 1)	6.25913 (30, 1)	6.30553 (30, 1)	6.25913 (30, 1)	6.12198 (30, 1)
15000.0 /	6.53848 (30, 1)	6.70292 (30, 1)	6.75865 (30, 1)	6.70292 (30, 1)	6.53849 (30, 1)
14000.0 /	7.03286 (30, 1)	7.23305 (30, 1)	7.30105 (30, 1)	7.23306 (30, 1)	7.03287 (30, 1)
13000.0 /	7.59556 (30, 1)	7.84263 (30, 1)	7.92676 (30, 1)	7.84264 (30, 1)	7.59557 (30, 1)
12000.0 /	8.23987 (30, 1)	8.54959 (30, 1)	8.65540 (30, 1)	8.54960 (30, 1)	8.23989 (30, 1)
11000.0 /	8.98228 (30, 1)	9.37759 (30, 1)	9.51320 (30, 1)	9.37760 (30, 1)	8.98230 (30, 1)
10000.0 /	9.84288 (30, 1)	10.35816 (30, 1)	10.53585 (30, 1)	10.35817 (30, 1)	9.84290 (30, 1)
9000.0 /	10.84537 (30, 1)	11.53396 (30, 1)	11.77308 (30, 1)	11.53398 (30, 1)	10.84540 (30, 1)
8000.0 /	12.01563 (30, 1)	12.96365 (30, 1)	13.29600 (30, 1)	12.96367 (30, 1)	12.01566 (30, 1)
7000.0 /	13.37552 (30, 1)	14.72879 (30, 1)	15.20965 (30, 1)	14.72881 (30, 1)	13.37556 (30, 1)
6000.0 /	14.93963 (30, 1)	16.96163 (30, 1)	17.69472 (30, 1)	16.96166 (30, 1)	14.93969 (30, 1)
5000.0 /	16.57569 (30, 1)	19.76279 (30, 1)	20.95596 (30, 1)	19.76283 (30, 1)	16.57575 (30, 1)
4000.0 /	17.87533 (30, 1)	23.23296 (30, 1)	25.35450 (30, 1)	23.23302 (30, 1)	17.87542 (30, 1)
3000.0 /	17.51343 (30, 1)	27.15039 (30, 1)	31.42279 (30, 1)	27.15047 (30, 1)	17.51353 (30, 1)
2000.0 /	15.00032 (25, 1)	28.44312 (30, 1)	38.41808 (30, 1)	28.44324 (30, 1)	15.00038 (25, 1)
1000.0 /	13.48790 (9, 1)	23.96134 (17, 1)	35.07422 (30, 1)	23.96139 (17, 1)	13.48792 (9, 1)

HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.71318	(3, 1)
0.0	50.0	798.00861	(22, 1)	50.0	50.0	0.71318	(3, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.11232	(2, 1)
-50.0	100.0	17.55355	(3, 1)	0.0	100.0	284.13705	(22, 1)
50.0	100.0	17.55308	(3, 1)	100.0	100.0	0.11236	(2, 1)
-100.0	200.0	6.92761	(1, 1)	-50.0	200.0	28.66905	(1, 1)
0.0	200.0	149.66177	(20, 1)	50.0	200.0	28.66907	(1, 1)
100.0	200.0	6.92800	(1, 1)	-100.0	300.0	13.60541	(1, 1)
-50.0	300.0	27.63082	(1, 1)	0.0	300.0	102.82302	(19, 1)
50.0	300.0	27.63083	(1, 1)	100.0	300.0	13.60543	(1, 1)
-100.0	400.0	12.70827	(4, 1)	-50.0	400.0	28.26405	(10, 1)
0.0	400.0	79.33826	(18, 1)	50.0	400.0	28.26409	(10, 1)
100.0	400.0	12.70829	(4, 1)	-100.0	500.0	14.24689	(4, 1)
-50.0	500.0	27.13588	(9, 1)	0.0	500.0	62.65234	(18, 1)
50.0	500.0	27.13592	(9, 1)	100.0	500.0	14.24691	(4, 1)
-100.0	600.0	13.58462	(4, 1)	-50.0	600.0	27.98912	(17, 1)
0.0	600.0	54.64991	(17, 1)	50.0	600.0	27.98920	(17, 1)
100.0	600.0	13.58463	(4, 1)	-100.0	700.0	13.43509	(9, 1)
-50.0	700.0	28.52324	(17, 1)	0.0	700.0	47.38340	(17, 1)
50.0	700.0	28.52332	(17, 1)	100.0	700.0	13.43512	(9, 1)
-100.0	800.0	14.10810	(9, 1)	-50.0	800.0	27.55054	(17, 1)
0.0	800.0	41.06540	(17, 1)	50.0	800.0	27.55060	(17, 1)
100.0	800.0	14.10812	(9, 1)	-100.0	900.0	14.01627	(9, 1)
-50.0	900.0	25.87963	(17, 1)	0.0	900.0	35.73804	(17, 1)
50.0	900.0	25.87968	(17, 1)	100.0	900.0	14.01629	(9, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 34.39856 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	2.02547 (31, 1)	2.04600 (31, 1)	2.05289 (31, 1)	2.04600 (31, 1)	2.02547 (31, 1)
24000.0 /	2.11985 (31, 1)	2.14294 (31, 1)	2.15069 (31, 1)	2.14294 (31, 1)	2.11985 (31, 1)
23000.0 /	2.22263 (31, 1)	2.24874 (31, 1)	2.25751 (31, 1)	2.24874 (31, 1)	2.22264 (31, 1)
22000.0 /	2.33496 (31, 1)	2.36464 (31, 1)	2.37461 (31, 1)	2.36464 (31, 1)	2.33496 (31, 1)
21000.0 /	2.45816 (31, 1)	2.49209 (31, 1)	2.50351 (31, 1)	2.49209 (31, 1)	2.45817 (31, 1)
20000.0 /	2.59383 (31, 1)	2.63287 (31, 1)	2.64601 (31, 1)	2.63287 (31, 1)	2.59383 (31, 1)
19000.0 /	2.74385 (31, 1)	2.78909 (31, 1)	2.80434 (31, 1)	2.78910 (31, 1)	2.74385 (31, 1)
18000.0 /	2.91052 (31, 1)	2.96337 (31, 1)	2.98119 (31, 1)	2.96337 (31, 1)	2.91052 (31, 1)
17000.0 /	3.09662 (31, 1)	3.15889 (31, 1)	3.17992 (31, 1)	3.15889 (31, 1)	3.09663 (31, 1)
16000.0 /	3.30558 (31, 1)	3.37965 (31, 1)	3.40471 (31, 1)	3.37965 (31, 1)	3.30558 (31, 1)
15000.0 /	3.54160 (31, 1)	3.63069 (31, 1)	3.66088 (31, 1)	3.63069 (31, 1)	3.54160 (31, 1)
14000.0 /	3.82640 (31, 1)	3.93536 (31, 1)	3.97236 (31, 1)	3.93536 (31, 1)	3.82641 (31, 1)
13000.0 /	4.15350 (31, 1)	4.28865 (31, 1)	4.33467 (31, 1)	4.28866 (31, 1)	4.15351 (31, 1)
12000.0 /	4.53194 (31, 1)	4.70235 (31, 1)	4.76057 (31, 1)	4.70235 (31, 1)	4.53195 (31, 1)
11000.0 /	4.97335 (31, 1)	5.19232 (31, 1)	5.26744 (31, 1)	5.19233 (31, 1)	4.97336 (31, 1)
10000.0 /	5.49255 (31, 1)	5.78024 (31, 1)	5.87945 (31, 1)	5.78025 (31, 1)	5.49256 (31, 1)
9000.0 /	6.10829 (31, 1)	6.49637 (31, 1)	6.63114 (31, 1)	6.49638 (31, 1)	6.10831 (31, 1)
8000.0 /	6.84360 (31, 1)	7.38399 (31, 1)	7.57344 (31, 1)	7.38400 (31, 1)	6.84362 (31, 1)
7000.0 /	7.72423 (31, 1)	8.50653 (31, 1)	8.78453 (31, 1)	8.50655 (31, 1)	7.72425 (31, 1)
6000.0 /	8.80001 (31, 1)	9.99269 (31, 1)	10.42515 (31, 1)	9.99270 (31, 1)	8.80004 (31, 1)
5000.0 /	10.02465 (31, 1)	11.95593 (31, 1)	12.67910 (31, 1)	11.95596 (31, 1)	10.02469 (31, 1)
4000.0 /	11.86311 (25, 1)	14.58942 (31, 1)	15.92540 (31, 1)	14.58946 (31, 1)	11.86313 (25, 1)
3000.0 /	14.24586 (25, 1)	18.03831 (31, 1)	20.89056 (31, 1)	18.03836 (31, 1)	14.24590 (25, 1)
2000.0 /	13.41865 (16, 1)	22.44469 (25, 1)	28.65172 (31, 1)	22.44473 (25, 1)	13.41868 (16, 1)
1000.0 /	10.93728 (16, 1)	23.83290 (16, 1)	34.39856 (31, 1)	23.83295 (16, 1)	10.93731 (16, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.59569	(2, 1)
0.0	50.0	778.54333	(23, 1)	50.0	50.0	0.59569	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.10831	(3, 1)
-50.0	100.0	15.92525	(2, 1)	0.0	100.0	275.35379	(21, 1)
50.0	100.0	15.93027	(2, 1)	100.0	100.0	0.10831	(3, 1)
-100.0	200.0	6.48775	(2, 1)	-50.0	200.0	28.51545	(2, 1)
0.0	200.0	139.40628	(19, 1)	50.0	200.0	28.51547	(2, 1)
100.0	200.0	6.48750	(2, 1)	-100.0	300.0	9.03829	(2, 1)
-50.0	300.0	27.58457	(5, 1)	0.0	300.0	99.11619	(18, 1)
50.0	300.0	27.58460	(5, 1)	100.0	300.0	9.03829	(2, 1)
-100.0	400.0	12.70024	(1, 1)	-50.0	400.0	28.06153	(4, 1)
0.0	400.0	73.93089	(19, 1)	50.0	400.0	28.06155	(4, 1)
100.0	400.0	12.70026	(1, 1)	-100.0	500.0	9.41642	(1, 1)
-50.0	500.0	25.99904	(10, 1)	0.0	500.0	62.33314	(17, 1)
50.0	500.0	25.99907	(10, 1)	100.0	500.0	9.41643	(1, 1)
-100.0	600.0	11.58592	(9, 1)	-50.0	600.0	27.43477	(9, 1)
0.0	600.0	50.07859	(18, 1)	50.0	600.0	27.43481	(9, 1)
100.0	600.0	11.58595	(9, 1)	-100.0	700.0	12.14713	(4, 1)
-50.0	700.0	25.90339	(9, 1)	0.0	700.0	40.74039	(18, 1)
50.0	700.0	25.90342	(9, 1)	100.0	700.0	12.14714	(4, 1)
-100.0	800.0	10.59358	(4, 1)	-50.0	800.0	23.67644	(9, 1)
0.0	800.0	33.72989	(18, 1)	50.0	800.0	23.67646	(9, 1)
100.0	800.0	10.59359	(4, 1)	-100.0	900.0	9.82746	(17, 1)
-50.0	900.0	23.24127	(16, 1)	0.0	900.0	33.43531	(31, 1)
50.0	900.0	23.24131	(16, 1)	100.0	900.0	9.82750	(17, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 4303.68066 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	145.80170 (30, 1)	147.25194 (30, 1)	147.73859 (30, 1)	147.25203 (30, 1)	145.80185 (30, 1)
24000.0 /	152.77008 (30, 1)	154.40207 (30, 1)	154.94995 (30, 1)	154.40216 (30, 1)	152.77025 (30, 1)
23000.0 /	160.37357 (30, 1)	162.21921 (30, 1)	162.83916 (30, 1)	162.21930 (30, 1)	160.37375 (30, 1)
22000.0 /	168.69922 (30, 1)	170.79779 (30, 1)	171.50313 (30, 1)	170.79788 (30, 1)	168.69942 (30, 1)
21000.0 /	177.85031 (30, 1)	180.25056 (30, 1)	181.05788 (30, 1)	180.25069 (30, 1)	177.85054 (30, 1)
20000.0 /	187.95018 (30, 1)	190.71326 (30, 1)	191.64331 (30, 1)	190.71338 (30, 1)	187.95044 (30, 1)
19000.0 /	199.14709 (30, 1)	202.35043 (30, 1)	203.42967 (30, 1)	202.35057 (30, 1)	199.14737 (30, 1)
18000.0 /	211.62088 (30, 1)	215.36383 (30, 1)	216.62619 (30, 1)	215.36398 (30, 1)	211.62119 (30, 1)
17000.0 /	225.59134 (30, 1)	230.00299 (30, 1)	231.49268 (30, 1)	230.00317 (30, 1)	225.59167 (30, 1)
16000.0 /	241.32968 (30, 1)	246.58017 (30, 1)	248.35568 (30, 1)	246.58038 (30, 1)	241.33005 (30, 1)
15000.0 /	258.82147 (30, 1)	265.13019 (30, 1)	267.26715 (30, 1)	265.13037 (30, 1)	258.82190 (30, 1)
14000.0 /	280.24823 (30, 1)	287.96280 (30, 1)	290.58133 (30, 1)	287.96307 (30, 1)	280.24872 (30, 1)
13000.0 /	305.38550 (30, 1)	314.96704 (30, 1)	318.22733 (30, 1)	314.96732 (30, 1)	305.38605 (30, 1)
12000.0 /	334.70117 (30, 1)	346.79907 (30, 1)	350.92822 (30, 1)	346.79938 (30, 1)	334.70181 (30, 1)
11000.0 /	369.22144 (30, 1)	384.79123 (30, 1)	390.12589 (30, 1)	384.79163 (30, 1)	369.22223 (30, 1)
10000.0 /	410.30011 (30, 1)	430.79272 (30, 1)	437.84882 (30, 1)	430.79327 (30, 1)	410.30103 (30, 1)
9000.0 /	459.73535 (30, 1)	487.43634 (30, 1)	497.03635 (30, 1)	487.43689 (30, 1)	459.73642 (30, 1)
8000.0 /	519.91156 (30, 1)	558.58124 (30, 1)	572.10059 (30, 1)	558.58197 (30, 1)	519.91290 (30, 1)
7000.0 /	593.10669 (30, 1)	649.18494 (30, 1)	669.03308 (30, 1)	649.18585 (30, 1)	593.10834 (30, 1)
6000.0 /	685.76465 (30, 1)	771.49194 (30, 1)	802.38855 (30, 1)	771.49316 (30, 1)	685.76678 (30, 1)
5000.0 /	802.01172 (30, 1)	942.05457 (30, 1)	993.97913 (30, 1)	942.05615 (30, 1)	802.01453 (30, 1)
4000.0 /	936.52637 (30, 1)	1184.72998 (30, 1)	1281.32996 (30, 1)	1184.73242 (30, 1)	936.53027 (30, 1)
3000.0 /	1052.58167 (30, 1)	1540.22241 (30, 1)	1748.75623 (30, 1)	1540.22607 (30, 1)	1052.58691 (30, 1)
2000.0 /	1073.47559 (25, 1)	2032.29004 (30, 1)	2600.36133 (30, 1)	2032.29614 (30, 1)	1073.47888 (25, 1)
1000.0 /	1054.34863 (16, 1)	2552.35620 (25, 1)	4303.68066 (30, 1)	2552.36182 (25, 1)	1054.35156 (16, 1)

HIGH
1-HR
SGROUP# 10

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	188.81361	(1, 1)	0.0	100.0	569.35815	(9, 1)
50.0	100.0	188.81374	(1, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	101.09175	(1, 1)	-50.0	200.0	558.82184	(4, 1)
0.0	200.0	1576.06042	(9, 1)	50.0	200.0	558.82227	(4, 1)
100.0	200.0	101.09189	(1, 1)	-100.0	300.0	267.54871	(1, 1)
-50.0	300.0	1512.60034	(4, 1)	0.0	300.0	4994.37939	(9, 1)
50.0	300.0	1512.60156	(4, 1)	100.0	300.0	267.54901	(1, 1)
-100.0	400.0	460.73624	(1, 1)	-50.0	400.0	2456.70020	(4, 1)
0.0	400.0	7184.41748	(16, 1)	50.0	400.0	2456.70215	(4, 1)
100.0	400.0	460.73663	(1, 1)	-100.0	500.0	760.89984	(4, 1)
-50.0	500.0	2715.25415	(9, 1)	0.0	500.0	6659.17383	(16, 1)
50.0	500.0	2715.25732	(9, 1)	100.0	500.0	760.90094	(4, 1)
-100.0	600.0	867.04974	(4, 1)	-50.0	600.0	2812.84326	(16, 1)
0.0	600.0	5772.63281	(16, 1)	50.0	600.0	2812.84814	(16, 1)
100.0	600.0	867.05066	(4, 1)	-100.0	700.0	891.82092	(9, 1)
-50.0	700.0	2865.19824	(16, 1)	0.0	700.0	5213.51563	(25, 1)
50.0	700.0	2865.20313	(16, 1)	100.0	700.0	891.82263	(9, 1)
-100.0	800.0	932.25287	(9, 1)	-50.0	800.0	2747.97339	(16, 1)
0.0	800.0	4729.45459	(25, 1)	50.0	800.0	2747.97803	(16, 1)
100.0	800.0	932.25439	(9, 1)	-100.0	900.0	959.98511	(16, 1)
-50.0	900.0	2592.04272	(25, 1)	0.0	900.0	4510.06543	(30, 1)
50.0	900.0	2592.04858	(25, 1)	100.0	900.0	959.98804	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 3882.50830 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	72.90085 (31, 1)	73.62597 (31, 1)	73.86929 (31, 1)	73.62601 (31, 1)	72.90092 (31, 1)
24000.0 /	76.38504 (31, 1)	77.20103 (31, 1)	77.47498 (31, 1)	77.20108 (31, 1)	76.38512 (31, 1)
23000.0 /	80.18678 (31, 1)	81.10960 (31, 1)	81.41958 (31, 1)	81.10965 (31, 1)	80.18687 (31, 1)
22000.0 /	84.34961 (31, 1)	85.39890 (31, 1)	85.75156 (31, 1)	85.39894 (31, 1)	84.34971 (31, 1)
21000.0 /	88.92516 (31, 1)	90.12528 (31, 1)	90.52894 (31, 1)	90.12534 (31, 1)	88.92527 (31, 1)
20000.0 /	93.97509 (31, 1)	95.35663 (31, 1)	95.82166 (31, 1)	95.35669 (31, 1)	93.97522 (31, 1)
19000.0 /	99.57355 (31, 1)	101.17522 (31, 1)	101.71484 (31, 1)	101.17529 (31, 1)	99.57368 (31, 1)
18000.0 /	105.81044 (31, 1)	107.68192 (31, 1)	108.31310 (31, 1)	107.68199 (31, 1)	105.81059 (31, 1)
17000.0 /	112.79567 (31, 1)	115.00150 (31, 1)	115.74634 (31, 1)	115.00159 (31, 1)	112.79584 (31, 1)
16000.0 /	120.66484 (31, 1)	123.29008 (31, 1)	124.17784 (31, 1)	123.29019 (31, 1)	120.66502 (31, 1)
15000.0 /	129.41074 (31, 1)	132.56509 (31, 1)	133.63358 (31, 1)	132.56519 (31, 1)	129.41095 (31, 1)
14000.0 /	140.12411 (31, 1)	143.98140 (31, 1)	145.29066 (31, 1)	143.98154 (31, 1)	140.12436 (31, 1)
13000.0 /	152.69275 (31, 1)	157.48352 (31, 1)	159.11366 (31, 1)	157.48366 (31, 1)	152.69302 (31, 1)
12000.0 /	167.35059 (31, 1)	173.39954 (31, 1)	175.46411 (31, 1)	173.39969 (31, 1)	167.35091 (31, 1)
11000.0 /	184.61072 (31, 1)	192.39561 (31, 1)	195.06294 (31, 1)	192.39581 (31, 1)	184.61111 (31, 1)
10000.0 /	205.93005 (25, 1)	215.39636 (31, 1)	218.92441 (31, 1)	215.39664 (31, 1)	205.93027 (25, 1)
9000.0 /	236.08044 (25, 1)	243.71817 (31, 1)	248.51817 (31, 1)	243.71844 (31, 1)	236.08070 (25, 1)
8000.0 /	274.65045 (25, 1)	283.87732 (25, 1)	287.02142 (25, 1)	283.87750 (25, 1)	274.65076 (25, 1)
7000.0 /	325.09607 (25, 1)	338.98563 (25, 1)	343.74628 (25, 1)	338.98584 (25, 1)	325.09647 (25, 1)
6000.0 /	393.03473 (25, 1)	415.23123 (25, 1)	422.90552 (25, 1)	415.23154 (25, 1)	393.03528 (25, 1)
5000.0 /	487.63330 (25, 1)	526.04089 (25, 1)	539.50513 (25, 1)	526.04132 (25, 1)	487.63412 (25, 1)
4000.0 /	621.43561 (25, 1)	695.35999 (25, 1)	721.90997 (25, 1)	695.36066 (25, 1)	621.43683 (25, 1)
3000.0 /	826.27612 (25, 1)	995.75201 (25, 1)	1059.66772 (25, 1)	995.75323 (25, 1)	826.27820 (25, 1)
2000.0 /	972.04761 (30, 1)	1568.67603 (25, 1)	1780.46240 (25, 1)	1568.67847 (25, 1)	972.05359 (30, 1)
1000.0 /	852.57996 (9, 1)	2379.31885 (16, 1)	3882.50830 (25, 1)	2379.32227 (16, 1)	852.58118 (9, 1)

2ND HIGH
1-HR
SGROUP# 10

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	153.23288	(4, 1)	0.0	100.0	540.79242	(4, 1)
50.0	100.0	153.23306	(4, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	55.77205	(4, 1)	-50.0	200.0	540.77515	(1, 1)
0.0	200.0	1510.12659	(16, 1)	50.0	200.0	540.77545	(1, 1)
100.0	200.0	55.77215	(4, 1)	-100.0	300.0	203.18681	(4, 1)
-50.0	300.0	1494.78638	(1, 1)	0.0	300.0	4805.32617	(16, 1)
50.0	300.0	1494.78735	(1, 1)	100.0	300.0	203.18707	(4, 1)
-100.0	400.0	446.85397	(4, 1)	-50.0	400.0	2267.81128	(9, 1)
0.0	400.0	6909.72168	(9, 1)	50.0	400.0	2267.81348	(9, 1)
100.0	400.0	446.85461	(4, 1)	-100.0	500.0	651.11304	(1, 1)
-50.0	500.0	2446.76953	(16, 1)	0.0	500.0	6016.16211	(25, 1)
50.0	500.0	2446.77393	(16, 1)	100.0	500.0	651.11365	(1, 1)
-100.0	600.0	744.93378	(9, 1)	-50.0	600.0	2531.25244	(9, 1)
0.0	600.0	5682.04395	(25, 1)	50.0	600.0	2531.25513	(9, 1)
100.0	600.0	744.93530	(9, 1)	-100.0	700.0	802.75714	(4, 1)
-50.0	700.0	2435.70313	(25, 1)	0.0	700.0	4911.27734	(16, 1)
50.0	700.0	2435.70898	(25, 1)	100.0	700.0	802.75793	(4, 1)
-100.0	800.0	812.90027	(16, 1)	-50.0	800.0	2567.41650	(25, 1)
0.0	800.0	4699.97900	(30, 1)	50.0	800.0	2567.42261	(25, 1)
100.0	800.0	812.90283	(16, 1)	-100.0	900.0	908.00000	(9, 1)
-50.0	900.0	2572.75146	(16, 1)	0.0	900.0	4279.76660	(25, 1)
50.0	900.0	2572.75513	(16, 1)	100.0	900.0	908.00134	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 415.66602 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	4.90308 (30, 1)	4.95278 (30, 1)	4.96946 (30, 1)	4.95279 (30, 1)	4.90308 (30, 1)
24000.0 /	5.14542 (30, 1)	5.20148 (30, 1)	5.22031 (30, 1)	5.20149 (30, 1)	5.14542 (30, 1)
23000.0 /	5.41054 (30, 1)	5.47410 (30, 1)	5.49546 (30, 1)	5.47411 (30, 1)	5.41054 (30, 1)
22000.0 /	5.70166 (30, 1)	5.77414 (30, 1)	5.79850 (30, 1)	5.77414 (30, 1)	5.70166 (30, 1)
21000.0 /	6.02262 (30, 1)	6.10576 (30, 1)	6.13373 (30, 1)	6.10577 (30, 1)	6.02262 (30, 1)
20000.0 /	6.37802 (30, 1)	6.47405 (30, 1)	6.50638 (30, 1)	6.47405 (30, 1)	6.37803 (30, 1)
19000.0 /	6.77345 (30, 1)	6.88517 (30, 1)	6.92283 (30, 1)	6.88518 (30, 1)	6.77346 (30, 1)
18000.0 /	7.21569 (30, 1)	7.34675 (30, 1)	7.39096 (30, 1)	7.34676 (30, 1)	7.21570 (30, 1)
17000.0 /	7.71313 (30, 1)	7.86827 (30, 1)	7.92068 (30, 1)	7.86828 (30, 1)	7.71314 (30, 1)
16000.0 /	8.27616 (30, 1)	8.46169 (30, 1)	8.52446 (30, 1)	8.46170 (30, 1)	8.27618 (30, 1)
15000.0 /	8.91787 (30, 1)	9.14231 (30, 1)	9.21837 (30, 1)	9.14231 (30, 1)	8.91789 (30, 1)
14000.0 /	9.71359 (30, 1)	9.99031 (30, 1)	10.08429 (30, 1)	9.99032 (30, 1)	9.71360 (30, 1)
13000.0 /	10.64184 (30, 1)	10.98832 (30, 1)	11.10631 (30, 1)	10.98833 (30, 1)	10.64187 (30, 1)
12000.0 /	11.73535 (30, 1)	12.17692 (30, 1)	12.32777 (30, 1)	12.17693 (30, 1)	11.73538 (30, 1)
11000.0 /	13.03809 (30, 1)	13.61259 (30, 1)	13.80967 (30, 1)	13.61261 (30, 1)	13.03812 (30, 1)
10000.0 /	14.60965 (30, 1)	15.37559 (30, 1)	15.63973 (30, 1)	15.37561 (30, 1)	14.60969 (30, 1)
9000.0 /	16.53186 (30, 1)	17.58334 (30, 1)	17.94850 (30, 1)	17.58337 (30, 1)	16.53190 (30, 1)
8000.0 /	18.91805 (30, 1)	20.41393 (30, 1)	20.93840 (30, 1)	20.41395 (30, 1)	18.91810 (30, 1)
7000.0 /	21.92449 (30, 1)	24.14891 (30, 1)	24.93946 (30, 1)	24.14895 (30, 1)	21.92456 (30, 1)
6000.0 /	25.95710 (30, 1)	29.48340 (30, 1)	30.76227 (30, 1)	29.48346 (30, 1)	25.95719 (30, 1)
5000.0 /	31.15931 (30, 1)	37.18238 (30, 1)	39.43852 (30, 1)	37.18246 (30, 1)	31.15944 (30, 1)
4000.0 /	37.60746 (30, 1)	48.97274 (30, 1)	53.47879 (30, 1)	48.97286 (30, 1)	37.60764 (30, 1)
3000.0 /	43.85513 (30, 1)	68.35310 (30, 1)	79.25098 (30, 1)	68.35332 (30, 1)	43.85540 (30, 1)
2000.0 /	41.57881 (30, 1)	104.84473 (30, 1)	142.70488 (30, 1)	104.84519 (30, 1)	41.57917 (30, 1)
1000.0 /	30.60678 (16, 1)	139.93274 (30, 1)	415.66602 (30, 1)	139.93382 (30, 1)	30.60689 (16, 1)

HIGH
1-HR
SGROUP# 11

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	4.51976	(1, 1)
0.0	50.0	69589.45313	(30, 1)	50.0	50.0	4.51977	(1, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.51125	(1, 1)
-50.0	100.0	92.70235	(1, 1)	0.0	100.0	20766.97656	(30, 1)
50.0	100.0	92.66438	(1, 1)	100.0	100.0	0.51104	(1, 1)
-100.0	200.0	18.12136	(1, 1)	-50.0	200.0	103.28004	(4, 1)
0.0	200.0	6212.86719	(30, 1)	50.0	200.0	103.28020	(4, 1)
100.0	200.0	18.11987	(1, 1)	-100.0	300.0	21.86284	(1, 1)
-50.0	300.0	97.38287	(9, 1)	0.0	300.0	3110.44336	(30, 1)
50.0	300.0	97.38309	(9, 1)	100.0	300.0	21.86286	(1, 1)
-100.0	400.0	24.36972	(4, 1)	-50.0	400.0	103.44281	(16, 1)
0.0	400.0	1905.03101	(30, 1)	50.0	400.0	103.44322	(16, 1)
100.0	400.0	24.36976	(4, 1)	-100.0	500.0	22.39601	(4, 1)
-50.0	500.0	114.14868	(16, 1)	0.0	500.0	1302.88879	(30, 1)
50.0	500.0	114.14904	(16, 1)	100.0	500.0	22.39604	(4, 1)
-100.0	600.0	24.01212	(9, 1)	-50.0	600.0	122.90998	(25, 1)
0.0	600.0	955.44098	(30, 1)	50.0	600.0	122.91063	(25, 1)
100.0	600.0	24.01219	(9, 1)	-100.0	700.0	24.28424	(9, 1)
-50.0	700.0	128.40630	(25, 1)	0.0	700.0	735.19324	(30, 1)
50.0	700.0	128.40688	(25, 1)	100.0	700.0	24.28429	(9, 1)
-100.0	800.0	26.15682	(16, 1)	-50.0	800.0	125.51039	(25, 1)
0.0	800.0	593.79565	(30, 1)	50.0	800.0	125.51089	(25, 1)
100.0	800.0	26.15694	(16, 1)	-100.0	900.0	29.20702	(16, 1)
-50.0	900.0	131.43202	(30, 1)	0.0	900.0	491.88025	(30, 1)
50.0	900.0	131.43314	(30, 1)	100.0	900.0	29.20713	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 207.83301 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	2.45154 (31, 1)	2.47639 (31, 1)	2.48473 (31, 1)	2.47639 (31, 1)	2.45154 (31, 1)
24000.0 /	2.57271 (31, 1)	2.60074 (31, 1)	2.61015 (31, 1)	2.60074 (31, 1)	2.57271 (31, 1)
23000.0 /	2.70527 (31, 1)	2.73705 (31, 1)	2.74773 (31, 1)	2.73705 (31, 1)	2.70527 (31, 1)
22000.0 /	2.85083 (31, 1)	2.88707 (31, 1)	2.89925 (31, 1)	2.88707 (31, 1)	2.85083 (31, 1)
21000.0 /	3.01131 (31, 1)	3.05288 (31, 1)	3.06687 (31, 1)	3.05288 (31, 1)	3.01131 (31, 1)
20000.0 /	3.18901 (31, 1)	3.23702 (31, 1)	3.25319 (31, 1)	3.23703 (31, 1)	3.18902 (31, 1)
19000.0 /	3.38672 (31, 1)	3.44259 (31, 1)	3.46141 (31, 1)	3.44259 (31, 1)	3.38673 (31, 1)
18000.0 /	3.60785 (31, 1)	3.67338 (31, 1)	3.69548 (31, 1)	3.67338 (31, 1)	3.60785 (31, 1)
17000.0 /	3.85656 (31, 1)	3.93414 (31, 1)	3.96034 (31, 1)	3.93414 (31, 1)	3.85657 (31, 1)
16000.0 /	4.13808 (31, 1)	4.23085 (31, 1)	4.26223 (31, 1)	4.23085 (31, 1)	4.13809 (31, 1)
15000.0 /	4.45894 (31, 1)	4.57115 (31, 1)	4.60918 (31, 1)	4.57116 (31, 1)	4.45894 (31, 1)
14000.0 /	4.85679 (31, 1)	4.99515 (31, 1)	5.04215 (31, 1)	4.99516 (31, 1)	4.85680 (31, 1)
13000.0 /	5.32092 (31, 1)	5.49416 (31, 1)	5.55315 (31, 1)	5.49417 (31, 1)	5.32093 (31, 1)
12000.0 /	5.86768 (31, 1)	6.08846 (31, 1)	6.16389 (31, 1)	6.08847 (31, 1)	5.86769 (31, 1)
11000.0 /	6.51905 (31, 1)	6.80630 (31, 1)	6.90484 (31, 1)	6.80630 (31, 1)	6.51906 (31, 1)
10000.0 /	7.30483 (31, 1)	7.68780 (31, 1)	7.81987 (31, 1)	7.68780 (31, 1)	7.30484 (31, 1)
9000.0 /	8.26593 (31, 1)	8.79167 (31, 1)	8.97425 (31, 1)	8.79168 (31, 1)	8.26595 (31, 1)
8000.0 /	9.45903 (31, 1)	10.20696 (31, 1)	10.46920 (31, 1)	10.20698 (31, 1)	9.45905 (31, 1)
7000.0 /	10.96224 (31, 1)	12.07446 (31, 1)	12.46973 (31, 1)	12.07447 (31, 1)	10.96228 (31, 1)
6000.0 /	12.97855 (31, 1)	14.74170 (31, 1)	15.38113 (31, 1)	14.74173 (31, 1)	12.97860 (31, 1)
5000.0 /	15.57965 (31, 1)	18.59119 (31, 1)	19.71926 (31, 1)	18.59123 (31, 1)	15.57972 (31, 1)
4000.0 /	18.86897 (25, 1)	24.48637 (31, 1)	26.73940 (31, 1)	24.48643 (31, 1)	18.86901 (25, 1)
3000.0 /	25.92835 (25, 1)	34.17655 (31, 1)	39.62549 (31, 1)	34.17666 (31, 1)	25.92842 (25, 1)
2000.0 /	35.52221 (25, 1)	53.49699 (25, 1)	71.35244 (31, 1)	53.49709 (25, 1)	35.52235 (25, 1)
1000.0 /	25.96979 (25, 1)	110.18616 (25, 1)	207.83301 (31, 1)	110.18653 (25, 1)	25.96996 (25, 1)

2ND HIGH
1-HR
SGROUP# 11

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	2.25988	(2, 1)
0.0	50.0	34794.72656	(31, 1)	50.0	50.0	2.25989	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.25563	(2, 1)
-50.0	100.0	46.35118	(2, 1)	0.0	100.0	10383.48828	(31, 1)
50.0	100.0	46.33219	(2, 1)	100.0	100.0	0.25552	(2, 1)
-100.0	200.0	9.06068	(2, 1)	-50.0	200.0	81.35712	(1, 1)
0.0	200.0	3106.43359	(31, 1)	50.0	200.0	81.35719	(1, 1)
100.0	200.0	9.05993	(2, 1)	-100.0	300.0	19.93756	(4, 1)
-50.0	300.0	78.94122	(4, 1)	0.0	300.0	1555.22168	(31, 1)
50.0	300.0	78.94130	(4, 1)	100.0	300.0	19.93760	(4, 1)
-100.0	400.0	16.64890	(1, 1)	-50.0	400.0	88.90455	(9, 1)
0.0	400.0	952.51550	(31, 1)	50.0	400.0	88.90470	(9, 1)
100.0	400.0	16.64891	(1, 1)	-100.0	500.0	20.89331	(9, 1)
-50.0	500.0	102.50342	(25, 1)	0.0	500.0	651.44440	(31, 1)
50.0	500.0	102.50402	(25, 1)	100.0	500.0	20.89338	(9, 1)
-100.0	600.0	19.08747	(4, 1)	-50.0	600.0	109.33000	(16, 1)
0.0	600.0	477.72049	(31, 1)	50.0	600.0	109.33032	(16, 1)
100.0	600.0	19.08749	(4, 1)	-100.0	700.0	21.04820	(16, 1)
-50.0	700.0	99.16006	(16, 1)	0.0	700.0	367.59662	(31, 1)
50.0	700.0	99.16031	(16, 1)	100.0	700.0	21.04831	(16, 1)
-100.0	800.0	23.12037	(9, 1)	-50.0	800.0	115.55087	(30, 1)
0.0	800.0	296.89783	(31, 1)	50.0	800.0	115.55192	(30, 1)
100.0	800.0	23.12042	(9, 1)	-100.0	900.0	21.37210	(9, 1)
-50.0	900.0	118.61535	(25, 1)	0.0	900.0	245.94012	(31, 1)
50.0	900.0	118.61579	(25, 1)	100.0	900.0	21.37213	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 191.35721 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	84.14262 (30, 1)	84.99221 (30, 1)	85.27733 (30, 1)	84.99226 (30, 1)	84.14272 (30, 1)
24000.0 /	84.98642 (30, 1)	85.90849 (30, 1)	86.21808 (30, 1)	85.90854 (30, 1)	84.98652 (30, 1)
23000.0 /	85.82340 (30, 1)	86.82707 (30, 1)	87.16425 (30, 1)	86.82713 (30, 1)	85.82351 (30, 1)
22000.0 /	87.06335 (25, 1)	87.74513 (30, 1)	88.11354 (30, 1)	87.74519 (30, 1)	87.06340 (25, 1)
21000.0 /	89.41792 (25, 1)	89.96130 (25, 1)	90.14318 (25, 1)	89.96133 (25, 1)	89.41797 (25, 1)
20000.0 /	91.87420 (25, 1)	92.48266 (25, 1)	92.68639 (25, 1)	92.48269 (25, 1)	91.87425 (25, 1)
19000.0 /	94.03857 (25, 1)	94.72034 (25, 1)	94.94871 (25, 1)	94.72038 (25, 1)	94.03863 (25, 1)
18000.0 /	96.20953 (25, 1)	96.97691 (25, 1)	97.23406 (25, 1)	96.97694 (25, 1)	96.20959 (25, 1)
17000.0 /	98.36594 (25, 1)	99.23388 (25, 1)	99.52490 (25, 1)	99.23391 (25, 1)	98.36600 (25, 1)
16000.0 /	100.47938 (25, 1)	101.46629 (25, 1)	101.79741 (25, 1)	101.46632 (25, 1)	100.47945 (25, 1)
15000.0 /	102.51192 (25, 1)	103.64062 (25, 1)	104.01962 (25, 1)	103.64066 (25, 1)	102.51201 (25, 1)
14000.0 /	104.41319 (25, 1)	105.71224 (25, 1)	106.14886 (25, 1)	105.71229 (25, 1)	104.41328 (25, 1)
13000.0 /	106.11600 (25, 1)	107.62160 (25, 1)	108.12821 (25, 1)	107.62164 (25, 1)	106.11608 (25, 1)
12000.0 /	107.53094 (25, 1)	109.28946 (25, 1)	109.88202 (25, 1)	109.28951 (25, 1)	107.53103 (25, 1)
11000.0 /	108.53866 (25, 1)	110.61033 (25, 1)	111.30965 (25, 1)	110.61038 (25, 1)	108.53876 (25, 1)
10000.0 /	108.98335 (25, 1)	111.44764 (25, 1)	112.28141 (25, 1)	111.44769 (25, 1)	108.98346 (25, 1)
9000.0 /	107.81854 (25, 1)	110.75933 (25, 1)	111.75733 (25, 1)	110.75939 (25, 1)	107.81866 (25, 1)
8000.0 /	105.37736 (25, 1)	108.92265 (25, 1)	110.13074 (25, 1)	108.92271 (25, 1)	105.37749 (25, 1)
7000.0 /	101.26267 (25, 1)	105.58556 (25, 1)	107.06716 (25, 1)	105.58562 (25, 1)	101.26281 (25, 1)
6000.0 /	95.25127 (26, 1)	100.66924 (26, 1)	102.54289 (26, 1)	100.66932 (26, 1)	95.25143 (26, 1)
5000.0 /	90.34921 (26, 1)	97.49881 (26, 1)	100.00563 (26, 1)	97.49890 (26, 1)	90.34937 (26, 1)
4000.0 /	81.75802 (27, 1)	91.57069 (27, 1)	95.09667 (27, 1)	91.57079 (27, 1)	81.75819 (27, 1)
3000.0 /	73.00571 (6, 1)	79.99690 (29, 1)	85.20787 (29, 1)	79.99701 (29, 1)	73.00573 (6, 1)
2000.0 /	93.15690 (6, 1)	108.25881 (23, 1)	116.72501 (23, 1)	108.25893 (23, 1)	93.15694 (6, 1)
1000.0 /	127.76685 (3, 1)	147.25610 (24, 1)	191.35721 (24, 1)	147.25636 (24, 1)	127.76689 (3, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.28868	(30, 1)
0.0	50.0	3.77265	(30, 1)	50.0	50.0	1.28869	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	1.47000	(25, 1)
-50.0	100.0	8.31225	(25, 1)	0.0	100.0	19.13261	(30, 1)
50.0	100.0	8.31235	(25, 1)	100.0	100.0	1.47002	(25, 1)
-100.0	200.0	1.71053	(25, 1)	-50.0	200.0	8.97529	(25, 1)
0.0	200.0	19.76413	(30, 1)	50.0	200.0	8.97530	(25, 1)
100.0	200.0	1.71053	(25, 1)	-100.0	300.0	2.09997	(25, 1)
-50.0	300.0	9.93780	(25, 1)	0.0	300.0	20.55105	(30, 1)
50.0	300.0	9.93781	(25, 1)	100.0	300.0	2.09997	(25, 1)
-100.0	400.0	4.29899	(3, 1)	-50.0	400.0	15.02932	(15, 1)
0.0	400.0	48.96770	(24, 1)	50.0	400.0	15.02935	(15, 1)
100.0	400.0	4.29899	(3, 1)	-100.0	500.0	35.74715	(3, 1)
-50.0	500.0	45.86356	(15, 1)	0.0	500.0	104.14300	(24, 1)
50.0	500.0	45.86362	(15, 1)	100.0	500.0	35.74717	(3, 1)
-100.0	600.0	99.81518	(3, 1)	-50.0	600.0	119.45597	(3, 1)
0.0	600.0	149.70387	(24, 1)	50.0	600.0	119.45600	(3, 1)
100.0	600.0	99.81523	(3, 1)	-100.0	700.0	138.72891	(3, 1)
-50.0	700.0	159.27415	(3, 1)	0.0	700.0	178.19670	(24, 1)
50.0	700.0	159.27419	(3, 1)	100.0	700.0	138.72897	(3, 1)
-100.0	800.0	143.71338	(3, 1)	-50.0	800.0	160.41791	(3, 1)
0.0	800.0	191.92363	(24, 1)	50.0	800.0	160.41794	(3, 1)
100.0	800.0	143.71344	(3, 1)	-100.0	900.0	136.04881	(3, 1)
-50.0	900.0	148.93584	(3, 1)	0.0	900.0	195.27443	(24, 1)
50.0	900.0	148.93587	(3, 1)	100.0	900.0	136.04887	(3, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 149.36676 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	80.57471 (25, 1)	80.93499 (25, 1)	81.05545 (25, 1)	80.93501 (25, 1)	80.57475 (25, 1)
24000.0 /	82.64563 (25, 1)	83.04266 (25, 1)	83.17544 (25, 1)	83.04269 (25, 1)	82.64568 (25, 1)
23000.0 /	84.80716 (25, 1)	85.24625 (25, 1)	85.39313 (25, 1)	85.24628 (25, 1)	84.80721 (25, 1)
22000.0 /	86.64916 (30, 1)	87.55080 (25, 1)	87.71391 (25, 1)	87.55083 (25, 1)	86.64928 (30, 1)
21000.0 /	87.45819 (30, 1)	88.65906 (30, 1)	89.06302 (30, 1)	88.65912 (30, 1)	87.45831 (30, 1)
20000.0 /	88.24390 (30, 1)	89.56462 (30, 1)	90.00926 (30, 1)	89.56468 (30, 1)	88.24402 (30, 1)
19000.0 /	88.99794 (30, 1)	90.45641 (30, 1)	90.94788 (30, 1)	90.45648 (30, 1)	88.99807 (30, 1)
18000.0 /	89.71012 (30, 1)	91.32790 (30, 1)	91.87364 (30, 1)	91.32797 (30, 1)	89.71026 (30, 1)
17000.0 /	90.36758 (30, 1)	92.17090 (30, 1)	92.77999 (30, 1)	92.17097 (30, 1)	90.36772 (30, 1)
16000.0 /	90.95415 (30, 1)	92.97522 (30, 1)	93.65887 (30, 1)	92.97530 (30, 1)	90.95430 (30, 1)
15000.0 /	91.44936 (30, 1)	93.72818 (30, 1)	94.50037 (30, 1)	93.72826 (30, 1)	91.44952 (30, 1)
14000.0 /	90.52850 (30, 1)	93.07880 (30, 1)	93.94479 (30, 1)	93.07888 (30, 1)	90.52866 (30, 1)
13000.0 /	89.29563 (30, 1)	92.16599 (30, 1)	93.14317 (30, 1)	92.16608 (30, 1)	89.29580 (30, 1)
12000.0 /	88.83338 (31, 1)	92.14490 (31, 1)	93.27597 (31, 1)	92.14499 (31, 1)	88.83356 (31, 1)
11000.0 /	90.52789 (26, 1)	92.26273 (26, 1)	93.58344 (31, 1)	92.26278 (26, 1)	90.52798 (26, 1)
10000.0 /	93.47636 (26, 1)	95.60009 (26, 1)	96.31869 (26, 1)	95.60014 (26, 1)	93.47646 (26, 1)
9000.0 /	95.62875 (26, 1)	98.25208 (26, 1)	99.14243 (26, 1)	98.25213 (26, 1)	95.62886 (26, 1)
8000.0 /	97.00013 (26, 1)	100.28679 (26, 1)	101.40692 (26, 1)	100.28685 (26, 1)	97.00025 (26, 1)
7000.0 /	97.11316 (26, 1)	101.29638 (26, 1)	102.73047 (26, 1)	101.29645 (26, 1)	97.11330 (26, 1)
6000.0 /	94.97813 (25, 1)	100.31684 (25, 1)	102.16232 (25, 1)	100.31692 (25, 1)	94.97828 (25, 1)
5000.0 /	87.97032 (27, 1)	94.97858 (27, 1)	97.43665 (27, 1)	94.97867 (27, 1)	87.97047 (27, 1)
4000.0 /	80.86475 (26, 1)	90.47271 (26, 1)	93.92269 (26, 1)	90.47280 (26, 1)	80.86491 (26, 1)
3000.0 /	71.35699 (11, 1)	79.85566 (28, 1)	85.02600 (28, 1)	79.85577 (28, 1)	71.35704 (11, 1)
2000.0 /	86.36975 (23, 1)	105.53446 (24, 1)	113.84026 (24, 1)	105.53457 (24, 1)	86.36993 (23, 1)
1000.0 /	89.40362 (15, 1)	137.96681 (3, 1)	149.36676 (23, 1)	137.96684 (3, 1)	89.40376 (15, 1)

2ND HIGH
1-HR
SGROUP# 12

*** PGV SCENARIOS - W/O DOWNWASH & W/O FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.03131	(25, 1)
0.0	50.0	0.09276	(25, 1)	50.0	50.0	0.03131	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.67993	(30, 1)
-50.0	100.0	8.30705	(30, 1)	0.0	100.0	14.80876	(25, 1)
50.0	100.0	8.30706	(30, 1)	100.0	100.0	0.67993	(30, 1)
-100.0	200.0	0.77118	(30, 1)	-50.0	200.0	8.78409	(30, 1)
0.0	200.0	15.59630	(25, 1)	50.0	200.0	8.78411	(30, 1)
100.0	200.0	0.77118	(30, 1)	-100.0	300.0	0.91691	(30, 1)
-50.0	300.0	9.44512	(30, 1)	0.0	300.0	16.68461	(25, 1)
50.0	300.0	9.44513	(30, 1)	100.0	300.0	0.91691	(30, 1)
-100.0	400.0	2.66611	(15, 1)	-50.0	400.0	12.43640	(24, 1)
0.0	400.0	26.74814	(15, 1)	50.0	400.0	12.43644	(24, 1)
100.0	400.0	2.66612	(15, 1)	-100.0	500.0	14.39150	(15, 1)
-50.0	500.0	45.67340	(3, 1)	0.0	500.0	67.49244	(15, 1)
50.0	500.0	45.67342	(3, 1)	100.0	500.0	14.39154	(15, 1)
-100.0	600.0	34.29452	(15, 1)	-50.0	600.0	79.09270	(15, 1)
0.0	600.0	126.82698	(3, 1)	50.0	600.0	79.09279	(15, 1)
100.0	600.0	34.29461	(15, 1)	-100.0	700.0	55.20840	(15, 1)
-50.0	700.0	108.36845	(24, 1)	0.0	700.0	166.77776	(3, 1)
50.0	700.0	108.36871	(24, 1)	100.0	700.0	55.20852	(15, 1)
-100.0	800.0	72.10754	(15, 1)	-50.0	800.0	129.87004	(24, 1)
0.0	800.0	166.40694	(3, 1)	50.0	800.0	129.87032	(24, 1)
100.0	800.0	72.10766	(15, 1)	-100.0	900.0	83.40747	(15, 1)
-50.0	900.0	142.41396	(24, 1)	0.0	900.0	153.49730	(3, 1)
50.0	900.0	142.41425	(24, 1)	100.0	900.0	83.40762	(15, 1)

RUN ENDED ON 12-09-91 AT 02:34:42

1 ISCST - (DATED 90346)

IBM-PC VERSION (2.04)
(C) COPYRIGHT 1990, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 6688 SOLD TO ENVIRONMENTAL MANAGMENT ASSOCIATES
RUN BEGAN ON 12-09-91 AT 02:45:22

1

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) =	1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) =	3
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) =	1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) =	0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) =	0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) =	2
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)		
WITH THE FOLLOWING TIME PERIODS:		
HOURLY (YES=1,NO=0)	ISW(7) =	1
2-HOUR (YES=1,NO=0)	ISW(8) =	0
3-HOUR (YES=1,NO=0)	ISW(9) =	0
4-HOUR (YES=1,NO=0)	ISW(10) =	0
6-HOUR (YES=1,NO=0)	ISW(11) =	0
8-HOUR (YES=1,NO=0)	ISW(12) =	0
12-HOUR (YES=1,NO=0)	ISW(13) =	0
24-HOUR (YES=1,NO=0)	ISW(14) =	0
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) =	0
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE		
SPECIFIED BY ISW(7) THROUGH ISW(14):		
DAILY TABLES (YES=1,NO=0)	ISW(16) =	0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) =	1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) =	0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) =	2
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) =	0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) =	1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) =	1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) =	0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) =	1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) =	1
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) =	1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) =	2
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) =	2
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) =	2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) =	2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) =	1
NUMBER OF INPUT SOURCES	NSOURC =	20
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP =	12
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD =	0
NUMBER OF X (RANGE) GRID VALUES	NXPNTS =	5
NUMBER OF Y (THETA) GRID VALUES	NYPNTS =	25
NUMBER OF DISCRETE RECEPTORS	NXWYPT =	50
NUMBER OF HOURS PER DAY IN METEOROLOGICAL DATA	NHOURS =	1
NUMBER OF DAYS OF METEOROLOGICAL DATA	NDAYS =	33
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =	.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR =	10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET =	7
ALLOCATED DATA STORAGE	LIMIT =	43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT =	16895 WORDS

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*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

0

*** NUMBER OF SOURCE NUMBERS REQUIRED TO DEFINE SOURCE GROUPS ***
(NSOGRP)

1, 1, 3, 1, 1, 1, 1, 1, 1, 3, 1, 1,

0

*** SOURCE NUMBERS DEFINING SOURCE GROUPS ***
(IDSOR)

1, 2, 3, 13, -16, 4, 5, 6, 7, 8, 9, 10, 17, -20,
11, 12,

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** X-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

-100.0, -50.0, 0.0, 50.0, 100.0,

*** Y-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

1000.0, 2000.0, 3000.0, 4000.0, 5000.0, 6000.0, 7000.0, 8000.0, 9000.0, 10000.0,
11000.0, 12000.0, 13000.0, 14000.0, 15000.0, 16000.0, 17000.0, 18000.0, 19000.0, 20000.0,
21000.0, 22000.0, 23000.0, 24000.0, 25000.0,

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*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

*** X,Y COORDINATES OF DISCRETE RECEPTORS ***
(METERS)

(-100.0,	50.0),	(-50.0,	50.0),	(0.0,	50.0),	(50.0,	50.0),	(100.0,	50.0),
(-100.0,	100.0),	(-50.0,	100.0),	(0.0,	100.0),	(50.0,	100.0),	(100.0,	100.0),
(-100.0,	200.0),	(-50.0,	200.0),	(0.0,	200.0),	(50.0,	200.0),	(100.0,	200.0),
(-100.0,	300.0),	(-50.0,	300.0),	(0.0,	300.0),	(50.0,	300.0),	(100.0,	300.0),
(-100.0,	400.0),	(-50.0,	400.0),	(0.0,	400.0),	(50.0,	400.0),	(100.0,	400.0),
(-100.0,	500.0),	(-50.0,	500.0),	(0.0,	500.0),	(50.0,	500.0),	(100.0,	500.0),
(-100.0,	600.0),	(-50.0,	600.0),	(0.0,	600.0),	(50.0,	600.0),	(100.0,	600.0),
(-100.0,	700.0),	(-50.0,	700.0),	(0.0,	700.0),	(50.0,	700.0),	(100.0,	700.0),
(-100.0,	800.0),	(-50.0,	800.0),	(0.0,	800.0),	(50.0,	800.0),	(100.0,	800.0),
(-100.0,	900.0),	(-50.0,	900.0),	(0.0,	900.0),	(50.0,	900.0),	(100.0,	900.0),

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*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
* FOR THE RECEPTOR GRID *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
24000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
23000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
22000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
21000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
20000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
19000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
18000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
17000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
16000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
15000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
14000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
13000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
12000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
11000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
10000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
9000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
8000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
7000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
6000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
5000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
4000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
3000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
2000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
1000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000

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*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	HGT.	- X -	- Y -	HGT.	- X -	- Y -	HGT.
-100.0	50.0	10.00000	-50.0	50.0	10.00000	0.0	50.0	10.00000
50.0	50.0	10.00000	100.0	50.0	10.00000	-100.0	100.0	10.00000
-50.0	100.0	10.00000	0.0	100.0	10.00000	50.0	100.0	10.00000
100.0	100.0	10.00000	-100.0	200.0	10.00000	-50.0	200.0	10.00000
0.0	200.0	10.00000	50.0	200.0	10.00000	100.0	200.0	10.00000
-100.0	300.0	10.00000	-50.0	300.0	10.00000	0.0	300.0	10.00000
50.0	300.0	10.00000	100.0	300.0	10.00000	-100.0	400.0	10.00000
-50.0	400.0	10.00000	0.0	400.0	10.00000	50.0	400.0	10.00000
100.0	400.0	10.00000	-100.0	500.0	10.00000	-50.0	500.0	10.00000
0.0	500.0	10.00000	50.0	500.0	10.00000	100.0	500.0	10.00000
-100.0	600.0	10.00000	-50.0	600.0	10.00000	0.0	600.0	10.00000
50.0	600.0	10.00000	100.0	600.0	10.00000	-100.0	700.0	10.00000
-50.0	700.0	10.00000	0.0	700.0	10.00000	50.0	700.0	10.00000
100.0	700.0	10.00000	-100.0	800.0	10.00000	-50.0	800.0	10.00000
0.0	800.0	10.00000	50.0	800.0	10.00000	100.0	800.0	10.00000
-100.0	900.0	10.00000	-50.0	900.0	10.00000	0.0	900.0	10.00000
50.0	900.0	10.00000	100.0	900.0	10.00000			

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	0.56447E+01	0.0	0.0	204.2	6.10	372.59	5.23	4.57	0.00	0.00	0.00
2	0	0	0	0.56447E+02	0.0	0.0	204.2	6.10	372.59	5.23	4.57	0.00	0.00	0.00
3	1	0	0	0.37673E+01	0.0	19.0	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
4	0	0	0	0.56447E+02	0.0	0.0	204.2	21.64	372.59	0.21	22.86	0.00	0.00	0.00
5	0	0	0	0.56447E+02	0.0	0.0	204.2	21.64	372.59	0.21	22.86	0.00	0.00	0.00
6	0	0	0	0.56447E+02	0.0	0.0	204.2	12.19	372.59	0.18	24.38	0.00	0.00	0.00
7	0	0	0	0.56447E+02	0.0	0.0	204.2	0.00	372.59	0.47	15.24	0.00	0.00	0.00
8	0	0	0	0.56447E+00	0.0	0.0	204.2	1.83	344.26	0.02	7.77	0.00	0.00	0.00
9	0	0	0	0.56447E+00	0.0	0.0	204.2	0.00	344.26	0.02	21.55	0.00	0.00	0.00
10	1	0	0	0.18774E+01	0.0	19.0	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
11	0	0	0	0.61739E+00	0.0	0.0	204.2	0.00	338.71	0.00	1.00	0.00	0.00	0.00
12	0	0	0	0.70559E+02	0.0	0.0	204.2	6.10	372.59	14.37	4.57	0.00	0.00	0.00
13	1	0	0	0.75221E+01	0.0	95.3	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
14	1	0	0	0.11277E+02	0.0	171.5	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
15	1	0	0	0.15057E+02	0.0	247.7	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
16	1	0	0	0.18811E+02	0.0	323.9	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
17	1	0	0	0.37673E+01	0.0	95.3	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
18	1	0	0	0.56447E+01	0.0	171.5	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
19	1	0	0	0.75221E+01	0.0	247.7	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00
20	1	0	0	0.94120E+01	0.0	323.9	204.2	19.81	9.21	17.72	0.00	0.00	0.00	0.00

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

SOURCE NUMBER	- - RECEPTOR LOCATION - - X OR RANGE (METERS)	Y (METERS) OR DIRECTION (DEGREES)	DISTANCE BETWEEN (METERS)
3	0.0	50.0	-7.16
10	0.0	50.0	-7.16
13	0.0	100.0	-33.36
14	0.0	200.0	-9.56
16	0.0	300.0	-14.25
17	0.0	100.0	-33.36
18	0.0	200.0	-9.56
20	0.0	300.0	-14.25

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MET. DATA
DAY 1

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 1 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1

MET. DATA
DAY 2

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 2 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1

MET. DATA
DAY 3

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 3 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1

MET. DATA
DAY 4

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 4 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1

MET. DATA
DAY 5

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 5 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 6

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 6 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 7

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 7 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 8

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 8 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 9

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 9 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 10

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 10 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 11

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 11 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 12

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 12 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 13

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 13 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 14

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 14 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	8.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 15

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 15 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	10.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 16

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 16 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 17

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 17 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 18

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 18 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 19

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 19 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 20

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 20 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 21

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 21 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	8.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 22

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 22 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	10.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 23

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 23 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	15.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 24

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 24 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	20.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 25

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 25 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 26

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 26 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 27

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 27 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 28

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 28 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 29

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 29 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 30

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 30 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1 MET. DAT
DAY 31

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 31 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1 MET. DAT
DAY 32

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 32 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1 MET. DAT
DAY 33

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 33 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 30.15554 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	14.52499 (30, 1)	14.67194 (30, 1)	14.72125 (30, 1)	14.67194 (30, 1)	14.52500 (30, 1)
24000.0 /	14.85970 (30, 1)	15.02126 (30, 1)	15.07550 (30, 1)	15.02127 (30, 1)	14.85971 (30, 1)
23000.0 /	15.20854 (30, 1)	15.38680 (30, 1)	15.44669 (30, 1)	15.38681 (30, 1)	15.20856 (30, 1)
22000.0 /	15.57216 (30, 1)	15.76961 (30, 1)	15.83598 (30, 1)	15.76962 (30, 1)	15.57218 (30, 1)
21000.0 /	15.95119 (30, 1)	16.17080 (30, 1)	16.24467 (30, 1)	16.17081 (30, 1)	15.95121 (30, 1)
20000.0 /	16.34618 (30, 1)	16.59154 (30, 1)	16.67414 (30, 1)	16.59155 (30, 1)	16.34620 (30, 1)
19000.0 /	16.75756 (30, 1)	17.03305 (30, 1)	17.12589 (30, 1)	17.03306 (30, 1)	16.75758 (30, 1)
18000.0 /	17.18559 (30, 1)	17.49660 (30, 1)	17.60151 (30, 1)	17.49661 (30, 1)	17.18562 (30, 1)
17000.0 /	17.63025 (30, 1)	17.98344 (30, 1)	18.10274 (30, 1)	17.98345 (30, 1)	17.63028 (30, 1)
16000.0 /	18.09106 (30, 1)	18.49480 (30, 1)	18.63137 (30, 1)	18.49481 (30, 1)	18.09109 (30, 1)
15000.0 /	18.56685 (30, 1)	19.03176 (30, 1)	19.18931 (30, 1)	19.03178 (30, 1)	18.56688 (30, 1)
14000.0 /	18.89487 (30, 1)	19.43008 (30, 1)	19.61184 (30, 1)	19.43010 (30, 1)	18.89490 (30, 1)
13000.0 /	19.19413 (30, 1)	19.81498 (30, 1)	20.02637 (30, 1)	19.81500 (30, 1)	19.19417 (30, 1)
12000.0 /	19.45144 (30, 1)	20.17784 (30, 1)	20.42595 (30, 1)	20.17786 (30, 1)	19.45148 (30, 1)
11000.0 /	19.64770 (30, 1)	20.50583 (30, 1)	20.80013 (30, 1)	20.50585 (30, 1)	19.64775 (30, 1)
10000.0 /	19.75632 (30, 1)	20.78126 (30, 1)	21.13460 (30, 1)	20.78128 (30, 1)	19.75637 (30, 1)
9000.0 /	19.73980 (30, 1)	20.97945 (30, 1)	21.40974 (30, 1)	20.97948 (30, 1)	19.73985 (30, 1)
8000.0 /	19.80893 (25, 1)	21.06553 (30, 1)	21.59847 (30, 1)	21.06556 (30, 1)	19.80896 (25, 1)
7000.0 /	20.30227 (25, 1)	21.17938 (25, 1)	21.66325 (30, 1)	21.17940 (25, 1)	20.30230 (25, 1)
6000.0 /	20.48223 (25, 1)	21.65181 (25, 1)	22.05634 (25, 1)	21.65183 (25, 1)	20.48227 (25, 1)
5000.0 /	20.10790 (25, 1)	21.70772 (25, 1)	22.26880 (25, 1)	21.70774 (25, 1)	20.10793 (25, 1)
4000.0 /	18.77903 (25, 1)	21.02846 (25, 1)	21.83663 (25, 1)	21.02848 (25, 1)	18.77907 (25, 1)
3000.0 /	15.33198 (26, 1)	18.53539 (26, 1)	20.02098 (32, 1)	18.53542 (26, 1)	15.33202 (26, 1)
2000.0 /	12.70095 (21, 1)	15.91753 (21, 1)	17.79742 (33, 1)	15.91755 (21, 1)	12.70098 (21, 1)
1000.0 /	15.55249 (2, 1)	23.12660 (23, 1)	30.15554 (23, 1)	23.12665 (23, 1)	15.55250 (2, 1)

HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.14481	(30, 1)
0.0	50.0	1.18151	(30, 1)	50.0	50.0	0.14481	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.03658	(25, 1)
-50.0	100.0	1.03510	(25, 1)	0.0	100.0	4.63948	(30, 1)
50.0	100.0	1.03512	(25, 1)	100.0	100.0	0.03658	(25, 1)
-100.0	200.0	0.05689	(25, 1)	-50.0	200.0	1.23161	(25, 1)
0.0	200.0	43.94872	(24, 1)	50.0	200.0	1.23161	(25, 1)
100.0	200.0	0.05689	(25, 1)	-100.0	300.0	1.83906	(3, 1)
-50.0	300.0	9.66424	(15, 1)	0.0	300.0	59.06094	(24, 1)
50.0	300.0	9.66426	(15, 1)	100.0	300.0	1.83906	(3, 1)
-100.0	400.0	8.36113	(3, 1)	-50.0	400.0	18.88919	(15, 1)
0.0	400.0	56.06588	(24, 1)	50.0	400.0	18.88923	(15, 1)
100.0	400.0	8.36114	(3, 1)	-100.0	500.0	13.62322	(3, 1)
-50.0	500.0	23.57119	(15, 1)	0.0	500.0	50.49635	(24, 1)
50.0	500.0	23.57122	(15, 1)	100.0	500.0	13.62323	(3, 1)
-100.0	600.0	14.67199	(2, 1)	-50.0	600.0	24.55581	(15, 1)
0.0	600.0	44.77039	(24, 1)	50.0	600.0	24.55584	(15, 1)
100.0	600.0	14.67200	(2, 1)	-100.0	700.0	17.43602	(2, 1)
-50.0	700.0	23.78065	(24, 1)	0.0	700.0	39.54218	(24, 1)
50.0	700.0	23.78071	(24, 1)	100.0	700.0	17.43603	(2, 1)
-100.0	800.0	17.54760	(2, 1)	-50.0	800.0	24.11149	(23, 1)
0.0	800.0	35.82332	(23, 1)	50.0	800.0	24.11155	(23, 1)
100.0	800.0	17.54761	(2, 1)	-100.0	900.0	16.59441	(2, 1)
-50.0	900.0	23.89038	(23, 1)	0.0	900.0	32.92123	(23, 1)
50.0	900.0	23.89043	(23, 1)	100.0	900.0	16.59442	(2, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 27.78250 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	10.32272 (31, 1)	10.42723 (31, 1)	10.46230 (31, 1)	10.42724 (31, 1)	10.32273 (31, 1)
24000.0 /	10.63426 (31, 1)	10.74998 (31, 1)	10.78883 (31, 1)	10.74998 (31, 1)	10.63428 (31, 1)
23000.0 /	10.96401 (31, 1)	11.09264 (31, 1)	11.13585 (31, 1)	11.09264 (31, 1)	10.96403 (31, 1)
22000.0 /	11.31348 (31, 1)	11.45707 (31, 1)	11.50534 (31, 1)	11.45708 (31, 1)	11.31350 (31, 1)
21000.0 /	11.68434 (31, 1)	11.84537 (31, 1)	11.89954 (31, 1)	11.84538 (31, 1)	11.68436 (31, 1)
20000.0 /	12.07840 (31, 1)	12.25990 (31, 1)	12.32101 (31, 1)	12.25991 (31, 1)	12.07842 (31, 1)
19000.0 /	12.49763 (31, 1)	12.70334 (31, 1)	12.77266 (31, 1)	12.70335 (31, 1)	12.49764 (31, 1)
18000.0 /	12.94413 (31, 1)	13.17869 (31, 1)	13.25783 (31, 1)	13.17871 (31, 1)	12.94415 (31, 1)
17000.0 /	13.42016 (31, 1)	13.68940 (31, 1)	13.78035 (31, 1)	13.68941 (31, 1)	13.42018 (31, 1)
16000.0 /	13.97145 (25, 1)	14.23934 (31, 1)	14.34466 (31, 1)	14.23935 (31, 1)	13.97146 (25, 1)
15000.0 /	14.61396 (25, 1)	14.83290 (31, 1)	14.95592 (31, 1)	14.83291 (31, 1)	14.61397 (25, 1)
14000.0 /	15.29772 (25, 1)	15.48871 (25, 1)	15.55290 (25, 1)	15.48871 (25, 1)	15.29773 (25, 1)
13000.0 /	16.02272 (25, 1)	16.25095 (25, 1)	16.32775 (25, 1)	16.25096 (25, 1)	16.02273 (25, 1)
12000.0 /	16.78681 (25, 1)	17.06259 (25, 1)	17.15553 (25, 1)	17.06260 (25, 1)	16.78683 (25, 1)
11000.0 /	17.58418 (25, 1)	17.92159 (25, 1)	18.03550 (25, 1)	17.92160 (25, 1)	17.58419 (25, 1)
10000.0 /	18.40310 (25, 1)	18.82185 (25, 1)	18.96355 (25, 1)	18.82186 (25, 1)	18.40312 (25, 1)
9000.0 /	19.14689 (25, 1)	19.67312 (25, 1)	19.85173 (25, 1)	19.67313 (25, 1)	19.14691 (25, 1)
8000.0 /	19.54436 (30, 1)	20.48167 (25, 1)	20.71096 (25, 1)	20.48169 (25, 1)	19.54441 (30, 1)
7000.0 /	19.09126 (30, 1)	20.98946 (30, 1)	21.48010 (25, 1)	20.98949 (30, 1)	19.09132 (30, 1)
6000.0 /	17.94588 (30, 1)	20.31899 (30, 1)	21.17784 (30, 1)	20.31903 (30, 1)	17.94594 (30, 1)
5000.0 /	17.33612 (26, 1)	19.69966 (31, 1)	20.86801 (31, 1)	19.69970 (31, 1)	17.33615 (26, 1)
4000.0 /	17.33794 (26, 1)	19.44169 (26, 1)	20.51247 (31, 1)	19.44171 (26, 1)	17.33798 (26, 1)
3000.0 /	15.15936 (25, 1)	18.25763 (25, 1)	19.95488 (33, 1)	18.25766 (25, 1)	15.15939 (25, 1)
2000.0 /	12.57237 (22, 1)	15.77516 (22, 1)	17.48270 (27, 1)	15.77518 (22, 1)	12.57240 (22, 1)
1000.0 /	13.75225 (14, 1)	21.40847 (22, 1)	27.78250 (22, 1)	21.40851 (22, 1)	13.75227 (14, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00472	(25, 1)
0.0	50.0	0.03900	(25, 1)	50.0	50.0	0.00472	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00714	(30, 1)
-50.0	100.0	0.91878	(30, 1)	0.0	100.0	3.15416	(25, 1)
50.0	100.0	0.91878	(30, 1)	100.0	100.0	0.00714	(30, 1)
-100.0	200.0	0.01978	(3, 1)	-50.0	200.0	1.12835	(15, 1)
0.0	200.0	11.02443	(23, 1)	50.0	200.0	1.12835	(15, 1)
100.0	200.0	0.01980	(3, 1)	-100.0	300.0	1.23997	(8, 1)
-50.0	300.0	5.50326	(24, 1)	0.0	300.0	32.26616	(23, 1)
50.0	300.0	5.50328	(24, 1)	100.0	300.0	1.23997	(8, 1)
-100.0	400.0	5.43289	(8, 1)	-50.0	400.0	13.76891	(24, 1)
0.0	400.0	40.71299	(23, 1)	50.0	400.0	13.76896	(24, 1)
100.0	400.0	5.43289	(8, 1)	-100.0	500.0	10.22450	(8, 1)
-50.0	500.0	19.82682	(24, 1)	0.0	500.0	42.51081	(23, 1)
50.0	500.0	19.82688	(24, 1)	100.0	500.0	10.22451	(8, 1)
-100.0	600.0	14.17994	(3, 1)	-50.0	600.0	22.89173	(24, 1)
0.0	600.0	41.32130	(23, 1)	50.0	600.0	22.89179	(24, 1)
100.0	600.0	14.17995	(3, 1)	-100.0	700.0	13.92646	(8, 1)
-50.0	700.0	23.61792	(15, 1)	0.0	700.0	38.71512	(23, 1)
50.0	700.0	23.61795	(15, 1)	100.0	700.0	13.92647	(8, 1)
-100.0	800.0	13.75534	(8, 1)	-50.0	800.0	23.43423	(24, 1)
0.0	800.0	34.95021	(24, 1)	50.0	800.0	23.43428	(24, 1)
100.0	800.0	13.75535	(8, 1)	-100.0	900.0	13.78919	(14, 1)
-50.0	900.0	22.42146	(24, 1)	0.0	900.0	30.97434	(24, 1)
50.0	900.0	22.42151	(24, 1)	100.0	900.0	13.78921	(14, 1)

HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 301.55539 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	145.24988 (30, 1)	146.71935 (30, 1)	147.21249 (30, 1)	146.71944 (30, 1)	145.25005 (30, 1)
24000.0 /	148.59695 (30, 1)	150.21257 (30, 1)	150.75504 (30, 1)	150.21266 (30, 1)	148.59714 (30, 1)
23000.0 /	152.08537 (30, 1)	153.86800 (30, 1)	154.46687 (30, 1)	153.86809 (30, 1)	152.08557 (30, 1)
22000.0 /	155.72163 (30, 1)	157.69609 (30, 1)	158.35982 (30, 1)	157.69620 (30, 1)	155.72183 (30, 1)
21000.0 /	159.51192 (30, 1)	161.70798 (30, 1)	162.44673 (30, 1)	161.70808 (30, 1)	159.51213 (30, 1)
20000.0 /	163.46176 (30, 1)	165.91537 (30, 1)	166.74144 (30, 1)	165.91548 (30, 1)	163.46199 (30, 1)
19000.0 /	167.57556 (30, 1)	170.33049 (30, 1)	171.25887 (30, 1)	170.33061 (30, 1)	167.57581 (30, 1)
18000.0 /	171.85594 (30, 1)	174.96596 (30, 1)	176.01512 (30, 1)	174.96608 (30, 1)	171.85620 (30, 1)
17000.0 /	176.30254 (30, 1)	179.83437 (30, 1)	181.02734 (30, 1)	179.83450 (30, 1)	176.30281 (30, 1)
16000.0 /	180.91061 (30, 1)	184.94797 (30, 1)	186.31372 (30, 1)	184.94812 (30, 1)	180.91092 (30, 1)
15000.0 /	185.66852 (30, 1)	190.31763 (30, 1)	191.89311 (30, 1)	190.31779 (30, 1)	185.66884 (30, 1)
14000.0 /	188.94867 (30, 1)	194.30077 (30, 1)	196.11835 (30, 1)	194.30095 (30, 1)	188.94901 (30, 1)
13000.0 /	191.94133 (30, 1)	198.14984 (30, 1)	200.26372 (30, 1)	198.15002 (30, 1)	191.94170 (30, 1)
12000.0 /	194.51443 (30, 1)	201.77838 (30, 1)	204.25955 (30, 1)	201.77858 (30, 1)	194.51485 (30, 1)
11000.0 /	196.47701 (30, 1)	205.05829 (30, 1)	208.00130 (30, 1)	205.05852 (30, 1)	196.47743 (30, 1)
10000.0 /	197.56319 (30, 1)	207.81258 (30, 1)	211.34596 (30, 1)	207.81282 (30, 1)	197.56364 (30, 1)
9000.0 /	197.39803 (30, 1)	209.79446 (30, 1)	214.09735 (30, 1)	209.79474 (30, 1)	197.39853 (30, 1)
8000.0 /	198.08934 (25, 1)	210.65533 (30, 1)	215.98473 (30, 1)	210.65562 (30, 1)	198.08958 (25, 1)
7000.0 /	203.02275 (25, 1)	211.79384 (25, 1)	216.63254 (30, 1)	211.79398 (25, 1)	203.02303 (25, 1)
6000.0 /	204.82236 (25, 1)	216.51813 (25, 1)	220.56335 (25, 1)	216.51831 (25, 1)	204.82266 (25, 1)
5000.0 /	201.07899 (25, 1)	217.07721 (25, 1)	222.68803 (25, 1)	217.07741 (25, 1)	201.07935 (25, 1)
4000.0 /	187.79025 (25, 1)	210.28456 (25, 1)	218.36632 (25, 1)	210.28479 (25, 1)	187.79065 (25, 1)
3000.0 /	153.31984 (26, 1)	185.35393 (26, 1)	200.20982 (32, 1)	185.35417 (26, 1)	153.32024 (26, 1)
2000.0 /	127.00954 (21, 1)	159.17531 (21, 1)	177.97420 (33, 1)	159.17548 (21, 1)	127.00981 (21, 1)
1000.0 /	155.52492 (2, 1)	231.26602 (23, 1)	301.55539 (23, 1)	231.26645 (23, 1)	155.52496 (2, 1)

HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.44811	(30, 1)
0.0	50.0	11.81506	(30, 1)	50.0	50.0	1.44811	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.36582	(25, 1)
-50.0	100.0	10.35096	(25, 1)	0.0	100.0	46.39475	(30, 1)
50.0	100.0	10.35119	(25, 1)	100.0	100.0	0.36583	(25, 1)
-100.0	200.0	0.56888	(25, 1)	-50.0	200.0	12.31611	(25, 1)
0.0	200.0	439.48718	(24, 1)	50.0	200.0	12.31613	(25, 1)
100.0	200.0	0.56888	(25, 1)	-100.0	300.0	18.39063	(3, 1)
-50.0	300.0	96.64241	(15, 1)	0.0	300.0	590.60931	(24, 1)
50.0	300.0	96.64262	(15, 1)	100.0	300.0	18.39065	(3, 1)
-100.0	400.0	83.61131	(3, 1)	-50.0	400.0	188.89192	(15, 1)
0.0	400.0	560.65881	(24, 1)	50.0	400.0	188.89224	(15, 1)
100.0	400.0	83.61137	(3, 1)	-100.0	500.0	136.23221	(3, 1)
-50.0	500.0	235.71187	(15, 1)	0.0	500.0	504.96350	(24, 1)
50.0	500.0	235.71217	(15, 1)	100.0	500.0	136.23230	(3, 1)
-100.0	600.0	146.71991	(2, 1)	-50.0	600.0	245.55807	(15, 1)
0.0	600.0	447.70386	(24, 1)	50.0	600.0	245.55836	(15, 1)
100.0	600.0	146.71999	(2, 1)	-100.0	700.0	174.36017	(2, 1)
-50.0	700.0	237.80655	(24, 1)	0.0	700.0	395.42175	(24, 1)
50.0	700.0	237.80714	(24, 1)	100.0	700.0	174.36026	(2, 1)
-100.0	800.0	175.47600	(2, 1)	-50.0	800.0	241.11493	(23, 1)
0.0	800.0	358.23318	(23, 1)	50.0	800.0	241.11545	(23, 1)
100.0	800.0	175.47607	(2, 1)	-100.0	900.0	165.94411	(2, 1)
-50.0	900.0	238.90382	(23, 1)	0.0	900.0	329.21228	(23, 1)
50.0	900.0	238.90431	(23, 1)	100.0	900.0	165.94417	(2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 277.82501 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	103.22718 (31, 1)	104.27230 (31, 1)	104.62304 (31, 1)	104.27236 (31, 1)	103.22729 (31, 1)
24000.0 /	106.34264 (31, 1)	107.49978 (31, 1)	107.88831 (31, 1)	107.49985 (31, 1)	106.34277 (31, 1)
23000.0 /	109.64014 (31, 1)	110.92638 (31, 1)	111.35849 (31, 1)	110.92645 (31, 1)	109.64027 (31, 1)
22000.0 /	113.13484 (31, 1)	114.57068 (31, 1)	115.05336 (31, 1)	114.57076 (31, 1)	113.13499 (31, 1)
21000.0 /	116.84341 (31, 1)	118.45368 (31, 1)	118.99538 (31, 1)	118.45376 (31, 1)	116.84356 (31, 1)
20000.0 /	120.78399 (31, 1)	122.59902 (31, 1)	123.21011 (31, 1)	122.59911 (31, 1)	120.78416 (31, 1)
19000.0 /	124.97625 (31, 1)	127.03336 (31, 1)	127.72659 (31, 1)	127.03345 (31, 1)	124.97643 (31, 1)
18000.0 /	129.44133 (31, 1)	131.78694 (31, 1)	132.57826 (31, 1)	131.78705 (31, 1)	129.44153 (31, 1)
17000.0 /	134.20155 (31, 1)	136.89401 (31, 1)	137.80348 (31, 1)	136.89412 (31, 1)	134.20177 (31, 1)
16000.0 /	139.71446 (25, 1)	142.39337 (31, 1)	143.44662 (31, 1)	142.39349 (31, 1)	139.71457 (25, 1)
15000.0 /	146.13959 (25, 1)	148.32899 (31, 1)	149.55917 (31, 1)	148.32912 (31, 1)	146.13969 (25, 1)
14000.0 /	152.97719 (25, 1)	154.88705 (25, 1)	155.52899 (25, 1)	154.88712 (25, 1)	152.97731 (25, 1)
13000.0 /	160.22719 (25, 1)	162.50954 (25, 1)	163.27754 (25, 1)	162.50961 (25, 1)	160.22733 (25, 1)
12000.0 /	167.86813 (25, 1)	170.62593 (25, 1)	171.55525 (25, 1)	170.62601 (25, 1)	167.86829 (25, 1)
11000.0 /	175.84174 (25, 1)	179.21591 (25, 1)	180.35500 (25, 1)	179.21600 (25, 1)	175.84190 (25, 1)
10000.0 /	184.03096 (25, 1)	188.21854 (25, 1)	189.63548 (25, 1)	188.21863 (25, 1)	184.03116 (25, 1)
9000.0 /	191.46889 (25, 1)	196.73119 (25, 1)	198.51726 (25, 1)	196.73129 (25, 1)	191.46910 (25, 1)
8000.0 /	195.44354 (30, 1)	204.81673 (25, 1)	207.10963 (25, 1)	204.81686 (25, 1)	195.44409 (30, 1)
7000.0 /	190.91257 (30, 1)	209.89458 (30, 1)	214.80099 (25, 1)	209.89490 (30, 1)	190.91316 (30, 1)
6000.0 /	179.45879 (30, 1)	203.18994 (30, 1)	211.77837 (30, 1)	203.19029 (30, 1)	179.45941 (30, 1)
5000.0 /	173.36122 (26, 1)	196.99658 (31, 1)	208.68008 (31, 1)	196.99698 (31, 1)	173.36153 (26, 1)
4000.0 /	173.37939 (26, 1)	194.41685 (26, 1)	205.12469 (31, 1)	194.41705 (26, 1)	173.37976 (26, 1)
3000.0 /	151.59354 (25, 1)	182.57632 (25, 1)	199.54880 (33, 1)	182.57655 (25, 1)	151.59393 (25, 1)
2000.0 /	125.72368 (22, 1)	157.75162 (22, 1)	174.82700 (27, 1)	157.75179 (22, 1)	125.72395 (22, 1)
1000.0 /	137.52249 (14, 1)	214.08473 (22, 1)	277.82501 (22, 1)	214.08513 (22, 1)	137.52271 (14, 1)

2ND HIGH
1-HR
SGROUP# 2

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 2,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.04718	(25, 1)
0.0	50.0	0.39003	(25, 1)	50.0	50.0	0.04718	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.07136	(30, 1)
-50.0	100.0	9.18779	(30, 1)	0.0	100.0	31.54157	(25, 1)
50.0	100.0	9.18780	(30, 1)	100.0	100.0	0.07136	(30, 1)
-100.0	200.0	0.19780	(3, 1)	-50.0	200.0	11.28348	(15, 1)
0.0	200.0	110.24426	(23, 1)	50.0	200.0	11.28351	(15, 1)
100.0	200.0	0.19797	(3, 1)	-100.0	300.0	12.39972	(8, 1)
-50.0	300.0	55.03257	(24, 1)	0.0	300.0	322.66162	(23, 1)
50.0	300.0	55.03285	(24, 1)	100.0	300.0	12.39974	(8, 1)
-100.0	400.0	54.32887	(8, 1)	-50.0	400.0	137.68906	(24, 1)
0.0	400.0	407.12994	(23, 1)	50.0	400.0	137.68959	(24, 1)
100.0	400.0	54.32895	(8, 1)	-100.0	500.0	102.24500	(8, 1)
-50.0	500.0	198.26816	(24, 1)	0.0	500.0	425.10806	(23, 1)
50.0	500.0	198.26877	(24, 1)	100.0	500.0	102.24512	(8, 1)
-100.0	600.0	141.79939	(3, 1)	-50.0	600.0	228.91725	(24, 1)
0.0	600.0	413.21301	(23, 1)	50.0	600.0	228.91791	(24, 1)
100.0	600.0	141.79948	(3, 1)	-100.0	700.0	139.26460	(8, 1)
-50.0	700.0	236.17921	(15, 1)	0.0	700.0	387.15115	(23, 1)
50.0	700.0	236.17947	(15, 1)	100.0	700.0	139.26472	(8, 1)
-100.0	800.0	137.55338	(8, 1)	-50.0	800.0	234.34229	(24, 1)
0.0	800.0	349.50211	(24, 1)	50.0	800.0	234.34280	(24, 1)
100.0	800.0	137.55350	(8, 1)	-100.0	900.0	137.89189	(14, 1)
-50.0	900.0	224.21463	(24, 1)	0.0	900.0	309.74335	(24, 1)
50.0	900.0	224.21509	(24, 1)	100.0	900.0	137.89212	(14, 1)

HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 9203.99805 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	288.40100 (30, 1)	291.26962 (30, 1)	292.23224 (30, 1)	291.26981 (30, 1)	288.40131 (30, 1)
24000.0 /	302.10516 (30, 1)	305.33243 (30, 1)	306.41589 (30, 1)	305.33261 (30, 1)	302.10550 (30, 1)
23000.0 /	317.05225 (30, 1)	320.70102 (30, 1)	321.92664 (30, 1)	320.70120 (30, 1)	317.05264 (30, 1)
22000.0 /	333.41193 (30, 1)	337.55948 (30, 1)	338.95349 (30, 1)	337.55969 (30, 1)	333.41232 (30, 1)
21000.0 /	351.38525 (30, 1)	356.12753 (30, 1)	357.72253 (30, 1)	356.12778 (30, 1)	351.38571 (30, 1)
20000.0 /	371.21222 (30, 1)	376.66943 (30, 1)	378.50635 (30, 1)	376.66968 (30, 1)	371.21271 (30, 1)
19000.0 /	393.18103 (30, 1)	399.50543 (30, 1)	401.63620 (30, 1)	399.50574 (30, 1)	393.18158 (30, 1)
18000.0 /	417.64099 (30, 1)	425.02783 (30, 1)	427.51913 (30, 1)	425.02814 (30, 1)	417.64163 (30, 1)
17000.0 /	445.01874 (30, 1)	453.72144 (30, 1)	456.66010 (30, 1)	453.72180 (30, 1)	445.01941 (30, 1)
16000.0 /	475.83990 (30, 1)	486.19250 (30, 1)	489.69336 (30, 1)	486.19287 (30, 1)	475.84070 (30, 1)
15000.0 /	510.08417 (30, 1)	522.51727 (30, 1)	526.72876 (30, 1)	522.51770 (30, 1)	510.08502 (30, 1)
14000.0 /	551.93475 (30, 1)	567.12817 (30, 1)	572.28522 (30, 1)	567.12866 (30, 1)	551.93573 (30, 1)
13000.0 /	600.96027 (30, 1)	619.81543 (30, 1)	626.23126 (30, 1)	619.81598 (30, 1)	600.96136 (30, 1)
12000.0 /	658.05902 (30, 1)	681.84467 (30, 1)	689.96295 (30, 1)	681.84534 (30, 1)	658.06030 (30, 1)
11000.0 /	725.19446 (30, 1)	755.77515 (30, 1)	766.25299 (30, 1)	755.77594 (30, 1)	725.19592 (30, 1)
10000.0 /	804.94971 (30, 1)	845.15302 (30, 1)	858.99597 (30, 1)	845.15393 (30, 1)	804.95154 (30, 1)
9000.0 /	900.74438 (30, 1)	955.01764 (30, 1)	973.82654 (30, 1)	955.01880 (30, 1)	900.74658 (30, 1)
8000.0 /	1017.09497 (30, 1)	1092.74341 (30, 1)	1119.19080 (30, 1)	1092.74475 (30, 1)	1017.09766 (30, 1)
7000.0 /	1158.30518 (30, 1)	1267.82202 (30, 1)	1306.58411 (30, 1)	1267.82385 (30, 1)	1158.30847 (30, 1)
6000.0 /	1336.41248 (30, 1)	1503.47510 (30, 1)	1563.68518 (30, 1)	1503.47754 (30, 1)	1336.41675 (30, 1)
5000.0 /	1558.96204 (30, 1)	1831.17505 (30, 1)	1932.10498 (30, 1)	1831.17834 (30, 1)	1558.96765 (30, 1)
4000.0 /	1815.72815 (30, 1)	2296.93335 (30, 1)	2484.21631 (30, 1)	2296.93823 (30, 1)	1815.73560 (30, 1)
3000.0 /	2038.13354 (30, 1)	2982.35107 (30, 1)	3386.13428 (30, 1)	2982.35840 (30, 1)	2038.14355 (30, 1)
2000.0 /	2084.99121 (25, 1)	3964.06055 (30, 1)	5072.26172 (30, 1)	3964.07275 (30, 1)	2084.99756 (25, 1)
1000.0 /	2044.53784 (16, 1)	4988.44873 (25, 1)	9203.99805 (30, 1)	4988.45996 (25, 1)	2044.54370 (16, 1)

HIGH
1-HR
SGROUP# 3

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	372.58810	(1, 1)	0.0	100.0	1467.12903	(16, 1)
50.0	100.0	372.58832	(1, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	196.96068	(1, 1)	-50.0	200.0	1105.57886	(4, 1)
0.0	200.0	3864.73779	(16, 1)	50.0	200.0	1105.57971	(4, 1)
100.0	200.0	196.96094	(1, 1)	-100.0	300.0	522.51056	(1, 1)
-50.0	300.0	3107.57178	(4, 1)	0.0	300.0	13287.92188	(16, 1)
50.0	300.0	3107.57422	(4, 1)	100.0	300.0	522.51111	(1, 1)
-100.0	400.0	903.96857	(1, 1)	-50.0	400.0	4900.97412	(4, 1)
0.0	400.0	17772.42969	(16, 1)	50.0	400.0	4900.97754	(4, 1)
100.0	400.0	903.96936	(1, 1)	-100.0	500.0	1485.00269	(4, 1)
-50.0	500.0	5301.56494	(9, 1)	0.0	500.0	14820.29883	(30, 1)
50.0	500.0	5301.57129	(9, 1)	100.0	500.0	1485.00488	(4, 1)
-100.0	600.0	1700.76123	(4, 1)	-50.0	600.0	5586.18994	(16, 1)
0.0	600.0	13212.89551	(30, 1)	50.0	600.0	5586.19922	(16, 1)
100.0	600.0	1700.76318	(4, 1)	-100.0	700.0	1739.58862	(9, 1)
-50.0	700.0	5590.37500	(16, 1)	0.0	700.0	11921.55371	(30, 1)
50.0	700.0	5590.38428	(16, 1)	100.0	700.0	1739.59180	(9, 1)
-100.0	800.0	1825.69824	(9, 1)	-50.0	800.0	5330.01465	(16, 1)
0.0	800.0	10859.65430	(30, 1)	50.0	800.0	5330.02344	(16, 1)
100.0	800.0	1825.70129	(9, 1)	-100.0	900.0	1860.08276	(16, 1)
-50.0	900.0	5102.91699	(25, 1)	0.0	900.0	9966.87598	(30, 1)
50.0	900.0	5102.92871	(25, 1)	100.0	900.0	1860.08838	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 7589.65479 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	144.20050 (31, 1)	145.63481 (31, 1)	146.11612 (31, 1)	145.63490 (31, 1)	144.20065 (31, 1)
24000.0 /	151.05258 (31, 1)	152.66621 (31, 1)	153.20795 (31, 1)	152.66631 (31, 1)	151.05275 (31, 1)
23000.0 /	158.52612 (31, 1)	160.35051 (31, 1)	160.96332 (31, 1)	160.35060 (31, 1)	158.52632 (31, 1)
22000.0 /	166.70596 (31, 1)	168.77974 (31, 1)	169.47675 (31, 1)	168.77985 (31, 1)	166.70616 (31, 1)
21000.0 /	175.69263 (31, 1)	178.06377 (31, 1)	178.86127 (31, 1)	178.06389 (31, 1)	175.69286 (31, 1)
20000.0 /	185.60611 (31, 1)	188.33472 (31, 1)	189.25317 (31, 1)	188.33484 (31, 1)	185.60635 (31, 1)
19000.0 /	196.59052 (31, 1)	199.75272 (31, 1)	200.81810 (31, 1)	199.75287 (31, 1)	196.59079 (31, 1)
18000.0 /	208.82050 (31, 1)	212.51392 (31, 1)	213.75957 (31, 1)	212.51407 (31, 1)	208.82082 (31, 1)
17000.0 /	222.50937 (31, 1)	226.86072 (31, 1)	228.33005 (31, 1)	226.86090 (31, 1)	222.50970 (31, 1)
16000.0 /	237.91995 (31, 1)	243.09625 (31, 1)	244.84668 (31, 1)	243.09644 (31, 1)	237.92035 (31, 1)
15000.0 /	255.04208 (31, 1)	261.25864 (31, 1)	263.36438 (31, 1)	261.25885 (31, 1)	255.04251 (31, 1)
14000.0 /	275.96738 (31, 1)	283.56409 (31, 1)	286.14261 (31, 1)	283.56433 (31, 1)	275.96786 (31, 1)
13000.0 /	300.48013 (31, 1)	309.90771 (31, 1)	313.11563 (31, 1)	309.90799 (31, 1)	300.48068 (31, 1)
12000.0 /	329.02951 (31, 1)	340.92233 (31, 1)	344.98148 (31, 1)	340.92267 (31, 1)	329.03015 (31, 1)
11000.0 /	362.59723 (31, 1)	377.88757 (31, 1)	383.12650 (31, 1)	377.88797 (31, 1)	362.59796 (31, 1)
10000.0 /	408.66602 (25, 1)	422.57651 (31, 1)	429.49799 (31, 1)	422.57697 (31, 1)	408.66644 (25, 1)
9000.0 /	468.13074 (25, 1)	480.86328 (25, 1)	486.91327 (31, 1)	480.86356 (25, 1)	468.13129 (25, 1)
8000.0 /	544.08136 (25, 1)	562.35968 (25, 1)	568.58807 (25, 1)	562.35999 (25, 1)	544.08203 (25, 1)
7000.0 /	643.22308 (25, 1)	670.70422 (25, 1)	680.12335 (25, 1)	670.70465 (25, 1)	643.22388 (25, 1)
6000.0 /	776.40619 (25, 1)	820.25305 (25, 1)	835.41284 (25, 1)	820.25366 (25, 1)	776.40735 (25, 1)
5000.0 /	961.21765 (25, 1)	1036.92517 (25, 1)	1063.46533 (25, 1)	1036.92590 (25, 1)	961.21936 (25, 1)
4000.0 /	1221.44043 (25, 1)	1366.73682 (25, 1)	1418.92017 (25, 1)	1366.73816 (25, 1)	1221.44287 (25, 1)
3000.0 /	1616.23682 (25, 1)	1947.72485 (25, 1)	2072.74072 (25, 1)	1947.72729 (25, 1)	1616.24084 (25, 1)
2000.0 /	1895.83997 (30, 1)	3046.73608 (25, 1)	3458.04736 (25, 1)	3046.74072 (25, 1)	1895.85156 (30, 1)
1000.0 /	1680.24988 (9, 1)	4613.12354 (16, 1)	7589.65479 (25, 1)	4613.13037 (16, 1)	1680.25244 (9, 1)

2ND HIGH
1-HR
SGROUP#

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 3, 13, -16,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	320.97852	(4, 1)	0.0	100.0	1365.04919	(25, 1)
50.0	100.0	320.97888	(4, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	109.36665	(4, 1)	-50.0	200.0	1050.54175	(1, 1)
0.0	200.0	3699.05762	(25, 1)	50.0	200.0	1050.54224	(1, 1)
100.0	200.0	109.36684	(4, 1)	-100.0	300.0	395.32202	(4, 1)
-50.0	300.0	2998.97827	(1, 1)	0.0	300.0	12574.69922	(25, 1)
50.0	300.0	2998.97974	(1, 1)	100.0	300.0	395.32248	(4, 1)
-100.0	400.0	870.07886	(4, 1)	-50.0	400.0	4647.23779	(9, 1)
0.0	400.0	17247.35742	(25, 1)	50.0	400.0	4647.24316	(9, 1)
100.0	400.0	870.08008	(4, 1)	-100.0	500.0	1281.43115	(1, 1)
-50.0	500.0	5079.49219	(16, 1)	0.0	500.0	14384.99414	(25, 1)
50.0	500.0	5079.50098	(16, 1)	100.0	500.0	1281.43225	(1, 1)
-100.0	600.0	1448.34033	(9, 1)	-50.0	600.0	4915.14502	(9, 1)
0.0	600.0	12306.60840	(25, 1)	50.0	600.0	4915.14990	(9, 1)
100.0	600.0	1448.34326	(9, 1)	-100.0	700.0	1583.69092	(4, 1)
-50.0	700.0	4986.01514	(25, 1)	0.0	700.0	10717.30859	(25, 1)
50.0	700.0	4986.02686	(25, 1)	100.0	700.0	1583.69238	(4, 1)
-100.0	800.0	1576.33154	(16, 1)	-50.0	800.0	5124.81445	(25, 1)
0.0	800.0	9454.73926	(25, 1)	50.0	800.0	5124.82715	(25, 1)
100.0	800.0	1576.33630	(16, 1)	-100.0	900.0	1784.42212	(9, 1)
-50.0	900.0	4984.35352	(16, 1)	0.0	900.0	8429.91895	(25, 1)
50.0	900.0	4984.36133	(16, 1)	100.0	900.0	1784.42480	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 174.95212 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	87.58935 (30, 1)	88.47592 (30, 1)	88.77345 (30, 1)	88.47598 (30, 1)	87.58945 (30, 1)
24000.0 /	89.35842 (30, 1)	90.33049 (30, 1)	90.65688 (30, 1)	90.33054 (30, 1)	89.35853 (30, 1)
23000.0 /	91.18178 (30, 1)	92.25116 (30, 1)	92.61041 (30, 1)	92.25121 (30, 1)	91.18189 (30, 1)
22000.0 /	93.05883 (30, 1)	94.23950 (30, 1)	94.63640 (30, 1)	94.23956 (30, 1)	93.05895 (30, 1)
21000.0 /	94.98804 (30, 1)	96.29667 (30, 1)	96.73689 (30, 1)	96.29673 (30, 1)	94.98817 (30, 1)
20000.0 /	96.96651 (30, 1)	98.42309 (30, 1)	98.91348 (30, 1)	98.42316 (30, 1)	96.96664 (30, 1)
19000.0 /	98.98949 (30, 1)	100.61819 (30, 1)	101.16705 (30, 1)	100.61826 (30, 1)	98.98963 (30, 1)
18000.0 /	101.04966 (30, 1)	102.87996 (30, 1)	103.49742 (30, 1)	102.88004 (30, 1)	101.04981 (30, 1)
17000.0 /	103.13624 (30, 1)	105.20440 (30, 1)	105.90299 (30, 1)	105.20448 (30, 1)	103.13640 (30, 1)
16000.0 /	105.23359 (30, 1)	107.58467 (30, 1)	108.38001 (30, 1)	107.58476 (30, 1)	105.23376 (30, 1)
15000.0 /	107.31924 (30, 1)	110.00985 (30, 1)	110.92165 (30, 1)	110.00994 (30, 1)	107.31944 (30, 1)
14000.0 /	108.22315 (30, 1)	111.29296 (30, 1)	112.33549 (30, 1)	111.29307 (30, 1)	108.22335 (30, 1)
13000.0 /	112.50182 (25, 1)	114.10545 (25, 1)	114.64506 (25, 1)	114.10549 (25, 1)	112.50192 (25, 1)
12000.0 /	117.06507 (25, 1)	118.98976 (25, 1)	119.63835 (25, 1)	118.98981 (25, 1)	117.06518 (25, 1)
11000.0 /	121.64271 (25, 1)	123.97901 (25, 1)	124.76773 (25, 1)	123.97907 (25, 1)	121.64282 (25, 1)
10000.0 /	126.08886 (25, 1)	128.96109 (25, 1)	129.93298 (25, 1)	128.96115 (25, 1)	126.08899 (25, 1)
9000.0 /	129.52583 (25, 1)	133.09036 (25, 1)	134.30023 (25, 1)	133.09044 (25, 1)	129.52597 (25, 1)
8000.0 /	131.88516 (25, 1)	136.37143 (25, 1)	137.90054 (25, 1)	136.37152 (25, 1)	131.88533 (25, 1)
7000.0 /	132.42842 (25, 1)	138.16147 (25, 1)	140.12714 (25, 1)	138.16156 (25, 1)	132.42860 (25, 1)
6000.0 /	130.01790 (25, 1)	137.46245 (25, 1)	140.03754 (25, 1)	137.46255 (25, 1)	130.01811 (25, 1)
5000.0 /	122.92905 (25, 1)	132.74670 (25, 1)	136.19055 (25, 1)	132.74683 (25, 1)	122.92928 (25, 1)
4000.0 /	108.66100 (25, 1)	121.75149 (25, 1)	126.45654 (25, 1)	121.75162 (25, 1)	108.66123 (25, 1)
3000.0 /	86.88644 (10, 1)	96.98506 (26, 1)	103.35468 (26, 1)	96.98519 (26, 1)	86.88651 (10, 1)
2000.0 /	108.41728 (5, 1)	113.30823 (5, 1)	122.21285 (22, 1)	113.30825 (5, 1)	108.41733 (5, 1)
1000.0 /	147.79044 (2, 1)	160.13832 (2, 1)	174.95212 (23, 1)	160.13835 (2, 1)	147.79048 (2, 1)

HIGH
1-HR
SGROUP# 4

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(30, 1)
0.0	50.0	0.00043	(30, 1)	50.0	50.0	0.00000	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.01115	(25, 1)
-50.0	100.0	0.75000	(25, 1)	0.0	100.0	3.94124	(30, 1)
50.0	100.0	0.75003	(25, 1)	100.0	100.0	0.01115	(25, 1)
-100.0	200.0	0.05568	(3, 1)	-50.0	200.0	1.59024	(25, 1)
0.0	200.0	6.86251	(15, 1)	50.0	200.0	1.59024	(25, 1)
100.0	200.0	0.05574	(3, 1)	-100.0	300.0	10.64503	(3, 1)
-50.0	300.0	25.00329	(15, 1)	0.0	300.0	69.19481	(15, 1)
50.0	300.0	25.00334	(15, 1)	100.0	300.0	10.64503	(3, 1)
-100.0	400.0	63.28473	(3, 1)	-50.0	400.0	94.09603	(3, 1)
0.0	400.0	144.46127	(15, 1)	50.0	400.0	94.09606	(3, 1)
100.0	400.0	63.28477	(3, 1)	-100.0	500.0	116.42081	(3, 1)
-50.0	500.0	152.37558	(3, 1)	0.0	500.0	188.60384	(15, 1)
50.0	500.0	152.37563	(3, 1)	100.0	500.0	116.42089	(3, 1)
-100.0	600.0	135.35229	(2, 1)	-50.0	600.0	162.04993	(2, 1)
0.0	600.0	202.97829	(15, 1)	50.0	600.0	162.04997	(2, 1)
100.0	600.0	135.35236	(2, 1)	-100.0	700.0	164.65846	(2, 1)
-50.0	700.0	189.81834	(2, 1)	0.0	700.0	199.32382	(15, 1)
50.0	700.0	189.81839	(2, 1)	100.0	700.0	164.65854	(2, 1)
-100.0	800.0	166.71085	(2, 1)	-50.0	800.0	187.06645	(2, 1)
0.0	800.0	194.38972	(2, 1)	50.0	800.0	187.06650	(2, 1)
100.0	800.0	166.71091	(2, 1)	-100.0	900.0	157.74278	(2, 1)
-50.0	900.0	173.51732	(2, 1)	0.0	900.0	179.11859	(2, 1)
50.0	900.0	173.51736	(2, 1)	100.0	900.0	157.74284	(2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 167.54131 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	71.00471 (25, 1)	71.32266 (25, 1)	71.42897 (25, 1)	71.32268 (25, 1)	71.00475 (25, 1)
24000.0 /	73.47922 (25, 1)	73.83277 (25, 1)	73.95100 (25, 1)	73.83279 (25, 1)	73.47926 (25, 1)
23000.0 /	76.11379 (25, 1)	76.50854 (25, 1)	76.64058 (25, 1)	76.50856 (25, 1)	76.11384 (25, 1)
22000.0 /	78.92319 (25, 1)	79.36588 (25, 1)	79.51400 (25, 1)	79.36591 (25, 1)	78.92323 (25, 1)
21000.0 /	81.92381 (25, 1)	82.42265 (25, 1)	82.58961 (25, 1)	82.42268 (25, 1)	81.92386 (25, 1)
20000.0 /	85.13392 (25, 1)	85.69896 (25, 1)	85.88815 (25, 1)	85.69898 (25, 1)	85.13397 (25, 1)
19000.0 /	88.46156 (25, 1)	89.10442 (25, 1)	89.31975 (25, 1)	89.10445 (25, 1)	88.46162 (25, 1)
18000.0 /	91.98183 (25, 1)	92.71738 (25, 1)	92.96389 (25, 1)	92.71741 (25, 1)	91.98189 (25, 1)
17000.0 /	95.70094 (25, 1)	96.54779 (25, 1)	96.83175 (25, 1)	96.54782 (25, 1)	95.70100 (25, 1)
16000.0 /	99.62140 (25, 1)	100.60302 (25, 1)	100.93238 (25, 1)	100.60306 (25, 1)	99.62148 (25, 1)
15000.0 /	103.73967 (25, 1)	104.88599 (25, 1)	105.27092 (25, 1)	104.88603 (25, 1)	103.73975 (25, 1)
14000.0 /	108.04262 (25, 1)	109.39230 (25, 1)	109.84594 (25, 1)	109.39234 (25, 1)	108.04271 (25, 1)
13000.0 /	108.78807 (30, 1)	112.31257 (30, 1)	113.51263 (30, 1)	112.31268 (30, 1)	108.78828 (30, 1)
12000.0 /	108.90911 (30, 1)	112.98376 (30, 1)	114.37561 (30, 1)	112.98388 (30, 1)	108.90934 (30, 1)
11000.0 /	108.44267 (30, 1)	113.18929 (30, 1)	114.81725 (30, 1)	113.18941 (30, 1)	108.44292 (30, 1)
10000.0 /	107.19963 (30, 1)	112.77541 (30, 1)	114.69776 (30, 1)	112.77554 (30, 1)	107.19989 (30, 1)
9000.0 /	104.92931 (30, 1)	111.53940 (30, 1)	113.83408 (30, 1)	111.53954 (30, 1)	104.92959 (30, 1)
8000.0 /	101.29798 (30, 1)	109.21279 (30, 1)	111.98623 (30, 1)	109.21294 (30, 1)	101.29827 (30, 1)
7000.0 /	102.33746 (26, 1)	106.78501 (26, 1)	108.83927 (30, 1)	106.78509 (26, 1)	102.33760 (26, 1)
6000.0 /	105.31876 (26, 1)	111.38010 (26, 1)	113.47712 (26, 1)	111.38018 (26, 1)	105.31893 (26, 1)
5000.0 /	105.44308 (26, 1)	113.92474 (26, 1)	116.90098 (26, 1)	113.92484 (26, 1)	105.44327 (26, 1)
4000.0 /	99.94915 (26, 1)	112.12103 (26, 1)	116.49927 (26, 1)	112.12114 (26, 1)	99.94936 (26, 1)
3000.0 /	83.49811 (5, 1)	95.77966 (25, 1)	101.96129 (25, 1)	95.77978 (25, 1)	83.49813 (5, 1)
2000.0 /	93.59794 (12, 1)	113.29238 (22, 1)	122.13592 (21, 1)	113.29250 (22, 1)	93.59802 (12, 1)
1000.0 /	109.24471 (7, 1)	149.28383 (14, 1)	167.54131 (14, 1)	149.28395 (14, 1)	109.24477 (7, 1)

2ND HIGH
1-HR
SGROUP# 4

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 4,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(25, 1)
0.0	50.0	0.00004	(25, 1)	50.0	50.0	0.00000	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00077	(30, 1)
-50.0	100.0	0.46654	(30, 1)	0.0	100.0	3.04985	(25, 1)
50.0	100.0	0.46654	(30, 1)	100.0	100.0	0.00077	(30, 1)
-100.0	200.0	0.04333	(25, 1)	-50.0	200.0	0.81967	(15, 1)
0.0	200.0	6.55479	(24, 1)	50.0	200.0	0.81967	(15, 1)
100.0	200.0	0.04333	(25, 1)	-100.0	300.0	4.53355	(8, 1)
-50.0	300.0	20.47062	(3, 1)	0.0	300.0	66.72855	(24, 1)
50.0	300.0	20.47063	(3, 1)	100.0	300.0	4.53356	(8, 1)
-100.0	400.0	29.30157	(8, 1)	-50.0	400.0	78.97354	(15, 1)
0.0	400.0	129.18350	(24, 1)	50.0	400.0	78.97366	(15, 1)
100.0	400.0	29.30161	(8, 1)	-100.0	500.0	75.51898	(2, 1)
-50.0	500.0	126.06358	(15, 1)	0.0	500.0	166.67752	(3, 1)
50.0	500.0	126.06376	(15, 1)	100.0	500.0	75.51903	(2, 1)
-100.0	600.0	128.86487	(3, 1)	-50.0	600.0	156.87366	(3, 1)
0.0	600.0	183.55965	(24, 1)	50.0	600.0	156.87370	(3, 1)
100.0	600.0	128.86493	(3, 1)	-100.0	700.0	122.70767	(3, 1)
-50.0	700.0	159.93648	(15, 1)	0.0	700.0	199.03200	(2, 1)
50.0	700.0	159.93665	(15, 1)	100.0	700.0	122.70773	(3, 1)
-100.0	800.0	114.76210	(3, 1)	-50.0	800.0	158.04861	(15, 1)
0.0	800.0	187.97322	(15, 1)	50.0	800.0	158.04877	(15, 1)
100.0	800.0	114.76215	(3, 1)	-100.0	900.0	111.31912	(7, 1)
-50.0	900.0	154.89825	(14, 1)	0.0	900.0	178.33609	(23, 1)
50.0	900.0	154.89839	(14, 1)	100.0	900.0	111.31921	(7, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 174.95212 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	87.58935 (30, 1)	88.47592 (30, 1)	88.77345 (30, 1)	88.47598 (30, 1)	87.58945 (30, 1)
24000.0 /	89.35842 (30, 1)	90.33049 (30, 1)	90.65688 (30, 1)	90.33054 (30, 1)	89.35853 (30, 1)
23000.0 /	91.18178 (30, 1)	92.25116 (30, 1)	92.61041 (30, 1)	92.25121 (30, 1)	91.18189 (30, 1)
22000.0 /	93.05883 (30, 1)	94.23950 (30, 1)	94.63640 (30, 1)	94.23956 (30, 1)	93.05895 (30, 1)
21000.0 /	94.98804 (30, 1)	96.29667 (30, 1)	96.73689 (30, 1)	96.29673 (30, 1)	94.98817 (30, 1)
20000.0 /	96.96651 (30, 1)	98.42309 (30, 1)	98.91348 (30, 1)	98.42316 (30, 1)	96.96664 (30, 1)
19000.0 /	98.98949 (30, 1)	100.61819 (30, 1)	101.16705 (30, 1)	100.61826 (30, 1)	98.98963 (30, 1)
18000.0 /	101.04966 (30, 1)	102.87996 (30, 1)	103.49742 (30, 1)	102.88004 (30, 1)	101.04981 (30, 1)
17000.0 /	103.13624 (30, 1)	105.20440 (30, 1)	105.90299 (30, 1)	105.20448 (30, 1)	103.13640 (30, 1)
16000.0 /	105.23359 (30, 1)	107.58467 (30, 1)	108.38001 (30, 1)	107.58476 (30, 1)	105.23376 (30, 1)
15000.0 /	107.31924 (30, 1)	110.00985 (30, 1)	110.92165 (30, 1)	110.00994 (30, 1)	107.31944 (30, 1)
14000.0 /	108.22315 (30, 1)	111.29296 (30, 1)	112.33549 (30, 1)	111.29307 (30, 1)	108.22335 (30, 1)
13000.0 /	112.50182 (25, 1)	114.10545 (25, 1)	114.64506 (25, 1)	114.10549 (25, 1)	112.50192 (25, 1)
12000.0 /	117.06507 (25, 1)	118.98976 (25, 1)	119.63835 (25, 1)	118.98981 (25, 1)	117.06518 (25, 1)
11000.0 /	121.64271 (25, 1)	123.97901 (25, 1)	124.76773 (25, 1)	123.97907 (25, 1)	121.64282 (25, 1)
10000.0 /	126.08886 (25, 1)	128.96109 (25, 1)	129.93298 (25, 1)	128.96115 (25, 1)	126.08899 (25, 1)
9000.0 /	129.52583 (25, 1)	133.09036 (25, 1)	134.30023 (25, 1)	133.09044 (25, 1)	129.52597 (25, 1)
8000.0 /	131.88516 (25, 1)	136.37143 (25, 1)	137.90054 (25, 1)	136.37152 (25, 1)	131.88533 (25, 1)
7000.0 /	132.42842 (25, 1)	138.16147 (25, 1)	140.12714 (25, 1)	138.16156 (25, 1)	132.42860 (25, 1)
6000.0 /	130.01790 (25, 1)	137.46245 (25, 1)	140.03754 (25, 1)	137.46255 (25, 1)	130.01811 (25, 1)
5000.0 /	122.92905 (25, 1)	132.74670 (25, 1)	136.19055 (25, 1)	132.74683 (25, 1)	122.92928 (25, 1)
4000.0 /	108.66100 (25, 1)	121.75149 (25, 1)	126.45654 (25, 1)	121.75162 (25, 1)	108.66123 (25, 1)
3000.0 /	86.88644 (10, 1)	96.98506 (26, 1)	103.35468 (26, 1)	96.98519 (26, 1)	86.88651 (10, 1)
2000.0 /	108.41728 (5, 1)	113.30823 (5, 1)	122.21285 (22, 1)	113.30825 (5, 1)	108.41733 (5, 1)
1000.0 /	147.79044 (2, 1)	160.13832 (2, 1)	174.95212 (23, 1)	160.13835 (2, 1)	147.79048 (2, 1)

HIGH
1-HR
SGROUP# 5

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(30, 1)
0.0	50.0	0.00043	(30, 1)	50.0	50.0	0.00000	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.01115	(25, 1)
-50.0	100.0	0.75000	(25, 1)	0.0	100.0	3.94124	(30, 1)
50.0	100.0	0.75003	(25, 1)	100.0	100.0	0.01115	(25, 1)
-100.0	200.0	0.05568	(3, 1)	-50.0	200.0	1.59024	(25, 1)
0.0	200.0	6.86251	(15, 1)	50.0	200.0	1.59024	(25, 1)
100.0	200.0	0.05574	(3, 1)	-100.0	300.0	10.64503	(3, 1)
-50.0	300.0	25.00329	(15, 1)	0.0	300.0	69.19481	(15, 1)
50.0	300.0	25.00334	(15, 1)	100.0	300.0	10.64503	(3, 1)
-100.0	400.0	63.28473	(3, 1)	-50.0	400.0	94.09603	(3, 1)
0.0	400.0	144.46127	(15, 1)	50.0	400.0	94.09606	(3, 1)
100.0	400.0	63.28477	(3, 1)	-100.0	500.0	116.42081	(3, 1)
-50.0	500.0	152.37558	(3, 1)	0.0	500.0	188.60384	(15, 1)
50.0	500.0	152.37563	(3, 1)	100.0	500.0	116.42089	(3, 1)
-100.0	600.0	135.35229	(2, 1)	-50.0	600.0	162.04993	(2, 1)
0.0	600.0	202.97829	(15, 1)	50.0	600.0	162.04997	(2, 1)
100.0	600.0	135.35236	(2, 1)	-100.0	700.0	164.65846	(2, 1)
-50.0	700.0	189.81834	(2, 1)	0.0	700.0	199.32382	(15, 1)
50.0	700.0	189.81839	(2, 1)	100.0	700.0	164.65854	(2, 1)
-100.0	800.0	166.71085	(2, 1)	-50.0	800.0	187.06645	(2, 1)
0.0	800.0	194.38972	(2, 1)	50.0	800.0	187.06650	(2, 1)
100.0	800.0	166.71091	(2, 1)	-100.0	900.0	157.74278	(2, 1)
-50.0	900.0	173.51732	(2, 1)	0.0	900.0	179.11859	(2, 1)
50.0	900.0	173.51736	(2, 1)	100.0	900.0	157.74284	(2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 167.54131 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	71.00471 (25, 1)	71.32266 (25, 1)	71.42897 (25, 1)	71.32268 (25, 1)	71.00475 (25, 1)
24000.0 /	73.47922 (25, 1)	73.83277 (25, 1)	73.95100 (25, 1)	73.83279 (25, 1)	73.47926 (25, 1)
23000.0 /	76.11379 (25, 1)	76.50854 (25, 1)	76.64058 (25, 1)	76.50856 (25, 1)	76.11384 (25, 1)
22000.0 /	78.92319 (25, 1)	79.36588 (25, 1)	79.51400 (25, 1)	79.36591 (25, 1)	78.92323 (25, 1)
21000.0 /	81.92381 (25, 1)	82.42265 (25, 1)	82.58961 (25, 1)	82.42268 (25, 1)	81.92386 (25, 1)
20000.0 /	85.13392 (25, 1)	85.69896 (25, 1)	85.88815 (25, 1)	85.69898 (25, 1)	85.13397 (25, 1)
19000.0 /	88.46156 (25, 1)	89.10442 (25, 1)	89.31975 (25, 1)	89.10445 (25, 1)	88.46162 (25, 1)
18000.0 /	91.98183 (25, 1)	92.71738 (25, 1)	92.96389 (25, 1)	92.71741 (25, 1)	91.98189 (25, 1)
17000.0 /	95.70094 (25, 1)	96.54779 (25, 1)	96.83175 (25, 1)	96.54782 (25, 1)	95.70100 (25, 1)
16000.0 /	99.62140 (25, 1)	100.60302 (25, 1)	100.93238 (25, 1)	100.60306 (25, 1)	99.62148 (25, 1)
15000.0 /	103.73967 (25, 1)	104.88599 (25, 1)	105.27092 (25, 1)	104.88603 (25, 1)	103.73975 (25, 1)
14000.0 /	108.04262 (25, 1)	109.39230 (25, 1)	109.84594 (25, 1)	109.39234 (25, 1)	108.04271 (25, 1)
13000.0 /	108.78807 (30, 1)	112.31257 (30, 1)	113.51263 (30, 1)	112.31268 (30, 1)	108.78828 (30, 1)
12000.0 /	108.90911 (30, 1)	112.98376 (30, 1)	114.37561 (30, 1)	112.98388 (30, 1)	108.90934 (30, 1)
11000.0 /	108.44267 (30, 1)	113.18929 (30, 1)	114.81725 (30, 1)	113.18941 (30, 1)	108.44292 (30, 1)
10000.0 /	107.19963 (30, 1)	112.77541 (30, 1)	114.69776 (30, 1)	112.77554 (30, 1)	107.19989 (30, 1)
9000.0 /	104.92931 (30, 1)	111.53940 (30, 1)	113.83408 (30, 1)	111.53954 (30, 1)	104.92959 (30, 1)
8000.0 /	101.29798 (30, 1)	109.21279 (30, 1)	111.98623 (30, 1)	109.21294 (30, 1)	101.29827 (30, 1)
7000.0 /	102.33746 (26, 1)	106.78501 (26, 1)	108.83927 (30, 1)	106.78509 (26, 1)	102.33760 (26, 1)
6000.0 /	105.31876 (26, 1)	111.38010 (26, 1)	113.47712 (26, 1)	111.38018 (26, 1)	105.31893 (26, 1)
5000.0 /	105.44308 (26, 1)	113.92474 (26, 1)	116.90098 (26, 1)	113.92484 (26, 1)	105.44327 (26, 1)
4000.0 /	99.94915 (26, 1)	112.12103 (26, 1)	116.49927 (26, 1)	112.12114 (26, 1)	99.94936 (26, 1)
3000.0 /	83.49811 (5, 1)	95.77966 (25, 1)	101.96129 (25, 1)	95.77978 (25, 1)	83.49813 (5, 1)
2000.0 /	93.59794 (12, 1)	113.29238 (22, 1)	122.13592 (21, 1)	113.29250 (22, 1)	93.59802 (12, 1)
1000.0 /	109.24471 (7, 1)	149.28383 (14, 1)	167.54131 (14, 1)	149.28395 (14, 1)	109.24477 (7, 1)

2ND HIGH
1-HR
SGROUP# 5

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 5,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(25, 1)
0.0	50.0	0.00004	(25, 1)	50.0	50.0	0.00000	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00077	(30, 1)
-50.0	100.0	0.46654	(30, 1)	0.0	100.0	3.04985	(25, 1)
50.0	100.0	0.46654	(30, 1)	100.0	100.0	0.00077	(30, 1)
-100.0	200.0	0.04333	(25, 1)	-50.0	200.0	0.81967	(15, 1)
0.0	200.0	6.55479	(24, 1)	50.0	200.0	0.81967	(15, 1)
100.0	200.0	0.04333	(25, 1)	-100.0	300.0	4.53355	(8, 1)
-50.0	300.0	20.47062	(3, 1)	0.0	300.0	66.72855	(24, 1)
50.0	300.0	20.47063	(3, 1)	100.0	300.0	4.53356	(8, 1)
-100.0	400.0	29.30157	(8, 1)	-50.0	400.0	78.97354	(15, 1)
0.0	400.0	129.18350	(24, 1)	50.0	400.0	78.97366	(15, 1)
100.0	400.0	29.30161	(8, 1)	-100.0	500.0	75.51898	(2, 1)
-50.0	500.0	126.06358	(15, 1)	0.0	500.0	166.67752	(3, 1)
50.0	500.0	126.06376	(15, 1)	100.0	500.0	75.51903	(2, 1)
-100.0	600.0	128.86487	(3, 1)	-50.0	600.0	156.87366	(3, 1)
0.0	600.0	183.55965	(24, 1)	50.0	600.0	156.87370	(3, 1)
100.0	600.0	128.86493	(3, 1)	-100.0	700.0	122.70767	(3, 1)
-50.0	700.0	159.93648	(15, 1)	0.0	700.0	199.03200	(2, 1)
50.0	700.0	159.93665	(15, 1)	100.0	700.0	122.70773	(3, 1)
-100.0	800.0	114.76210	(3, 1)	-50.0	800.0	158.04861	(15, 1)
0.0	800.0	187.97322	(15, 1)	50.0	800.0	158.04877	(15, 1)
100.0	800.0	114.76215	(3, 1)	-100.0	900.0	111.31912	(7, 1)
-50.0	900.0	154.89825	(14, 1)	0.0	900.0	178.33609	(23, 1)
50.0	900.0	154.89839	(14, 1)	100.0	900.0	111.31921	(7, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 248.30002 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	122.58774 (30, 1)	123.82812 (30, 1)	124.24438 (30, 1)	123.82819 (30, 1)	122.58788 (30, 1)
24000.0 /	125.20988 (30, 1)	126.57143 (30, 1)	127.02858 (30, 1)	126.57150 (30, 1)	125.21003 (30, 1)
23000.0 /	127.92776 (30, 1)	129.42747 (30, 1)	129.93130 (30, 1)	129.42755 (30, 1)	127.92793 (30, 1)
22000.0 /	130.74374 (30, 1)	132.40179 (30, 1)	132.95917 (30, 1)	132.40189 (30, 1)	130.74391 (30, 1)
21000.0 /	133.65926 (30, 1)	135.49974 (30, 1)	136.11890 (30, 1)	135.49983 (30, 1)	133.65944 (30, 1)
20000.0 /	136.67459 (30, 1)	138.72655 (30, 1)	139.41739 (30, 1)	138.72664 (30, 1)	136.67477 (30, 1)
19000.0 /	139.78828 (30, 1)	142.08691 (30, 1)	142.86153 (30, 1)	142.08702 (30, 1)	139.78848 (30, 1)
18000.0 /	142.99637 (30, 1)	145.58478 (30, 1)	146.45799 (30, 1)	145.58490 (30, 1)	142.99658 (30, 1)
17000.0 /	146.29135 (30, 1)	149.22281 (30, 1)	150.21298 (30, 1)	149.22292 (30, 1)	146.29158 (30, 1)
16000.0 /	149.66055 (30, 1)	153.00154 (30, 1)	154.13174 (30, 1)	153.00166 (30, 1)	149.66080 (30, 1)
15000.0 /	153.08372 (30, 1)	156.91827 (30, 1)	158.21773 (30, 1)	156.91841 (30, 1)	153.08398 (30, 1)
14000.0 /	155.05168 (30, 1)	159.44539 (30, 1)	160.93750 (30, 1)	159.44553 (30, 1)	155.05196 (30, 1)
13000.0 /	156.66583 (30, 1)	161.73564 (30, 1)	163.46182 (30, 1)	161.73579 (30, 1)	156.66614 (30, 1)
12000.0 /	157.80034 (30, 1)	163.69635 (30, 1)	165.71028 (30, 1)	163.69652 (30, 1)	157.80067 (30, 1)
11000.0 /	158.27823 (30, 1)	165.19542 (30, 1)	167.56775 (30, 1)	165.19560 (30, 1)	158.27858 (30, 1)
10000.0 /	161.58220 (25, 1)	166.05626 (30, 1)	168.88170 (30, 1)	166.05646 (30, 1)	161.58237 (25, 1)
9000.0 /	167.05188 (25, 1)	171.64474 (25, 1)	173.20363 (25, 1)	171.64484 (25, 1)	167.05206 (25, 1)
8000.0 /	171.48969 (25, 1)	177.31631 (25, 1)	179.30223 (25, 1)	177.31642 (25, 1)	171.48990 (25, 1)
7000.0 /	174.05243 (25, 1)	181.57619 (25, 1)	184.15573 (25, 1)	181.57631 (25, 1)	174.05267 (25, 1)
6000.0 /	173.39299 (25, 1)	183.30150 (25, 1)	186.72865 (25, 1)	183.30165 (25, 1)	173.39326 (25, 1)
5000.0 /	167.36963 (25, 1)	180.69974 (25, 1)	185.37505 (25, 1)	180.69991 (25, 1)	167.36992 (25, 1)
4000.0 /	152.63530 (25, 1)	170.94728 (25, 1)	177.52715 (25, 1)	170.94746 (25, 1)	152.63562 (25, 1)
3000.0 /	120.26575 (26, 1)	145.43687 (26, 1)	154.94786 (26, 1)	145.43707 (26, 1)	120.26607 (26, 1)
2000.0 /	112.89488 (5, 1)	139.90074 (22, 1)	150.90036 (22, 1)	139.90089 (22, 1)	112.89494 (5, 1)
1000.0 /	153.50705 (2, 1)	190.38112 (23, 1)	248.30002 (23, 1)	190.38147 (23, 1)	153.50710 (2, 1)

HIGH
1-HR
SGROUP# 6

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.09881	(30, 1)
0.0	50.0	1.33807	(30, 1)	50.0	50.0	0.09881	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.15152	(25, 1)
-50.0	100.0	4.99578	(25, 1)	0.0	100.0	20.35561	(30, 1)
50.0	100.0	4.99592	(25, 1)	100.0	100.0	0.15153	(25, 1)
-100.0	200.0	0.24801	(25, 1)	-50.0	200.0	6.10828	(25, 1)
0.0	200.0	104.92973	(24, 1)	50.0	200.0	6.10829	(25, 1)
100.0	200.0	0.24801	(25, 1)	-100.0	300.0	14.48462	(3, 1)
-50.0	300.0	57.83127	(15, 1)	0.0	300.0	279.92798	(24, 1)
50.0	300.0	57.83140	(15, 1)	100.0	300.0	14.48463	(3, 1)
-100.0	400.0	74.17310	(3, 1)	-50.0	400.0	135.79457	(15, 1)
0.0	400.0	337.22672	(24, 1)	50.0	400.0	135.79480	(15, 1)
100.0	400.0	74.17316	(3, 1)	-100.0	500.0	127.75591	(3, 1)
-50.0	500.0	186.37703	(15, 1)	0.0	500.0	343.07120	(24, 1)
50.0	500.0	186.37727	(15, 1)	100.0	500.0	127.75599	(3, 1)
-100.0	600.0	142.29382	(2, 1)	-50.0	600.0	205.47217	(15, 1)
0.0	600.0	328.20532	(24, 1)	50.0	600.0	205.47243	(15, 1)
100.0	600.0	142.29388	(2, 1)	-100.0	700.0	171.40735	(2, 1)
-50.0	700.0	204.66359	(15, 1)	0.0	700.0	304.77246	(24, 1)
50.0	700.0	204.66380	(15, 1)	100.0	700.0	171.40742	(2, 1)
-100.0	800.0	173.13205	(2, 1)	-50.0	800.0	194.63568	(15, 1)
0.0	800.0	279.65842	(24, 1)	50.0	800.0	194.63586	(15, 1)
100.0	800.0	173.13211	(2, 1)	-100.0	900.0	163.80232	(2, 1)
-50.0	900.0	191.62387	(23, 1)	0.0	900.0	264.14661	(23, 1)
50.0	900.0	191.62425	(23, 1)	100.0	900.0	163.80240	(2, 1)

2ND HIGH
1-HR
SGROUP# (

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 232.13150 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	88.37896 (25, 1)	88.77465 (25, 1)	88.90695 (25, 1)	88.77467 (25, 1)	88.37901 (25, 1)
24000.0 /	91.51853 (25, 1)	91.95881 (25, 1)	92.10604 (25, 1)	91.95883 (25, 1)	91.51858 (25, 1)
23000.0 /	94.86678 (25, 1)	95.35870 (25, 1)	95.52324 (25, 1)	95.35872 (25, 1)	94.86683 (25, 1)
22000.0 /	98.44378 (25, 1)	98.99586 (25, 1)	99.18058 (25, 1)	98.99589 (25, 1)	98.44384 (25, 1)
21000.0 /	102.27207 (25, 1)	102.89468 (25, 1)	103.10307 (25, 1)	102.89471 (25, 1)	102.27213 (25, 1)
20000.0 /	106.37695 (25, 1)	107.08282 (25, 1)	107.31916 (25, 1)	107.08286 (25, 1)	106.37701 (25, 1)
19000.0 /	110.67458 (25, 1)	111.47866 (25, 1)	111.74799 (25, 1)	111.47870 (25, 1)	110.67465 (25, 1)
18000.0 /	115.24162 (25, 1)	116.16293 (25, 1)	116.47168 (25, 1)	116.16296 (25, 1)	115.24169 (25, 1)
17000.0 /	120.09234 (25, 1)	121.15471 (25, 1)	121.51093 (25, 1)	121.15475 (25, 1)	120.09242 (25, 1)
16000.0 /	125.23822 (25, 1)	126.47183 (25, 1)	126.88575 (25, 1)	126.47188 (25, 1)	125.23831 (25, 1)
15000.0 /	130.68541 (25, 1)	132.12894 (25, 1)	132.61365 (25, 1)	132.12898 (25, 1)	130.68552 (25, 1)
14000.0 /	136.43115 (25, 1)	138.13472 (25, 1)	138.70732 (25, 1)	138.13478 (25, 1)	136.43126 (25, 1)
13000.0 /	142.45766 (25, 1)	144.48727 (25, 1)	145.17024 (25, 1)	144.48734 (25, 1)	142.45778 (25, 1)
12000.0 /	148.72287 (25, 1)	151.16667 (25, 1)	151.99019 (25, 1)	151.16673 (25, 1)	148.72301 (25, 1)
11000.0 /	155.14519 (25, 1)	158.12297 (25, 1)	159.12825 (25, 1)	158.12306 (25, 1)	155.14534 (25, 1)
10000.0 /	157.86058 (30, 1)	165.26004 (25, 1)	166.50453 (25, 1)	165.26013 (25, 1)	157.86096 (30, 1)
9000.0 /	156.22092 (30, 1)	166.04018 (30, 1)	169.44862 (30, 1)	166.04039 (30, 1)	156.22131 (30, 1)
8000.0 /	152.90733 (30, 1)	164.82155 (30, 1)	168.99586 (30, 1)	164.82178 (30, 1)	152.90776 (30, 1)
7000.0 /	147.28542 (30, 1)	161.95027 (30, 1)	167.15622 (30, 1)	161.95052 (30, 1)	147.28587 (30, 1)
6000.0 /	141.97391 (26, 1)	153.73404 (30, 1)	160.24374 (30, 1)	153.73431 (30, 1)	141.97412 (26, 1)
5000.0 /	145.05363 (26, 1)	156.70113 (26, 1)	160.78792 (26, 1)	156.70126 (26, 1)	145.05389 (26, 1)
4000.0 /	141.71605 (26, 1)	158.92874 (26, 1)	165.11902 (26, 1)	158.92891 (26, 1)	141.71634 (26, 1)
3000.0 /	118.28017 (25, 1)	142.51900 (25, 1)	151.65611 (25, 1)	142.51920 (25, 1)	118.28048 (25, 1)
2000.0 /	111.57814 (21, 1)	139.86250 (21, 1)	150.80260 (21, 1)	139.86264 (21, 1)	111.57838 (21, 1)
1000.0 /	124.83249 (14, 1)	177.69730 (24, 1)	232.13150 (24, 1)	177.69763 (24, 1)	124.83268 (14, 1)

2ND HIGH
1-HR
SGROUP# 6

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 6,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00357	(25, 1)
0.0	50.0	0.04021	(25, 1)	50.0	50.0	0.00357	(25, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.01942	(30, 1)
-50.0	100.0	3.57751	(30, 1)	0.0	100.0	16.01943	(25, 1)
50.0	100.0	3.57752	(30, 1)	100.0	100.0	0.01942	(30, 1)
-100.0	200.0	0.11421	(3, 1)	-50.0	200.0	4.21588	(30, 1)
0.0	200.0	34.54665	(15, 1)	50.0	200.0	4.21589	(30, 1)
100.0	200.0	0.11431	(3, 1)	-100.0	300.0	8.26489	(8, 1)
-50.0	300.0	29.37141	(8, 1)	0.0	300.0	159.21161	(15, 1)
50.0	300.0	29.37144	(8, 1)	100.0	300.0	8.26491	(8, 1)
-100.0	400.0	42.40926	(8, 1)	-50.0	400.0	109.95719	(3, 1)
0.0	400.0	247.73186	(15, 1)	50.0	400.0	109.95724	(3, 1)
100.0	400.0	42.40932	(8, 1)	-100.0	500.0	86.90244	(8, 1)
-50.0	500.0	166.90231	(3, 1)	0.0	500.0	278.38870	(15, 1)
50.0	500.0	166.90237	(3, 1)	100.0	500.0	86.90254	(8, 1)
-100.0	600.0	136.92369	(3, 1)	-50.0	600.0	183.37703	(14, 1)
0.0	600.0	290.40704	(23, 1)	50.0	600.0	183.37726	(14, 1)
100.0	600.0	136.92377	(3, 1)	-100.0	700.0	128.38898	(3, 1)
-50.0	700.0	197.32014	(2, 1)	0.0	700.0	288.05817	(23, 1)
50.0	700.0	197.32019	(2, 1)	100.0	700.0	128.38904	(3, 1)
-100.0	800.0	128.09465	(8, 1)	-50.0	800.0	194.22511	(14, 1)
0.0	800.0	278.14706	(23, 1)	50.0	800.0	194.22530	(14, 1)
100.0	800.0	128.09476	(8, 1)	-100.0	900.0	123.29049	(14, 1)
-50.0	900.0	187.00548	(14, 1)	0.0	900.0	255.08749	(24, 1)
50.0	900.0	187.00565	(14, 1)	100.0	900.0	123.29070	(14, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 354.71475 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	163.69576 (30, 1)	165.35185 (30, 1)	165.90762 (30, 1)	165.35194 (30, 1)	163.69595 (30, 1)
24000.0 /	167.91635 (30, 1)	169.74200 (30, 1)	170.35500 (30, 1)	169.74211 (30, 1)	167.91655 (30, 1)
23000.0 /	172.34676 (30, 1)	174.36687 (30, 1)	175.04552 (30, 1)	174.36697 (30, 1)	172.34698 (30, 1)
22000.0 /	177.00108 (30, 1)	179.24535 (30, 1)	179.99979 (30, 1)	179.24547 (30, 1)	177.00131 (30, 1)
21000.0 /	181.89415 (30, 1)	184.39835 (30, 1)	185.24077 (30, 1)	184.39848 (30, 1)	181.89439 (30, 1)
20000.0 /	187.04143 (30, 1)	189.84897 (30, 1)	190.79419 (30, 1)	189.84911 (30, 1)	187.04169 (30, 1)
19000.0 /	192.45854 (30, 1)	195.62253 (30, 1)	196.68877 (30, 1)	195.62268 (30, 1)	192.45882 (30, 1)
18000.0 /	198.16121 (30, 1)	201.74725 (30, 1)	202.95702 (30, 1)	201.74741 (30, 1)	198.16150 (30, 1)
17000.0 /	204.16406 (30, 1)	208.25403 (30, 1)	209.63554 (30, 1)	208.25420 (30, 1)	204.16438 (30, 1)
16000.0 /	210.47948 (30, 1)	215.17670 (30, 1)	216.76569 (30, 1)	215.17688 (30, 1)	210.47983 (30, 1)
15000.0 /	217.11555 (30, 1)	222.55209 (30, 1)	224.39442 (30, 1)	222.55228 (30, 1)	217.11592 (30, 1)
14000.0 /	222.52271 (30, 1)	228.82582 (30, 1)	230.96635 (30, 1)	228.82602 (30, 1)	222.52310 (30, 1)
13000.0 /	227.83257 (30, 1)	235.20201 (30, 1)	237.71115 (30, 1)	235.20222 (30, 1)	227.83301 (30, 1)
12000.0 /	232.92400 (30, 1)	241.62228 (30, 1)	244.59340 (30, 1)	241.62254 (30, 1)	232.92447 (30, 1)
11000.0 /	237.61055 (30, 1)	247.98837 (30, 1)	251.54752 (30, 1)	247.98865 (30, 1)	237.61107 (30, 1)
10000.0 /	241.61842 (30, 1)	254.15338 (30, 1)	258.47467 (30, 1)	254.15367 (30, 1)	241.61899 (30, 1)
9000.0 /	244.53957 (30, 1)	259.89648 (30, 1)	265.22696 (30, 1)	259.89682 (30, 1)	244.54019 (30, 1)
8000.0 /	245.75620 (30, 1)	264.88394 (30, 1)	271.58530 (30, 1)	264.88434 (30, 1)	245.75688 (30, 1)
7000.0 /	244.31006 (30, 1)	268.60129 (30, 1)	277.22385 (30, 1)	268.60172 (30, 1)	244.31082 (30, 1)
6000.0 /	237.20285 (25, 1)	266.23758 (30, 1)	277.49091 (30, 1)	266.23804 (30, 1)	237.20323 (25, 1)
5000.0 /	237.92889 (25, 1)	260.01010 (31, 1)	275.43082 (31, 1)	260.01062 (31, 1)	237.92932 (25, 1)
4000.0 /	228.70476 (25, 1)	258.83328 (31, 1)	281.84348 (31, 1)	258.83389 (31, 1)	228.70523 (25, 1)
3000.0 /	193.35475 (25, 1)	248.59627 (32, 1)	286.47968 (32, 1)	248.59702 (32, 1)	193.35524 (25, 1)
2000.0 /	143.58614 (21, 1)	209.80453 (33, 1)	279.56949 (33, 1)	209.80539 (33, 1)	143.58644 (21, 1)
1000.0 /	155.52563 (2, 1)	272.03439 (23, 1)	354.71475 (23, 1)	272.03491 (23, 1)	155.52570 (2, 1)

HIGH
1-HR
SGROUP# 7

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	44.18484	(3, 1)
0.0	50.0	54421.23828	(21, 1)	50.0	50.0	44.18489	(3, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	5.62570	(1, 1)
-50.0	100.0	292.36313	(3, 1)	0.0	100.0	14363.54492	(22, 1)
50.0	100.0	292.53482	(3, 1)	100.0	100.0	5.62822	(1, 1)
-100.0	200.0	94.75876	(3, 1)	-50.0	200.0	425.80557	(8, 1)
0.0	200.0	3775.25146	(23, 1)	50.0	200.0	425.80615	(8, 1)
100.0	200.0	94.77141	(3, 1)	-100.0	300.0	160.51967	(3, 1)
-50.0	300.0	410.13419	(15, 1)	0.0	300.0	1795.80188	(23, 1)
50.0	300.0	410.13507	(15, 1)	100.0	300.0	160.51979	(3, 1)
-100.0	400.0	178.27086	(3, 1)	-50.0	400.0	393.36325	(15, 1)
0.0	400.0	1097.28503	(24, 1)	50.0	400.0	393.36389	(15, 1)
100.0	400.0	178.27101	(3, 1)	-100.0	500.0	168.19421	(3, 1)
-50.0	500.0	339.39725	(15, 1)	0.0	500.0	768.12488	(24, 1)
50.0	500.0	339.39771	(15, 1)	100.0	500.0	168.19432	(3, 1)
-100.0	600.0	151.26097	(2, 1)	-50.0	600.0	294.37131	(24, 1)
0.0	600.0	575.71613	(24, 1)	50.0	600.0	294.37216	(24, 1)
100.0	600.0	151.26105	(2, 1)	-100.0	700.0	175.67897	(2, 1)
-50.0	700.0	303.65915	(23, 1)	0.0	700.0	501.82068	(23, 1)
50.0	700.0	303.65988	(23, 1)	100.0	700.0	175.67905	(2, 1)
-100.0	800.0	175.66164	(2, 1)	-50.0	800.0	300.13300	(23, 1)
0.0	800.0	445.91882	(23, 1)	50.0	800.0	300.13364	(23, 1)
100.0	800.0	175.66171	(2, 1)	-100.0	900.0	165.95488	(2, 1)
-50.0	900.0	288.14767	(23, 1)	0.0	900.0	397.07111	(23, 1)
50.0	900.0	288.14825	(23, 1)	100.0	900.0	165.95494	(2, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 346.42749 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	114.22298 (31, 1)	115.37943 (31, 1)	115.76753 (31, 1)	115.37949 (31, 1)	114.22311 (31, 1)
24000.0 /	117.95293 (31, 1)	119.23640 (31, 1)	119.66735 (31, 1)	119.23648 (31, 1)	117.95307 (31, 1)
23000.0 /	121.92128 (31, 1)	123.35159 (31, 1)	123.83211 (31, 1)	123.35167 (31, 1)	121.92143 (31, 1)
22000.0 /	126.15058 (31, 1)	127.75161 (31, 1)	128.28981 (31, 1)	127.75169 (31, 1)	126.15074 (31, 1)
21000.0 /	130.66597 (31, 1)	132.46675 (31, 1)	133.07253 (31, 1)	132.46683 (31, 1)	130.66614 (31, 1)
20000.0 /	135.49571 (31, 1)	137.53183 (31, 1)	138.21733 (31, 1)	137.53192 (31, 1)	135.49591 (31, 1)
19000.0 /	140.67133 (31, 1)	142.98679 (31, 1)	143.76707 (31, 1)	142.98689 (31, 1)	140.67152 (31, 1)
18000.0 /	146.22801 (31, 1)	148.87782 (31, 1)	149.77176 (31, 1)	148.87793 (31, 1)	146.22823 (31, 1)
17000.0 /	152.20491 (31, 1)	155.25856 (31, 1)	156.29004 (31, 1)	155.25868 (31, 1)	152.20515 (31, 1)
16000.0 /	158.64510 (31, 1)	162.19144 (31, 1)	163.39113 (31, 1)	162.19157 (31, 1)	158.64536 (31, 1)
15000.0 /	165.59541 (31, 1)	169.74965 (31, 1)	171.15747 (31, 1)	169.74980 (31, 1)	165.59570 (31, 1)
14000.0 /	172.50061 (31, 1)	177.39716 (31, 1)	179.06007 (31, 1)	177.39731 (31, 1)	172.50093 (31, 1)
13000.0 /	179.77618 (31, 1)	185.60524 (31, 1)	187.59003 (31, 1)	185.60542 (31, 1)	179.77652 (31, 1)
12000.0 /	187.39392 (31, 1)	194.41148 (31, 1)	196.80865 (31, 1)	194.41168 (31, 1)	187.39430 (31, 1)
11000.0 /	195.28314 (31, 1)	203.84015 (31, 1)	206.77509 (31, 1)	203.84038 (31, 1)	195.28358 (31, 1)
10000.0 /	203.30490 (31, 1)	213.89311 (31, 1)	217.54376 (31, 1)	213.89337 (31, 1)	203.30539 (31, 1)
9000.0 /	212.88274 (25, 1)	224.52820 (31, 1)	229.15450 (31, 1)	224.52849 (31, 1)	212.88298 (25, 1)
8000.0 /	222.64166 (25, 1)	235.61972 (31, 1)	241.61461 (31, 1)	235.62006 (31, 1)	222.64195 (25, 1)
7000.0 /	231.23595 (25, 1)	246.88148 (31, 1)	254.86407 (31, 1)	246.88187 (31, 1)	231.23627 (25, 1)
6000.0 /	235.14285 (30, 1)	254.97807 (31, 1)	265.85831 (31, 1)	254.97852 (31, 1)	235.14366 (30, 1)
5000.0 /	218.73792 (31, 1)	259.32977 (30, 1)	274.50891 (30, 1)	259.33029 (30, 1)	218.73880 (31, 1)
4000.0 /	206.91312 (26, 1)	256.10004 (25, 1)	274.46530 (32, 1)	256.10031 (25, 1)	206.91356 (26, 1)
3000.0 /	191.95364 (26, 1)	245.16212 (31, 1)	282.01666 (31, 1)	245.16286 (31, 1)	191.95415 (26, 1)
2000.0 /	139.47398 (27, 1)	205.46875 (27, 1)	271.24466 (32, 1)	205.46913 (27, 1)	139.47449 (27, 1)
1000.0 /	149.69843 (14, 1)	266.94781 (22, 1)	346.42749 (22, 1)	266.94830 (22, 1)	149.69865 (14, 1)

2ND HIGH
1-HR
SGROUP# 7

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 7,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	38.02244	(2, 1)
0.0	50.0	46690.57422	(22, 1)	50.0	50.0	38.02247	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	3.95927	(3, 1)
-50.0	100.0	174.37657	(8, 1)	0.0	100.0	12895.83984	(23, 1)
50.0	100.0	174.37694	(8, 1)	100.0	100.0	3.96161	(3, 1)
-100.0	200.0	45.74429	(2, 1)	-50.0	200.0	348.97095	(3, 1)
0.0	200.0	3376.07886	(24, 1)	50.0	200.0	348.97119	(3, 1)
100.0	200.0	45.75299	(2, 1)	-100.0	300.0	107.41055	(8, 1)
-50.0	300.0	380.64420	(8, 1)	0.0	300.0	1741.96924	(24, 1)
50.0	300.0	380.64453	(8, 1)	100.0	300.0	107.41071	(8, 1)
-100.0	400.0	144.05716	(8, 1)	-50.0	400.0	357.61407	(14, 1)
0.0	400.0	1094.55786	(23, 1)	50.0	400.0	357.61462	(14, 1)
100.0	400.0	144.05739	(8, 1)	-100.0	500.0	151.67238	(8, 1)
-50.0	500.0	312.06171	(14, 1)	0.0	500.0	756.09753	(23, 1)
50.0	500.0	312.06213	(14, 1)	100.0	500.0	151.67256	(8, 1)
-100.0	600.0	146.51004	(8, 1)	-50.0	600.0	291.92856	(23, 1)
0.0	600.0	564.87543	(23, 1)	50.0	600.0	291.92938	(23, 1)
100.0	600.0	146.51018	(8, 1)	-100.0	700.0	151.96585	(8, 1)
-50.0	700.0	292.75085	(24, 1)	0.0	700.0	486.78290	(24, 1)
50.0	700.0	292.75159	(24, 1)	100.0	700.0	151.96599	(8, 1)
-100.0	800.0	149.93701	(14, 1)	-50.0	800.0	279.08386	(24, 1)
0.0	800.0	416.23068	(24, 1)	50.0	800.0	279.08450	(24, 1)
100.0	800.0	149.93730	(14, 1)	-100.0	900.0	152.55963	(14, 1)
-50.0	900.0	267.37347	(22, 1)	0.0	900.0	365.89954	(22, 1)
50.0	900.0	267.37402	(22, 1)	100.0	900.0	152.55991	(14, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 164.82719 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	4.21944 (30, 1)	4.26221 (30, 1)	4.27657 (30, 1)	4.26222 (30, 1)	4.21945 (30, 1)
24000.0 /	4.42092 (30, 1)	4.46909 (30, 1)	4.48526 (30, 1)	4.46909 (30, 1)	4.42092 (30, 1)
23000.0 /	4.64077 (30, 1)	4.69528 (30, 1)	4.71360 (30, 1)	4.69529 (30, 1)	4.64077 (30, 1)
22000.0 /	4.88150 (30, 1)	4.94355 (30, 1)	4.96441 (30, 1)	4.94355 (30, 1)	4.88151 (30, 1)
21000.0 /	5.14612 (30, 1)	5.21716 (30, 1)	5.24105 (30, 1)	5.21716 (30, 1)	5.14612 (30, 1)
20000.0 /	5.43818 (30, 1)	5.52005 (30, 1)	5.54761 (30, 1)	5.52005 (30, 1)	5.43819 (30, 1)
19000.0 /	5.76199 (30, 1)	5.85702 (30, 1)	5.88905 (30, 1)	5.85703 (30, 1)	5.76200 (30, 1)
18000.0 /	6.12275 (30, 1)	6.23394 (30, 1)	6.27146 (30, 1)	6.23395 (30, 1)	6.12276 (30, 1)
17000.0 /	6.52682 (30, 1)	6.65809 (30, 1)	6.70243 (30, 1)	6.65809 (30, 1)	6.52683 (30, 1)
16000.0 /	6.98206 (30, 1)	7.13856 (30, 1)	7.19150 (30, 1)	7.13856 (30, 1)	6.98207 (30, 1)
15000.0 /	7.49825 (30, 1)	7.68692 (30, 1)	7.75086 (30, 1)	7.68693 (30, 1)	7.49826 (30, 1)
14000.0 /	8.12849 (30, 1)	8.36001 (30, 1)	8.43864 (30, 1)	8.36002 (30, 1)	8.12850 (30, 1)
13000.0 /	8.85722 (30, 1)	9.14552 (30, 1)	9.24370 (30, 1)	9.14553 (30, 1)	8.85724 (30, 1)
12000.0 /	9.70698 (30, 1)	10.07212 (30, 1)	10.19687 (30, 1)	10.07213 (30, 1)	9.70700 (30, 1)
11000.0 /	10.70736 (30, 1)	11.17901 (30, 1)	11.34081 (30, 1)	11.17903 (30, 1)	10.70738 (30, 1)
10000.0 /	11.89726 (30, 1)	12.52077 (30, 1)	12.73578 (30, 1)	12.52078 (30, 1)	11.89729 (30, 1)
9000.0 /	13.32799 (30, 1)	14.17532 (30, 1)	14.46957 (30, 1)	14.17534 (30, 1)	13.32803 (30, 1)
8000.0 /	15.06674 (30, 1)	16.25742 (30, 1)	16.67488 (30, 1)	16.25744 (30, 1)	15.06678 (30, 1)
7000.0 /	17.19825 (30, 1)	18.94190 (30, 1)	19.56156 (30, 1)	18.94193 (30, 1)	17.19831 (30, 1)
6000.0 /	19.92034 (30, 1)	22.62394 (30, 1)	23.60437 (30, 1)	22.62398 (30, 1)	19.92041 (30, 1)
5000.0 /	23.21660 (30, 1)	27.69823 (30, 1)	29.37673 (30, 1)	27.69829 (30, 1)	23.21670 (30, 1)
4000.0 /	26.86631 (30, 1)	34.96828 (30, 1)	38.17949 (30, 1)	34.96837 (30, 1)	26.86645 (30, 1)
3000.0 /	29.36636 (30, 1)	45.70709 (30, 1)	52.96982 (30, 1)	45.70723 (30, 1)	29.36654 (30, 1)
2000.0 /	24.67694 (25, 1)	61.07219 (30, 1)	82.95901 (30, 1)	61.07245 (30, 1)	24.67703 (25, 1)
1000.0 /	25.02343 (16, 1)	56.87250 (30, 1)	164.82719 (30, 1)	56.87292 (30, 1)	25.02352 (16, 1)

HIGH
1-HR
SGROUP# 8

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	2.35619	(1, 1)
0.0	50.0	4065.86865	(16, 1)	50.0	50.0	2.35619	(1, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.32571	(1, 1)
-50.0	100.0	56.29072	(1, 1)	0.0	100.0	1795.79224	(16, 1)
50.0	100.0	56.28078	(1, 1)	100.0	100.0	0.32565	(1, 1)
-100.0	200.0	14.71811	(1, 1)	-50.0	200.0	74.18680	(4, 1)
0.0	200.0	653.44812	(16, 1)	50.0	200.0	74.18690	(4, 1)
100.0	200.0	14.71719	(1, 1)	-100.0	300.0	19.04859	(1, 1)
-50.0	300.0	69.70330	(9, 1)	0.0	300.0	412.85532	(30, 1)
50.0	300.0	69.70346	(9, 1)	100.0	300.0	19.04860	(1, 1)
-100.0	400.0	20.79393	(4, 1)	-50.0	400.0	69.53212	(9, 1)
0.0	400.0	351.75714	(30, 1)	50.0	400.0	69.53224	(9, 1)
100.0	400.0	20.79396	(4, 1)	-100.0	500.0	19.60850	(4, 1)
-50.0	500.0	77.30230	(16, 1)	0.0	500.0	300.17923	(30, 1)
50.0	500.0	77.30254	(16, 1)	100.0	500.0	19.60853	(4, 1)
-100.0	600.0	20.32605	(9, 1)	-50.0	600.0	78.89457	(16, 1)
0.0	600.0	259.13739	(30, 1)	50.0	600.0	78.89480	(16, 1)
100.0	600.0	20.32610	(9, 1)	-100.0	700.0	20.92753	(9, 1)
-50.0	700.0	74.88788	(16, 1)	0.0	700.0	227.03883	(30, 1)
50.0	700.0	74.88807	(16, 1)	100.0	700.0	20.92758	(9, 1)
-100.0	800.0	20.49029	(16, 1)	-50.0	800.0	68.78529	(16, 1)
0.0	800.0	201.76492	(30, 1)	50.0	800.0	68.78544	(16, 1)
100.0	800.0	20.49039	(16, 1)	-100.0	900.0	23.43612	(16, 1)
-50.0	900.0	62.26714	(16, 1)	0.0	900.0	181.48329	(30, 1)
50.0	900.0	62.26727	(16, 1)	100.0	900.0	23.43621	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 100.72730 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	2.14492 (31, 1)	2.16666 (31, 1)	2.17396 (31, 1)	2.16667 (31, 1)	2.14492 (31, 1)
24000.0 /	2.24831 (31, 1)	2.27281 (31, 1)	2.28103 (31, 1)	2.27281 (31, 1)	2.24831 (31, 1)
23000.0 /	2.36121 (31, 1)	2.38895 (31, 1)	2.39827 (31, 1)	2.38895 (31, 1)	2.36121 (31, 1)
22000.0 /	2.48493 (31, 1)	2.51651 (31, 1)	2.52713 (31, 1)	2.51651 (31, 1)	2.48493 (31, 1)
21000.0 /	2.62103 (31, 1)	2.65721 (31, 1)	2.66938 (31, 1)	2.65721 (31, 1)	2.62103 (31, 1)
20000.0 /	2.77138 (31, 1)	2.81310 (31, 1)	2.82715 (31, 1)	2.81310 (31, 1)	2.77138 (31, 1)
19000.0 /	2.93823 (31, 1)	2.98669 (31, 1)	3.00302 (31, 1)	2.98669 (31, 1)	2.93823 (31, 1)
18000.0 /	3.12431 (31, 1)	3.18105 (31, 1)	3.20020 (31, 1)	3.18106 (31, 1)	3.12432 (31, 1)
17000.0 /	3.33297 (31, 1)	3.40001 (31, 1)	3.42265 (31, 1)	3.40001 (31, 1)	3.33298 (31, 1)
16000.0 /	3.56835 (31, 1)	3.64834 (31, 1)	3.67540 (31, 1)	3.64834 (31, 1)	3.56836 (31, 1)
15000.0 /	3.83561 (31, 1)	3.93213 (31, 1)	3.96484 (31, 1)	3.93214 (31, 1)	3.83562 (31, 1)
14000.0 /	4.16332 (31, 1)	4.28191 (31, 1)	4.32219 (31, 1)	4.28191 (31, 1)	4.16333 (31, 1)
13000.0 /	4.54314 (31, 1)	4.69104 (31, 1)	4.74140 (31, 1)	4.69104 (31, 1)	4.54315 (31, 1)
12000.0 /	4.98727 (31, 1)	5.17489 (31, 1)	5.23899 (31, 1)	5.17489 (31, 1)	4.98728 (31, 1)
11000.0 /	5.51179 (31, 1)	5.75461 (31, 1)	5.83790 (31, 1)	5.75461 (31, 1)	5.51180 (31, 1)
10000.0 /	6.13805 (31, 1)	6.45977 (31, 1)	6.57072 (31, 1)	6.45978 (31, 1)	6.13806 (31, 1)
9000.0 /	6.89452 (31, 1)	7.33291 (31, 1)	7.48515 (31, 1)	7.33292 (31, 1)	6.89454 (31, 1)
8000.0 /	7.81910 (31, 1)	8.43715 (31, 1)	8.65384 (31, 1)	8.43716 (31, 1)	7.81912 (31, 1)
7000.0 /	8.96089 (31, 1)	9.86963 (31, 1)	10.19259 (31, 1)	9.86965 (31, 1)	8.96091 (31, 1)
6000.0 /	10.43860 (31, 1)	11.85584 (31, 1)	12.36980 (31, 1)	11.85586 (31, 1)	10.43864 (31, 1)
5000.0 /	12.25893 (31, 1)	14.62653 (31, 1)	15.51331 (31, 1)	14.62656 (31, 1)	12.25898 (31, 1)
4000.0 /	15.11759 (25, 1)	18.66585 (31, 1)	20.38120 (31, 1)	18.66589 (31, 1)	15.11763 (25, 1)
3000.0 /	19.79933 (25, 1)	24.80013 (31, 1)	28.74572 (31, 1)	24.80020 (31, 1)	19.79939 (25, 1)
2000.0 /	24.36604 (30, 1)	37.10128 (25, 1)	46.55004 (31, 1)	37.10135 (25, 1)	24.36625 (30, 1)
1000.0 /	17.25390 (9, 1)	56.71533 (25, 1)	100.72730 (31, 1)	56.71552 (25, 1)	17.25393 (9, 1)

2ND HIGH
1-HR
SGROUP# 8

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 8,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.03100	(2, 1)
0.0	50.0	2492.84082	(9, 1)	50.0	50.0	1.03100	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.17389	(2, 1)
-50.0	100.0	31.15135	(2, 1)	0.0	100.0	950.34259	(33, 1)
50.0	100.0	31.14520	(2, 1)	100.0	100.0	0.17385	(2, 1)
-100.0	200.0	7.65556	(2, 1)	-50.0	200.0	65.81223	(1, 1)
0.0	200.0	504.60419	(31, 1)	50.0	200.0	65.81229	(1, 1)
100.0	200.0	7.65504	(2, 1)	-100.0	300.0	16.23016	(4, 1)
-50.0	300.0	64.03009	(4, 1)	0.0	300.0	381.91287	(16, 1)
50.0	300.0	64.03015	(4, 1)	100.0	300.0	16.23018	(4, 1)
-100.0	400.0	14.89144	(1, 1)	-50.0	400.0	64.07466	(16, 1)
0.0	400.0	274.88632	(31, 1)	50.0	400.0	64.07491	(16, 1)
100.0	400.0	14.89146	(1, 1)	-100.0	500.0	17.20761	(9, 1)
-50.0	500.0	59.87302	(9, 1)	0.0	500.0	215.30670	(31, 1)
50.0	500.0	59.87310	(9, 1)	100.0	500.0	17.20766	(9, 1)
-100.0	600.0	16.94582	(4, 1)	-50.0	600.0	49.69273	(9, 1)
0.0	600.0	175.43416	(31, 1)	50.0	600.0	49.69279	(9, 1)
100.0	600.0	16.94584	(4, 1)	-100.0	700.0	15.97880	(16, 1)
-50.0	700.0	51.01429	(25, 1)	0.0	700.0	147.70050	(31, 1)
50.0	700.0	51.01451	(25, 1)	100.0	700.0	15.97888	(16, 1)
-100.0	800.0	20.17067	(9, 1)	-50.0	800.0	55.19242	(25, 1)
0.0	800.0	127.92307	(31, 1)	50.0	800.0	55.19264	(25, 1)
100.0	800.0	20.17071	(9, 1)	-100.0	900.0	18.80983	(9, 1)
-50.0	900.0	56.81746	(25, 1)	0.0	900.0	112.76451	(31, 1)
50.0	900.0	56.81767	(25, 1)	100.0	900.0	18.80987	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 53.44487 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	3.79099 (30, 1)	3.82941 (30, 1)	3.84231 (30, 1)	3.82942 (30, 1)	3.79100 (30, 1)
24000.0 /	3.96114 (30, 1)	4.00429 (30, 1)	4.01878 (30, 1)	4.00429 (30, 1)	3.96114 (30, 1)
23000.0 /	4.14597 (30, 1)	4.19466 (30, 1)	4.21102 (30, 1)	4.19466 (30, 1)	4.14597 (30, 1)
22000.0 /	4.34738 (30, 1)	4.40262 (30, 1)	4.42119 (30, 1)	4.40262 (30, 1)	4.34738 (30, 1)
21000.0 /	4.56762 (30, 1)	4.63065 (30, 1)	4.65186 (30, 1)	4.63066 (30, 1)	4.56763 (30, 1)
20000.0 /	4.80935 (30, 1)	4.88172 (30, 1)	4.90609 (30, 1)	4.88173 (30, 1)	4.80935 (30, 1)
19000.0 /	5.07572 (30, 1)	5.15940 (30, 1)	5.18760 (30, 1)	5.15941 (30, 1)	5.07573 (30, 1)
18000.0 /	5.37052 (30, 1)	5.46802 (30, 1)	5.50091 (30, 1)	5.46802 (30, 1)	5.37053 (30, 1)
17000.0 /	5.69833 (30, 1)	5.81289 (30, 1)	5.85158 (30, 1)	5.81289 (30, 1)	5.69834 (30, 1)
16000.0 /	6.06471 (30, 1)	6.20058 (30, 1)	6.24655 (30, 1)	6.20059 (30, 1)	6.06472 (30, 1)
15000.0 /	6.47647 (30, 1)	6.63935 (30, 1)	6.69455 (30, 1)	6.63935 (30, 1)	6.47648 (30, 1)
14000.0 /	6.96510 (30, 1)	7.16336 (30, 1)	7.23070 (30, 1)	7.16337 (30, 1)	6.96511 (30, 1)
13000.0 /	7.52146 (30, 1)	7.76612 (30, 1)	7.84943 (30, 1)	7.76613 (30, 1)	7.52147 (30, 1)
12000.0 /	8.15888 (30, 1)	8.46556 (30, 1)	8.57032 (30, 1)	8.46556 (30, 1)	8.15890 (30, 1)
11000.0 /	8.89401 (30, 1)	9.28544 (30, 1)	9.41971 (30, 1)	9.28545 (30, 1)	8.89403 (30, 1)
10000.0 /	9.74734 (30, 1)	10.25762 (30, 1)	10.43359 (30, 1)	10.25764 (30, 1)	9.74736 (30, 1)
9000.0 /	10.74347 (30, 1)	11.42560 (30, 1)	11.66247 (30, 1)	11.42561 (30, 1)	10.74350 (30, 1)
8000.0 /	11.91021 (30, 1)	12.84991 (30, 1)	13.17935 (30, 1)	12.84993 (30, 1)	11.91024 (30, 1)
7000.0 /	13.27349 (30, 1)	14.61644 (30, 1)	15.09363 (30, 1)	14.61646 (30, 1)	13.27353 (30, 1)
6000.0 /	14.86127 (30, 1)	16.87266 (30, 1)	17.60191 (30, 1)	16.87269 (30, 1)	14.86132 (30, 1)
5000.0 /	16.56466 (30, 1)	19.74965 (30, 1)	20.94202 (30, 1)	19.74969 (30, 1)	16.56473 (30, 1)
4000.0 /	18.02909 (30, 1)	23.43281 (30, 1)	25.57259 (30, 1)	23.43286 (30, 1)	18.02918 (30, 1)
3000.0 /	18.02780 (30, 1)	27.94780 (30, 1)	32.34568 (30, 1)	27.94788 (30, 1)	18.02791 (30, 1)
2000.0 /	15.23683 (25, 1)	31.28934 (30, 1)	42.26247 (30, 1)	31.28948 (30, 1)	15.23689 (25, 1)
1000.0 /	13.40361 (9, 1)	24.55954 (16, 1)	53.44487 (30, 1)	24.55958 (16, 1)	13.40363 (9, 1)

HIGH
1-HR
SGROUP# 9

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.19687	(2, 1)
0.0	50.0	2451.60815	(32, 1)	50.0	50.0	1.19687	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.13041	(2, 1)
-50.0	100.0	18.49076	(2, 1)	0.0	100.0	819.46350	(33, 1)
50.0	100.0	18.49097	(2, 1)	100.0	100.0	0.13042	(2, 1)
-100.0	200.0	7.17476	(1, 1)	-50.0	200.0	29.69185	(1, 1)
0.0	200.0	171.26443	(18, 1)	50.0	200.0	29.69187	(1, 1)
100.0	200.0	7.17504	(1, 1)	-100.0	300.0	13.52866	(1, 1)
-50.0	300.0	28.48544	(4, 1)	0.0	300.0	107.15221	(18, 1)
50.0	300.0	28.48547	(4, 1)	100.0	300.0	13.52867	(1, 1)
-100.0	400.0	12.72954	(4, 1)	-50.0	400.0	28.10849	(4, 1)
0.0	400.0	78.25760	(17, 1)	50.0	400.0	28.10851	(4, 1)
100.0	400.0	12.72956	(4, 1)	-100.0	500.0	14.16351	(4, 1)
-50.0	500.0	27.82360	(9, 1)	0.0	500.0	65.06631	(17, 1)
50.0	500.0	27.82364	(9, 1)	100.0	500.0	14.16353	(4, 1)
-100.0	600.0	13.49467	(4, 1)	-50.0	600.0	28.09994	(17, 1)
0.0	600.0	56.48901	(31, 1)	50.0	600.0	28.10002	(17, 1)
100.0	600.0	13.49469	(4, 1)	-100.0	700.0	13.41592	(9, 1)
-50.0	700.0	28.14842	(17, 1)	0.0	700.0	54.44225	(31, 1)
50.0	700.0	28.14849	(17, 1)	100.0	700.0	13.41595	(9, 1)
-100.0	800.0	14.04183	(9, 1)	-50.0	800.0	26.99003	(17, 1)
0.0	800.0	54.31129	(30, 1)	50.0	800.0	26.99010	(17, 1)
100.0	800.0	14.04186	(9, 1)	-100.0	900.0	13.93305	(9, 1)
-50.0	900.0	25.28485	(17, 1)	0.0	900.0	53.99695	(30, 1)
50.0	900.0	25.28490	(17, 1)	100.0	900.0	13.93307	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 46.88168 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	2.00629 (31, 1)	2.02662 (31, 1)	2.03345 (31, 1)	2.02662 (31, 1)	2.00629 (31, 1)
24000.0 /	2.09936 (31, 1)	2.12223 (31, 1)	2.12991 (31, 1)	2.12223 (31, 1)	2.09936 (31, 1)
23000.0 /	2.20070 (31, 1)	2.22656 (31, 1)	2.23524 (31, 1)	2.22656 (31, 1)	2.20071 (31, 1)
22000.0 /	2.31143 (31, 1)	2.34080 (31, 1)	2.35068 (31, 1)	2.34081 (31, 1)	2.31143 (31, 1)
21000.0 /	2.43284 (31, 1)	2.46641 (31, 1)	2.47771 (31, 1)	2.46642 (31, 1)	2.43284 (31, 1)
20000.0 /	2.56648 (31, 1)	2.60512 (31, 1)	2.61812 (31, 1)	2.60512 (31, 1)	2.56649 (31, 1)
19000.0 /	2.71423 (31, 1)	2.75899 (31, 1)	2.77408 (31, 1)	2.75899 (31, 1)	2.71424 (31, 1)
18000.0 /	2.87833 (31, 1)	2.93059 (31, 1)	2.94823 (31, 1)	2.93060 (31, 1)	2.87834 (31, 1)
17000.0 /	3.06150 (31, 1)	3.12306 (31, 1)	3.14385 (31, 1)	3.12306 (31, 1)	3.06151 (31, 1)
16000.0 /	3.26709 (31, 1)	3.34030 (31, 1)	3.36507 (31, 1)	3.34031 (31, 1)	3.26710 (31, 1)
15000.0 /	3.49923 (31, 1)	3.58726 (31, 1)	3.61709 (31, 1)	3.58726 (31, 1)	3.49924 (31, 1)
14000.0 /	3.77898 (31, 1)	3.88658 (31, 1)	3.92313 (31, 1)	3.88658 (31, 1)	3.77898 (31, 1)
13000.0 /	4.10011 (31, 1)	4.23353 (31, 1)	4.27896 (31, 1)	4.23353 (31, 1)	4.10012 (31, 1)
12000.0 /	4.47151 (31, 1)	4.63965 (31, 1)	4.69709 (31, 1)	4.63965 (31, 1)	4.47152 (31, 1)
11000.0 /	4.90454 (31, 1)	5.12048 (31, 1)	5.19456 (31, 1)	5.12049 (31, 1)	4.90455 (31, 1)
10000.0 /	5.41376 (31, 1)	5.69733 (31, 1)	5.79512 (31, 1)	5.69733 (31, 1)	5.41377 (31, 1)
9000.0 /	6.01765 (31, 1)	6.39997 (31, 1)	6.53274 (31, 1)	6.39998 (31, 1)	6.01767 (31, 1)
8000.0 /	6.73905 (31, 1)	7.27119 (31, 1)	7.45775 (31, 1)	7.27120 (31, 1)	6.73907 (31, 1)
7000.0 /	7.60399 (31, 1)	8.37412 (31, 1)	8.64779 (31, 1)	8.37414 (31, 1)	7.60402 (31, 1)
6000.0 /	8.66375 (31, 1)	9.83796 (31, 1)	10.26373 (31, 1)	9.83798 (31, 1)	8.66378 (31, 1)
5000.0 /	9.88012 (31, 1)	11.78355 (31, 1)	12.49630 (31, 1)	11.78358 (31, 1)	9.88016 (31, 1)
4000.0 /	11.79212 (25, 1)	14.42975 (31, 1)	15.75111 (31, 1)	14.42978 (31, 1)	11.79214 (25, 1)
3000.0 /	14.21930 (25, 1)	18.02348 (31, 1)	20.87339 (31, 1)	18.02354 (31, 1)	14.21933 (25, 1)
2000.0 /	13.36530 (16, 1)	22.79857 (25, 1)	29.84154 (31, 1)	22.79861 (25, 1)	13.36532 (16, 1)
1000.0 /	11.27074 (16, 1)	23.39955 (17, 1)	46.88168 (31, 1)	23.39959 (17, 1)	11.27078 (16, 1)

2ND HIGH
1-HR
SGROUP# 9

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 9,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.18795	(1, 1)
0.0	50.0	1990.67847	(33, 1)	50.0	50.0	1.18795	(1, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.12297	(1, 1)
-50.0	100.0	17.00077	(3, 1)	0.0	100.0	589.02332	(29, 1)
50.0	100.0	16.99841	(3, 1)	100.0	100.0	0.12304	(1, 1)
-100.0	200.0	6.30396	(2, 1)	-50.0	200.0	27.70764	(2, 1)
0.0	200.0	162.31786	(19, 1)	50.0	200.0	27.70766	(2, 1)
100.0	200.0	6.30372	(2, 1)	-100.0	300.0	8.87990	(2, 1)
-50.0	300.0	27.47493	(1, 1)	0.0	300.0	96.27184	(17, 1)
50.0	300.0	27.47494	(1, 1)	100.0	300.0	8.87991	(2, 1)
-100.0	400.0	12.61960	(1, 1)	-50.0	400.0	27.63095	(10, 1)
0.0	400.0	77.50458	(18, 1)	50.0	400.0	27.63100	(10, 1)
100.0	400.0	12.61961	(1, 1)	-100.0	500.0	9.38076	(1, 1)
-50.0	500.0	25.77463	(17, 1)	0.0	500.0	59.59988	(18, 1)
50.0	500.0	25.77471	(17, 1)	100.0	500.0	9.38077	(1, 1)
-100.0	600.0	11.66048	(9, 1)	-50.0	600.0	27.61133	(9, 1)
0.0	600.0	54.86630	(17, 1)	50.0	600.0	27.61137	(9, 1)
100.0	600.0	11.66051	(9, 1)	-100.0	700.0	12.07525	(4, 1)
-50.0	700.0	25.86642	(9, 1)	0.0	700.0	54.31125	(30, 1)
50.0	700.0	25.86645	(9, 1)	100.0	700.0	12.07526	(4, 1)
-100.0	800.0	10.54061	(4, 1)	-50.0	800.0	23.56524	(9, 1)
0.0	800.0	51.78835	(31, 1)	50.0	800.0	23.56526	(9, 1)
100.0	800.0	10.54062	(4, 1)	-100.0	900.0	9.60159	(17, 1)
-50.0	900.0	24.35499	(16, 1)	0.0	900.0	49.25960	(31, 1)
50.0	900.0	24.35504	(16, 1)	100.0	900.0	9.60163	(17, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 4603.09619 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	144.23282 (30, 1)	145.66747 (30, 1)	146.14886 (30, 1)	145.66754 (30, 1)	144.23299 (30, 1)
24000.0 /	151.08644 (30, 1)	152.70044 (30, 1)	153.24229 (30, 1)	152.70053 (30, 1)	151.08662 (30, 1)
23000.0 /	158.56168 (30, 1)	160.38647 (30, 1)	160.99942 (30, 1)	160.38657 (30, 1)	158.56186 (30, 1)
22000.0 /	166.74335 (30, 1)	168.81760 (30, 1)	169.51477 (30, 1)	168.81770 (30, 1)	166.74356 (30, 1)
21000.0 /	175.73206 (30, 1)	178.10371 (30, 1)	178.90140 (30, 1)	178.10382 (30, 1)	175.73227 (30, 1)
20000.0 /	185.64777 (30, 1)	188.37697 (30, 1)	189.29564 (30, 1)	188.37711 (30, 1)	185.64801 (30, 1)
19000.0 /	196.63464 (30, 1)	199.79758 (30, 1)	200.86319 (30, 1)	199.79770 (30, 1)	196.63492 (30, 1)
18000.0 /	208.86737 (30, 1)	212.56163 (30, 1)	213.80756 (30, 1)	212.56180 (30, 1)	208.86768 (30, 1)
17000.0 /	222.55933 (30, 1)	226.91168 (30, 1)	228.38135 (30, 1)	226.91187 (30, 1)	222.55966 (30, 1)
16000.0 /	237.97340 (30, 1)	243.15088 (30, 1)	244.90170 (30, 1)	243.15109 (30, 1)	237.97379 (30, 1)
15000.0 /	255.09952 (30, 1)	261.31747 (30, 1)	263.42371 (30, 1)	261.31769 (30, 1)	255.09991 (30, 1)
14000.0 /	276.02948 (30, 1)	283.62790 (30, 1)	286.20700 (30, 1)	283.62814 (30, 1)	276.02994 (30, 1)
13000.0 /	300.54776 (30, 1)	309.97751 (30, 1)	313.18616 (30, 1)	309.97778 (30, 1)	300.54831 (30, 1)
12000.0 /	329.10361 (30, 1)	340.99915 (30, 1)	345.05923 (30, 1)	340.99948 (30, 1)	329.10425 (30, 1)
11000.0 /	362.67892 (30, 1)	377.97278 (30, 1)	383.21289 (30, 1)	377.97321 (30, 1)	362.67969 (30, 1)
10000.0 /	402.56561 (30, 1)	422.67188 (30, 1)	429.59491 (30, 1)	422.67233 (30, 1)	402.56653 (30, 1)
9000.0 /	450.47385 (30, 1)	477.61670 (30, 1)	487.02332 (30, 1)	477.61731 (30, 1)	450.47495 (30, 1)
8000.0 /	508.66241 (30, 1)	546.49530 (30, 1)	559.72205 (30, 1)	546.49603 (30, 1)	508.66373 (30, 1)
7000.0 /	579.28320 (30, 1)	634.05432 (30, 1)	653.43982 (30, 1)	634.05518 (30, 1)	579.28491 (30, 1)
6000.0 /	668.35754 (30, 1)	751.90833 (30, 1)	782.02039 (30, 1)	751.90948 (30, 1)	668.35974 (30, 1)
5000.0 /	779.65765 (30, 1)	915.79602 (30, 1)	966.27289 (30, 1)	915.79761 (30, 1)	779.66046 (30, 1)
4000.0 /	908.06958 (30, 1)	1148.72913 (30, 1)	1242.39270 (30, 1)	1148.73145 (30, 1)	908.07336 (30, 1)
3000.0 /	1019.29602 (30, 1)	1491.51733 (30, 1)	1693.45752 (30, 1)	1491.52100 (30, 1)	1019.30103 (30, 1)
2000.0 /	1042.73169 (25, 1)	1982.48535 (30, 1)	2536.72217 (30, 1)	1982.49121 (30, 1)	1042.73499 (25, 1)
1000.0 /	1022.49371 (16, 1)	2494.79834 (25, 1)	4603.09619 (30, 1)	2494.80371 (25, 1)	1022.49670 (16, 1)

HIGH
1-HR
SGROUP# 1(

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	185.67094	(1, 1)	0.0	100.0	731.11090	(16, 1)
50.0	100.0	185.67104	(1, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	98.39196	(1, 1)	-50.0	200.0	552.76807	(4, 1)
0.0	200.0	1932.77295	(16, 1)	50.0	200.0	552.76849	(4, 1)
100.0	200.0	98.39209	(1, 1)	-100.0	300.0	261.39261	(1, 1)
-50.0	300.0	1554.13916	(4, 1)	0.0	300.0	6643.70020	(16, 1)
50.0	300.0	1554.14038	(4, 1)	100.0	300.0	261.39288	(1, 1)
-100.0	400.0	452.06458	(1, 1)	-50.0	400.0	2451.03809	(4, 1)
0.0	400.0	8888.57227	(16, 1)	50.0	400.0	2451.03979	(4, 1)
100.0	400.0	452.06500	(1, 1)	-100.0	500.0	742.65070	(4, 1)
-50.0	500.0	2651.41333	(9, 1)	0.0	500.0	7411.96582	(30, 1)
50.0	500.0	2651.41650	(9, 1)	100.0	500.0	742.65173	(4, 1)
-100.0	600.0	850.58484	(4, 1)	-50.0	600.0	2793.72900	(16, 1)
0.0	600.0	6608.05469	(30, 1)	50.0	600.0	2793.73364	(16, 1)
100.0	600.0	850.58582	(4, 1)	-100.0	700.0	869.98492	(9, 1)
-50.0	700.0	2795.84424	(16, 1)	0.0	700.0	5962.21680	(30, 1)
50.0	700.0	2795.84888	(16, 1)	100.0	700.0	869.98651	(9, 1)
-100.0	800.0	913.05994	(9, 1)	-50.0	800.0	2665.64429	(16, 1)
0.0	800.0	5431.13184	(30, 1)	50.0	800.0	2665.64868	(16, 1)
100.0	800.0	913.06152	(9, 1)	-100.0	900.0	930.23212	(16, 1)
-50.0	900.0	2552.04907	(25, 1)	0.0	900.0	4984.63037	(30, 1)
50.0	900.0	2552.05493	(25, 1)	100.0	900.0	930.23486	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 3795.74268 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	72.11641 (31, 1)	72.83373 (31, 1)	73.07443 (31, 1)	72.83377 (31, 1)	72.11649 (31, 1)
24000.0 /	75.54322 (31, 1)	76.35022 (31, 1)	76.62115 (31, 1)	76.35027 (31, 1)	75.54331 (31, 1)
23000.0 /	79.28084 (31, 1)	80.19324 (31, 1)	80.49971 (31, 1)	80.19328 (31, 1)	79.28093 (31, 1)
22000.0 /	83.37167 (31, 1)	84.40880 (31, 1)	84.75739 (31, 1)	84.40885 (31, 1)	83.37178 (31, 1)
21000.0 /	87.86603 (31, 1)	89.05186 (31, 1)	89.45070 (31, 1)	89.05191 (31, 1)	87.86613 (31, 1)
20000.0 /	92.82388 (31, 1)	94.18848 (31, 1)	94.64782 (31, 1)	94.18855 (31, 1)	92.82401 (31, 1)
19000.0 /	98.31732 (31, 1)	99.89879 (31, 1)	100.43159 (31, 1)	99.89885 (31, 1)	98.31746 (31, 1)
18000.0 /	104.43369 (31, 1)	106.28082 (31, 1)	106.90378 (31, 1)	106.28090 (31, 1)	104.43384 (31, 1)
17000.0 /	111.27966 (31, 1)	113.45584 (31, 1)	114.19067 (31, 1)	113.45593 (31, 1)	111.27983 (31, 1)
16000.0 /	118.98670 (31, 1)	121.57544 (31, 1)	122.45085 (31, 1)	121.57555 (31, 1)	118.98689 (31, 1)
15000.0 /	127.54976 (31, 1)	130.65874 (31, 1)	131.71185 (31, 1)	130.65884 (31, 1)	127.54996 (31, 1)
14000.0 /	138.01474 (31, 1)	141.81395 (31, 1)	143.10350 (31, 1)	141.81407 (31, 1)	138.01497 (31, 1)
13000.0 /	150.27388 (31, 1)	154.98875 (31, 1)	156.59308 (31, 1)	154.98889 (31, 1)	150.27415 (31, 1)
12000.0 /	164.55180 (31, 1)	170.49957 (31, 1)	172.52962 (31, 1)	170.49974 (31, 1)	164.55212 (31, 1)
11000.0 /	181.33946 (31, 1)	188.98639 (31, 1)	191.60645 (31, 1)	188.98660 (31, 1)	181.33984 (31, 1)
10000.0 /	204.37915 (25, 1)	211.33594 (31, 1)	214.79745 (31, 1)	211.33617 (31, 1)	204.37936 (25, 1)
9000.0 /	234.11835 (25, 1)	240.48608 (25, 1)	243.51166 (31, 1)	240.48621 (25, 1)	234.11859 (25, 1)
8000.0 /	272.10233 (25, 1)	281.24359 (25, 1)	284.35852 (25, 1)	281.24377 (25, 1)	272.10263 (25, 1)
7000.0 /	321.68454 (25, 1)	335.42831 (25, 1)	340.13898 (25, 1)	335.42853 (25, 1)	321.68497 (25, 1)
6000.0 /	388.29144 (25, 1)	410.21997 (25, 1)	417.80164 (25, 1)	410.22028 (25, 1)	388.29202 (25, 1)
5000.0 /	480.71848 (25, 1)	518.58112 (25, 1)	531.85431 (25, 1)	518.58154 (25, 1)	480.71930 (25, 1)
4000.0 /	610.86047 (25, 1)	683.52606 (25, 1)	709.62402 (25, 1)	683.52679 (25, 1)	610.86176 (25, 1)
3000.0 /	808.30383 (25, 1)	974.08801 (25, 1)	1036.61108 (25, 1)	974.08917 (25, 1)	808.30579 (25, 1)
2000.0 /	948.12646 (30, 1)	1523.72217 (25, 1)	1729.42920 (25, 1)	1523.72461 (25, 1)	948.13220 (30, 1)
1000.0 /	840.32672 (9, 1)	2307.12549 (16, 1)	3795.74268 (25, 1)	2307.12891 (16, 1)	840.32794 (9, 1)

2ND HIGH
1-HR
SGROUP# 1(

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 10, 17, -20,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.00000	(0, 0)
0.0	50.0	0.00000	(0, 0)	50.0	50.0	0.00000	(0, 0)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.00000	(0, 0)
-50.0	100.0	159.95245	(4, 1)	0.0	100.0	680.24164	(25, 1)
50.0	100.0	159.95264	(4, 1)	100.0	100.0	0.00000	(0, 0)
-100.0	200.0	54.59239	(4, 1)	-50.0	200.0	525.42151	(1, 1)
0.0	200.0	1849.83545	(25, 1)	50.0	200.0	525.42181	(1, 1)
100.0	200.0	54.59249	(4, 1)	-100.0	300.0	197.66733	(4, 1)
-50.0	300.0	1499.74426	(1, 1)	0.0	300.0	6287.18848	(25, 1)
50.0	300.0	1499.74512	(1, 1)	100.0	300.0	197.66759	(4, 1)
-100.0	400.0	435.12714	(4, 1)	-50.0	400.0	2324.09644	(9, 1)
0.0	400.0	8625.88770	(25, 1)	50.0	400.0	2324.09888	(9, 1)
100.0	400.0	435.12778	(4, 1)	-100.0	500.0	640.86761	(1, 1)
-50.0	500.0	2540.28198	(16, 1)	0.0	500.0	7194.31299	(25, 1)
50.0	500.0	2540.28662	(16, 1)	100.0	500.0	640.86816	(1, 1)
-100.0	600.0	724.31226	(9, 1)	-50.0	600.0	2458.18799	(9, 1)
0.0	600.0	6154.84082	(25, 1)	50.0	600.0	2458.19043	(9, 1)
100.0	600.0	724.31372	(9, 1)	-100.0	700.0	792.04272	(4, 1)
-50.0	700.0	2493.55176	(25, 1)	0.0	700.0	5359.97021	(25, 1)
50.0	700.0	2493.55762	(25, 1)	100.0	700.0	792.04346	(4, 1)
-100.0	800.0	788.31824	(16, 1)	-50.0	800.0	2562.98560	(25, 1)
0.0	800.0	4728.52881	(25, 1)	50.0	800.0	2562.99170	(25, 1)
100.0	800.0	788.32074	(16, 1)	-100.0	900.0	892.42261	(9, 1)
-50.0	900.0	2492.77173	(16, 1)	0.0	900.0	4215.99609	(25, 1)
50.0	900.0	2492.77539	(16, 1)	100.0	900.0	892.42395	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 321.51962 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	4.84514 (30, 1)	4.89426 (30, 1)	4.91074 (30, 1)	4.89426 (30, 1)	4.84515 (30, 1)
24000.0 /	5.08298 (30, 1)	5.13837 (30, 1)	5.15696 (30, 1)	5.13837 (30, 1)	5.08299 (30, 1)
23000.0 /	5.34304 (30, 1)	5.40582 (30, 1)	5.42691 (30, 1)	5.40582 (30, 1)	5.34305 (30, 1)
22000.0 /	5.62845 (30, 1)	5.70000 (30, 1)	5.72405 (30, 1)	5.70000 (30, 1)	5.62846 (30, 1)
21000.0 /	5.94292 (30, 1)	6.02496 (30, 1)	6.05256 (30, 1)	6.02497 (30, 1)	5.94292 (30, 1)
20000.0 /	6.29090 (30, 1)	6.38562 (30, 1)	6.41751 (30, 1)	6.38562 (30, 1)	6.29091 (30, 1)
19000.0 /	6.67780 (30, 1)	6.78794 (30, 1)	6.82506 (30, 1)	6.78795 (30, 1)	6.67781 (30, 1)
18000.0 /	7.11016 (30, 1)	7.23930 (30, 1)	7.28286 (30, 1)	7.23930 (30, 1)	7.11017 (30, 1)
17000.0 /	7.59605 (30, 1)	7.74884 (30, 1)	7.80045 (30, 1)	7.74885 (30, 1)	7.59607 (30, 1)
16000.0 /	8.14550 (30, 1)	8.32811 (30, 1)	8.38988 (30, 1)	8.32811 (30, 1)	8.14552 (30, 1)
15000.0 /	8.77107 (30, 1)	8.99181 (30, 1)	9.06662 (30, 1)	8.99181 (30, 1)	8.77108 (30, 1)
14000.0 /	9.54435 (30, 1)	9.81625 (30, 1)	9.90860 (30, 1)	9.81626 (30, 1)	9.54437 (30, 1)
13000.0 /	10.44478 (30, 1)	10.78484 (30, 1)	10.90064 (30, 1)	10.78485 (30, 1)	10.44480 (30, 1)
12000.0 /	11.50325 (30, 1)	11.93609 (30, 1)	12.08396 (30, 1)	11.93610 (30, 1)	11.50328 (30, 1)
11000.0 /	12.76112 (30, 1)	13.32342 (30, 1)	13.51631 (30, 1)	13.32343 (30, 1)	12.76115 (30, 1)
10000.0 /	14.27404 (30, 1)	15.02238 (30, 1)	15.28046 (30, 1)	15.02240 (30, 1)	14.27407 (30, 1)
9000.0 /	16.11782 (30, 1)	17.14297 (30, 1)	17.49898 (30, 1)	17.14299 (30, 1)	16.11786 (30, 1)
8000.0 /	18.39625 (30, 1)	19.85087 (30, 1)	20.36087 (30, 1)	19.85090 (30, 1)	18.39631 (30, 1)
7000.0 /	21.24998 (30, 1)	23.40597 (30, 1)	24.17220 (30, 1)	23.40600 (30, 1)	21.25005 (30, 1)
6000.0 /	25.03758 (30, 1)	28.43897 (30, 1)	29.67253 (30, 1)	28.43902 (30, 1)	25.03767 (30, 1)
5000.0 /	29.85591 (30, 1)	35.62704 (30, 1)	37.78881 (30, 1)	35.62711 (30, 1)	29.85604 (30, 1)
4000.0 /	35.68105 (30, 1)	46.46416 (30, 1)	50.73939 (30, 1)	46.46427 (30, 1)	35.68122 (30, 1)
3000.0 /	40.94310 (30, 1)	63.81438 (30, 1)	73.98862 (30, 1)	63.81458 (30, 1)	40.94336 (30, 1)
2000.0 /	37.36343 (30, 1)	94.21528 (30, 1)	128.23705 (30, 1)	94.21569 (30, 1)	37.36376 (30, 1)
1000.0 /	29.15644 (16, 1)	108.23864 (30, 1)	321.51962 (30, 1)	108.23948 (30, 1)	29.15655 (16, 1)

HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	1.74409	(1, 1)
0.0	50.0	727.02679	(1, 1)	50.0	50.0	1.74410	(1, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.39538	(1, 1)
-50.0	100.0	71.69135	(1, 1)	0.0	100.0	859.05817	(9, 1)
50.0	100.0	71.67713	(1, 1)	100.0	100.0	0.39530	(1, 1)
-100.0	200.0	17.09622	(1, 1)	-50.0	200.0	91.40515	(4, 1)
0.0	200.0	749.83929	(25, 1)	50.0	200.0	91.40529	(4, 1)
100.0	200.0	17.09498	(1, 1)	-100.0	300.0	21.38249	(1, 1)
-50.0	300.0	86.28401	(9, 1)	0.0	300.0	690.58661	(25, 1)
50.0	300.0	86.28421	(9, 1)	100.0	300.0	21.38251	(1, 1)
-100.0	400.0	23.61994	(4, 1)	-50.0	400.0	83.47633	(16, 1)
0.0	400.0	696.23999	(30, 1)	50.0	400.0	83.47666	(16, 1)
100.0	400.0	23.61998	(4, 1)	-100.0	500.0	21.97112	(4, 1)
-50.0	500.0	98.31222	(16, 1)	0.0	500.0	640.96350	(30, 1)
50.0	500.0	98.31252	(16, 1)	100.0	500.0	21.97115	(4, 1)
-100.0	600.0	23.20824	(9, 1)	-50.0	600.0	97.83079	(16, 1)
0.0	600.0	560.70905	(30, 1)	50.0	600.0	97.83108	(16, 1)
100.0	600.0	23.20831	(9, 1)	-100.0	700.0	23.66846	(9, 1)
-50.0	700.0	106.89282	(25, 1)	0.0	700.0	483.75983	(30, 1)
50.0	700.0	106.89330	(25, 1)	100.0	700.0	23.66851	(9, 1)
-100.0	800.0	24.39562	(16, 1)	-50.0	800.0	108.04681	(25, 1)
0.0	800.0	419.02484	(30, 1)	50.0	800.0	108.04723	(25, 1)
100.0	800.0	24.39573	(16, 1)	-100.0	900.0	27.57254	(16, 1)
-50.0	900.0	104.63944	(25, 1)	0.0	900.0	365.60510	(30, 1)
50.0	900.0	104.63983	(25, 1)	100.0	900.0	27.57265	(16, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 160.75981 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	2.42257 (31, 1)	2.44713 (31, 1)	2.45537 (31, 1)	2.44713 (31, 1)	2.42257 (31, 1)
24000.0 /	2.54149 (31, 1)	2.56918 (31, 1)	2.57848 (31, 1)	2.56919 (31, 1)	2.54149 (31, 1)
23000.0 /	2.67152 (31, 1)	2.70291 (31, 1)	2.71345 (31, 1)	2.70291 (31, 1)	2.67152 (31, 1)
22000.0 /	2.81422 (31, 1)	2.85000 (31, 1)	2.86202 (31, 1)	2.85000 (31, 1)	2.81423 (31, 1)
21000.0 /	2.97146 (31, 1)	3.01248 (31, 1)	3.02628 (31, 1)	3.01248 (31, 1)	2.97146 (31, 1)
20000.0 /	3.14545 (31, 1)	3.19281 (31, 1)	3.20875 (31, 1)	3.19281 (31, 1)	3.14546 (31, 1)
19000.0 /	3.33890 (31, 1)	3.39397 (31, 1)	3.41253 (31, 1)	3.39397 (31, 1)	3.33890 (31, 1)
18000.0 /	3.55508 (31, 1)	3.61965 (31, 1)	3.64143 (31, 1)	3.61965 (31, 1)	3.55508 (31, 1)
17000.0 /	3.79803 (31, 1)	3.87442 (31, 1)	3.90023 (31, 1)	3.87442 (31, 1)	3.79803 (31, 1)
16000.0 /	4.07275 (31, 1)	4.16405 (31, 1)	4.19494 (31, 1)	4.16406 (31, 1)	4.07276 (31, 1)
15000.0 /	4.38553 (31, 1)	4.49590 (31, 1)	4.53331 (31, 1)	4.49591 (31, 1)	4.38554 (31, 1)
14000.0 /	4.77217 (31, 1)	4.90812 (31, 1)	4.95430 (31, 1)	4.90813 (31, 1)	4.77218 (31, 1)
13000.0 /	5.22239 (31, 1)	5.39242 (31, 1)	5.45032 (31, 1)	5.39243 (31, 1)	5.22240 (31, 1)
12000.0 /	5.75163 (31, 1)	5.96804 (31, 1)	6.04198 (31, 1)	5.96805 (31, 1)	5.75164 (31, 1)
11000.0 /	6.38056 (31, 1)	6.66171 (31, 1)	6.75815 (31, 1)	6.66172 (31, 1)	6.38057 (31, 1)
10000.0 /	7.13702 (31, 1)	7.51119 (31, 1)	7.64023 (31, 1)	7.51120 (31, 1)	7.13704 (31, 1)
9000.0 /	8.05891 (31, 1)	8.57148 (31, 1)	8.74949 (31, 1)	8.57149 (31, 1)	8.05893 (31, 1)
8000.0 /	9.19813 (31, 1)	9.92544 (31, 1)	10.18044 (31, 1)	9.92545 (31, 1)	9.19815 (31, 1)
7000.0 /	10.62499 (31, 1)	11.70298 (31, 1)	12.08610 (31, 1)	11.70300 (31, 1)	10.62502 (31, 1)
6000.0 /	12.51879 (31, 1)	14.21948 (31, 1)	14.83626 (31, 1)	14.21951 (31, 1)	12.51884 (31, 1)
5000.0 /	14.92796 (31, 1)	17.81352 (31, 1)	18.89440 (31, 1)	17.81356 (31, 1)	14.92802 (31, 1)
4000.0 /	18.49187 (25, 1)	23.23208 (31, 1)	25.36970 (31, 1)	23.23214 (31, 1)	18.49191 (25, 1)
3000.0 /	25.21121 (25, 1)	31.90719 (31, 1)	36.99431 (31, 1)	31.90729 (31, 1)	25.21128 (25, 1)
2000.0 /	33.97329 (25, 1)	51.16428 (25, 1)	64.11852 (31, 1)	51.16438 (25, 1)	33.97342 (25, 1)
1000.0 /	23.33709 (25, 1)	99.01598 (25, 1)	160.75981 (31, 1)	99.01631 (25, 1)	23.33724 (25, 1)

2ND HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 11,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	0.87205	(2, 1)
0.0	50.0	684.74896	(4, 1)	50.0	50.0	0.87205	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	0.19769	(2, 1)
-50.0	100.0	35.84568	(2, 1)	0.0	100.0	616.65424	(4, 1)
50.0	100.0	35.83857	(2, 1)	100.0	100.0	0.19765	(2, 1)
-100.0	200.0	8.54811	(2, 1)	-50.0	200.0	76.75468	(1, 1)
0.0	200.0	743.57355	(16, 1)	50.0	200.0	76.75473	(1, 1)
100.0	200.0	8.54749	(2, 1)	-100.0	300.0	18.87013	(4, 1)
-50.0	300.0	74.71481	(4, 1)	0.0	300.0	640.43237	(30, 1)
50.0	300.0	74.71488	(4, 1)	100.0	300.0	18.87016	(4, 1)
-100.0	400.0	16.48533	(1, 1)	-50.0	400.0	82.77048	(9, 1)
0.0	400.0	538.38446	(25, 1)	50.0	400.0	82.77062	(9, 1)
100.0	400.0	16.48534	(1, 1)	-100.0	500.0	19.92346	(9, 1)
-50.0	500.0	75.54939	(25, 1)	0.0	500.0	418.81644	(25, 1)
50.0	500.0	75.54983	(25, 1)	100.0	500.0	19.92352	(9, 1)
-100.0	600.0	18.84398	(4, 1)	-50.0	600.0	97.50517	(25, 1)
0.0	600.0	332.25809	(25, 1)	50.0	600.0	97.50568	(25, 1)
100.0	600.0	18.84400	(4, 1)	-100.0	700.0	19.30298	(16, 1)
-50.0	700.0	90.93816	(16, 1)	0.0	700.0	269.43289	(25, 1)
50.0	700.0	90.93839	(16, 1)	100.0	700.0	19.30308	(16, 1)
-100.0	800.0	22.65989	(9, 1)	-50.0	800.0	82.15688	(16, 1)
0.0	800.0	222.89825	(25, 1)	50.0	800.0	82.15706	(16, 1)
100.0	800.0	22.65993	(9, 1)	-100.0	900.0	21.02827	(9, 1)
-50.0	900.0	97.69089	(30, 1)	0.0	900.0	187.62512	(25, 1)
50.0	900.0	97.69171	(30, 1)	100.0	900.0	21.02831	(9, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 197.91368 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	85.97548 (30, 1)	86.84358 (30, 1)	87.13491 (30, 1)	86.84363 (30, 1)	85.97558 (30, 1)
24000.0 /	86.92712 (30, 1)	87.87025 (30, 1)	88.18690 (30, 1)	87.87030 (30, 1)	86.92722 (30, 1)
23000.0 /	87.88090 (30, 1)	88.90863 (30, 1)	89.25389 (30, 1)	88.90868 (30, 1)	87.88100 (30, 1)
22000.0 /	88.83333 (30, 1)	89.95692 (30, 1)	90.33463 (30, 1)	89.95698 (30, 1)	88.83344 (30, 1)
21000.0 /	89.78010 (30, 1)	91.01285 (30, 1)	91.42754 (30, 1)	91.01291 (30, 1)	89.78022 (30, 1)
20000.0 /	92.19762 (25, 1)	92.80822 (25, 1)	93.01266 (25, 1)	92.80825 (25, 1)	92.19768 (25, 1)
19000.0 /	94.41190 (25, 1)	95.09638 (25, 1)	95.32565 (25, 1)	95.09641 (25, 1)	94.41196 (25, 1)
18000.0 /	96.64135 (25, 1)	97.41216 (25, 1)	97.67048 (25, 1)	97.41220 (25, 1)	96.64142 (25, 1)
17000.0 /	98.86644 (25, 1)	99.73880 (25, 1)	100.03130 (25, 1)	99.73883 (25, 1)	98.86651 (25, 1)
16000.0 /	101.06093 (25, 1)	102.05354 (25, 1)	102.38659 (25, 1)	102.05358 (25, 1)	101.06100 (25, 1)
15000.0 /	103.18948 (25, 1)	104.32564 (25, 1)	104.70714 (25, 1)	104.32568 (25, 1)	103.18957 (25, 1)
14000.0 /	105.20489 (25, 1)	106.51379 (25, 1)	106.95371 (25, 1)	106.51383 (25, 1)	105.20497 (25, 1)
13000.0 /	107.04393 (25, 1)	108.56270 (25, 1)	109.07375 (25, 1)	108.56275 (25, 1)	107.04402 (25, 1)
12000.0 /	108.62212 (25, 1)	110.39849 (25, 1)	110.99706 (25, 1)	110.39854 (25, 1)	108.62222 (25, 1)
11000.0 /	109.82607 (25, 1)	111.92230 (25, 1)	112.62992 (25, 1)	111.92236 (25, 1)	109.82617 (25, 1)
10000.0 /	110.50703 (25, 1)	113.00578 (25, 1)	113.85121 (25, 1)	113.00584 (25, 1)	110.50716 (25, 1)
9000.0 /	109.63860 (25, 1)	112.62904 (25, 1)	113.64389 (25, 1)	112.62910 (25, 1)	109.63873 (25, 1)
8000.0 /	107.55151 (25, 1)	111.16995 (25, 1)	112.40298 (25, 1)	111.17002 (25, 1)	107.55165 (25, 1)
7000.0 /	103.85400 (25, 1)	108.28750 (25, 1)	109.80702 (25, 1)	108.28757 (25, 1)	103.85413 (25, 1)
6000.0 /	98.04724 (25, 1)	103.55846 (25, 1)	105.46356 (25, 1)	103.55854 (25, 1)	98.04739 (25, 1)
5000.0 /	93.44489 (26, 1)	100.83946 (26, 1)	103.43217 (26, 1)	100.83955 (26, 1)	93.44506 (26, 1)
4000.0 /	85.22557 (27, 1)	95.45441 (27, 1)	99.12994 (27, 1)	95.45451 (27, 1)	85.22575 (27, 1)
3000.0 /	73.00607 (6, 1)	85.03900 (28, 1)	90.54494 (28, 1)	85.03911 (28, 1)	73.00610 (6, 1)
2000.0 /	93.19466 (6, 1)	108.79891 (23, 1)	117.30735 (23, 1)	108.79903 (23, 1)	93.19470 (6, 1)
1000.0 /	127.76686 (3, 1)	152.30154 (24, 1)	197.91368 (24, 1)	152.30182 (24, 1)	127.76691 (3, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	2.25952	(30, 1)
0.0	50.0	6.61481	(30, 1)	50.0	50.0	2.25953	(30, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	1.89915	(25, 1)
-50.0	100.0	11.91097	(30, 1)	0.0	100.0	27.43307	(30, 1)
50.0	100.0	11.91098	(30, 1)	100.0	100.0	1.89918	(25, 1)
-100.0	200.0	2.19681	(25, 1)	-50.0	200.0	12.53181	(30, 1)
0.0	200.0	28.19645	(30, 1)	50.0	200.0	12.53182	(30, 1)
100.0	200.0	2.19682	(25, 1)	-100.0	300.0	2.67565	(25, 1)
-50.0	300.0	13.38825	(30, 1)	0.0	300.0	46.01089	(24, 1)
50.0	300.0	13.38828	(30, 1)	100.0	300.0	2.67566	(25, 1)
-100.0	400.0	4.57809	(3, 1)	-50.0	400.0	28.26655	(24, 1)
0.0	400.0	111.29813	(24, 1)	50.0	400.0	28.26665	(24, 1)
100.0	400.0	4.57809	(3, 1)	-100.0	500.0	36.34842	(3, 1)
-50.0	500.0	64.74715	(24, 1)	0.0	500.0	161.62210	(24, 1)
50.0	500.0	64.74734	(24, 1)	100.0	500.0	36.34845	(3, 1)
-100.0	600.0	100.19145	(3, 1)	-50.0	600.0	119.90628	(3, 1)
0.0	600.0	191.66087	(24, 1)	50.0	600.0	119.90631	(3, 1)
100.0	600.0	100.19151	(3, 1)	-100.0	700.0	138.83377	(3, 1)
-50.0	700.0	159.39455	(3, 1)	0.0	700.0	205.85823	(24, 1)
50.0	700.0	159.39458	(3, 1)	100.0	700.0	138.83383	(3, 1)
-100.0	800.0	143.72737	(3, 1)	-50.0	800.0	160.43352	(3, 1)
0.0	800.0	209.27173	(24, 1)	50.0	800.0	160.43356	(3, 1)
100.0	800.0	143.72743	(3, 1)	-100.0	900.0	136.04955	(3, 1)
-50.0	900.0	150.12157	(24, 1)	0.0	900.0	205.84291	(24, 1)
50.0	900.0	150.12187	(24, 1)	100.0	900.0	136.04961	(3, 1)

*** PGV SCENARIOS - W/O DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 12,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 159.75444 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	80.75407 (25, 1)	81.11515 (25, 1)	81.23588 (25, 1)	81.11517 (25, 1)	80.75410 (25, 1)
24000.0 /	82.84669 (25, 1)	83.24469 (25, 1)	83.37778 (25, 1)	83.24471 (25, 1)	82.84673 (25, 1)
23000.0 /	85.03292 (25, 1)	85.47318 (25, 1)	85.62045 (25, 1)	85.47321 (25, 1)	85.03297 (25, 1)
22000.0 /	87.31731 (25, 1)	87.80618 (25, 1)	87.96976 (25, 1)	87.80621 (25, 1)	87.31735 (25, 1)
21000.0 /	89.70416 (25, 1)	90.24930 (25, 1)	90.43176 (25, 1)	90.24932 (25, 1)	89.70422 (25, 1)
20000.0 /	90.71580 (30, 1)	92.07352 (30, 1)	92.53061 (30, 1)	92.07358 (30, 1)	90.71592 (30, 1)
19000.0 /	91.63362 (30, 1)	93.13528 (30, 1)	93.64131 (30, 1)	93.13535 (30, 1)	91.63376 (30, 1)
18000.0 /	92.52495 (30, 1)	94.19349 (30, 1)	94.75636 (30, 1)	94.19357 (30, 1)	92.52509 (30, 1)
17000.0 /	93.37881 (30, 1)	95.24221 (30, 1)	95.87160 (30, 1)	95.24229 (30, 1)	93.37895 (30, 1)
16000.0 /	94.18125 (30, 1)	96.27403 (30, 1)	96.98193 (30, 1)	96.27411 (30, 1)	94.18140 (30, 1)
15000.0 /	94.91418 (30, 1)	97.27934 (30, 1)	98.08079 (30, 1)	97.27943 (30, 1)	94.91434 (30, 1)
14000.0 /	94.27067 (30, 1)	96.92638 (30, 1)	97.82818 (30, 1)	96.92648 (30, 1)	94.27084 (30, 1)
13000.0 /	93.33968 (30, 1)	96.34003 (30, 1)	97.36146 (30, 1)	96.34013 (30, 1)	93.33985 (30, 1)
12000.0 /	92.32870 (31, 1)	95.77052 (31, 1)	96.94611 (31, 1)	95.77061 (31, 1)	92.32890 (31, 1)
11000.0 /	92.34281 (31, 1)	96.36761 (31, 1)	97.74786 (31, 1)	96.36771 (31, 1)	92.34301 (31, 1)
10000.0 /	94.31758 (26, 1)	96.62858 (31, 1)	98.26756 (31, 1)	96.62869 (31, 1)	94.31768 (26, 1)
9000.0 /	96.71469 (26, 1)	99.36781 (26, 1)	100.26828 (26, 1)	99.36787 (26, 1)	96.71481 (26, 1)
8000.0 /	98.40830 (26, 1)	101.74267 (26, 1)	102.87		

1 ISCST - (DATED 90346)

IBM-PC VERSION (2.04)
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SERIAL NUMBER 6688 SOLD TO ENVIRONMENTAL MANAGMENT ASSOCIATES
RUN BEGAN ON 12-09-91 AT 02:47:39

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*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) =	1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) =	3
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) =	1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) =	0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) =	0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) =	2
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)		
WITH THE FOLLOWING TIME PERIODS:		
HOURLY (YES=1,NO=0)	ISW(7) =	1
2-HOUR (YES=1,NO=0)	ISW(8) =	0
3-HOUR (YES=1,NO=0)	ISW(9) =	0
4-HOUR (YES=1,NO=0)	ISW(10) =	0
6-HOUR (YES=1,NO=0)	ISW(11) =	0
8-HOUR (YES=1,NO=0)	ISW(12) =	0
12-HOUR (YES=1,NO=0)	ISW(13) =	0
24-HOUR (YES=1,NO=0)	ISW(14) =	0
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) =	0
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE		
SPECIFIED BY ISW(7) THROUGH ISW(14):		
DAILY TABLES (YES=1,NO=0)	ISW(16) =	0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) =	1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) =	0
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) =	2
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) =	0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) =	1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) =	1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) =	0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) =	1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) =	1
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) =	1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) =	2
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) =	2
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) =	2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) =	2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) =	1
NUMBER OF INPUT SOURCES	NSOURC =	1
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP =	1
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD =	0
NUMBER OF X (RANGE) GRID VALUES	NXPNTS =	5
NUMBER OF Y (THETA) GRID VALUES	NYPNTS =	25
NUMBER OF DISCRETE RECEPTORS	NXWYPT =	50
NUMBER OF HOURS PER DAY IN METEOROLOGICAL DATA	NHOURS =	1
NUMBER OF DAYS OF METEOROLOGICAL DATA	NDAYS =	33
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =	.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR =	10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET =	7
ALLOCATED DATA STORAGE	LIMIT =	43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT =	1817 WORDS

1

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

0

*** NUMBER OF SOURCE NUMBERS REQUIRED TO DEFINE SOURCE GROUPS ***
(NSOGRP)

1,

0

*** SOURCE NUMBERS DEFINING SOURCE GROUPS ***
(IDSOR)

1,

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** X-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

-100.0, -50.0, 0.0, 50.0, 100.0,

*** Y-COORDINATES OF RECTANGULAR GRID SYSTEM ***
(METERS)

1000.0, 2000.0, 3000.0, 4000.0, 5000.0, 6000.0, 7000.0, 8000.0, 9000.0, 10000.0,
11000.0, 12000.0, 13000.0, 14000.0, 15000.0, 16000.0, 17000.0, 18000.0, 19000.0, 20000.0,
21000.0, 22000.0, 23000.0, 24000.0, 25000.0,

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*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

*** X,Y COORDINATES OF DISCRETE RECEPTORS ***
(METERS)

(	-100.0,	50.0),	(	-50.0,	50.0),	(	0.0,	50.0),	(	50.0,	50.0),	(	100.0,	50.0),
(	-100.0,	100.0),	(	-50.0,	100.0),	(	0.0,	100.0),	(	50.0,	100.0),	(	100.0,	100.0),
(	-100.0,	200.0),	(	-50.0,	200.0),	(	0.0,	200.0),	(	50.0,	200.0),	(	100.0,	200.0),
(	-100.0,	300.0),	(	-50.0,	300.0),	(	0.0,	300.0),	(	50.0,	300.0),	(	100.0,	300.0),
(	-100.0,	400.0),	(	-50.0,	400.0),	(	0.0,	400.0),	(	50.0,	400.0),	(	100.0,	400.0),
(	-100.0,	500.0),	(	-50.0,	500.0),	(	0.0,	500.0),	(	50.0,	500.0),	(	100.0,	500.0),
(	-100.0,	600.0),	(	-50.0,	600.0),	(	0.0,	600.0),	(	50.0,	600.0),	(	100.0,	600.0),
(	-100.0,	700.0),	(	-50.0,	700.0),	(	0.0,	700.0),	(	50.0,	700.0),	(	100.0,	700.0),
(	-100.0,	800.0),	(	-50.0,	800.0),	(	0.0,	800.0),	(	50.0,	800.0),	(	100.0,	800.0),
(	-100.0,	900.0),	(	-50.0,	900.0),	(	0.0,	900.0),	(	50.0,	900.0),	(	100.0,	900.0),

(

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*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
* FOR THE RECEPTOR GRID *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
24000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
23000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
22000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
21000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
20000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
19000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
18000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
17000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
16000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
15000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
14000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
13000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
12000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
11000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
10000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
9000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
8000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
7000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
6000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
5000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
4000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
3000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
2000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000
1000.0 /	10.00000	10.00000	10.00000	10.00000	10.00000

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*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* ABOVE GROUND RECEPTOR HEIGHTS IN METERS *
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	HGT.	- X -	- Y -	HGT.	- X -	- Y -	HGT.
-100.0	50.0	10.00000	-50.0	50.0	10.00000	0.0	50.0	10.00000
50.0	50.0	10.00000	100.0	50.0	10.00000	-100.0	100.0	10.00000
-50.0	100.0	10.00000	0.0	100.0	10.00000	50.0	100.0	10.00000
100.0	100.0	10.00000	-100.0	200.0	10.00000	-50.0	200.0	10.00000
0.0	200.0	10.00000	50.0	200.0	10.00000	100.0	200.0	10.00000
-100.0	300.0	10.00000	-50.0	300.0	10.00000	0.0	300.0	10.00000
50.0	300.0	10.00000	100.0	300.0	10.00000	-100.0	400.0	10.00000
-50.0	400.0	10.00000	0.0	400.0	10.00000	50.0	400.0	10.00000
100.0	400.0	10.00000	-100.0	500.0	10.00000	-50.0	500.0	10.00000
0.0	500.0	10.00000	50.0	500.0	10.00000	100.0	500.0	10.00000
-100.0	600.0	10.00000	-50.0	600.0	10.00000	0.0	600.0	10.00000
50.0	600.0	10.00000	100.0	600.0	10.00000	-100.0	700.0	10.00000
-50.0	700.0	10.00000	0.0	700.0	10.00000	50.0	700.0	10.00000
100.0	700.0	10.00000	-100.0	800.0	10.00000	-50.0	800.0	10.00000
0.0	800.0	10.00000	50.0	800.0	10.00000	100.0	800.0	10.00000
-100.0	900.0	10.00000	-50.0	900.0	10.00000	0.0	900.0	10.00000
50.0	900.0	10.00000	100.0	900.0	10.00000			

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

*** SOURCE DATA ***

SOURCE NUMBER	TYPE	WAKE	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	0.56447E+02	0.0	0.0	204.2	0.00	372.59	0.47	15.24	8.53	107.75	107.75

1

MET. DATA
DAY 1

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 1 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1

MET. DATA
DAY 2

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 2 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1

MET. DATA
DAY 3

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 3 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	300.0	0.0000	1	0.0700	0.000000E+00

1

MET. DATA
DAY 4

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 4 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1

MET. DATA
DAY 5

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 5 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 6

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 6 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 7

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 7 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 8

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 8 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	298.0	0.0000	2	0.0700	0.000000E+00

1 MET. DATA DAY 9

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 9 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 10

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 10 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 11

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 11 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 12

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 12 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 13

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 13 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 14

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 14 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	8.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 15

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 15 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	10.00	300.0	296.0	0.0000	3	0.1000	0.000000E+00

1 MET. DATA DAY 16

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 16 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 17

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 17 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 18

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 18 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 19

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 19 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 20

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 20 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 21

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 21 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	8.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 22

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 22 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	10.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 23

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 23 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	15.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 24

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 24 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	20.00	300.0	294.0	0.0000	4	0.1500	0.000000E+00

1 MET. DATA DAY 25

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 25 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 26

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 26 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 27

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 27 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 28

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 28 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 29

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 29 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	5.00	100.0	291.0	0.0200	5	0.3500	0.000000E+00

1 MET. DATA DAY 30

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 30 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	1.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1

MET. DATA
DAY 31

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 31 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	2.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1

MET. DATA
DAY 32

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 32 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	3.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

1

MET. DATA
DAY 33

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* METEOROLOGICAL DATA FOR DAY 33 *

HOUR	FLOW VECTOR (DEGREES)	WIND SPEED (MPS)	MIXING HEIGHT (METERS)	TEMP. (DEG. K)	POT. TEMP. GRADIENT (DEG. K PER METER)	STABILITY CATEGORY	WIND PROFILE EXPONENT	DECAY COEFFICIENT (PER SEC)
1	0.0	4.00	100.0	289.0	0.0350	6	0.5500	0.000000E+00

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 351.82184 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	163.13535 (30, 1)	164.77403 (30, 1)	165.32394 (30, 1)	164.77414 (30, 1)	163.13554 (30, 1)
24000.0 /	167.31874 (30, 1)	169.12444 (30, 1)	169.73068 (30, 1)	169.12453 (30, 1)	167.31894 (30, 1)
23000.0 /	171.70819 (30, 1)	173.70523 (30, 1)	174.37610 (30, 1)	173.70534 (30, 1)	171.70840 (30, 1)
22000.0 /	176.31728 (30, 1)	178.53477 (30, 1)	179.28015 (30, 1)	178.53488 (30, 1)	176.31750 (30, 1)
21000.0 /	181.16019 (30, 1)	183.63312 (30, 1)	184.46495 (30, 1)	183.63324 (30, 1)	181.16043 (30, 1)
20000.0 /	186.25171 (30, 1)	189.02246 (30, 1)	189.95522 (30, 1)	189.02260 (30, 1)	186.25195 (30, 1)
19000.0 /	191.60670 (30, 1)	194.72710 (30, 1)	195.77853 (30, 1)	194.72723 (30, 1)	191.60698 (30, 1)
18000.0 /	197.23981 (30, 1)	200.77376 (30, 1)	201.96581 (30, 1)	200.77391 (30, 1)	197.24010 (30, 1)
17000.0 /	203.16454 (30, 1)	207.19168 (30, 1)	208.55177 (30, 1)	207.19183 (30, 1)	203.16486 (30, 1)
16000.0 /	209.39200 (30, 1)	214.01266 (30, 1)	215.57550 (30, 1)	214.01285 (30, 1)	209.39233 (30, 1)
15000.0 /	215.92868 (30, 1)	221.27090 (30, 1)	223.08092 (30, 1)	221.27109 (30, 1)	215.92905 (30, 1)
14000.0 /	222.54478 (30, 1)	228.76772 (30, 1)	230.88054 (30, 1)	228.76793 (30, 1)	222.54518 (30, 1)
13000.0 /	227.96710 (30, 1)	235.23897 (30, 1)	237.71419 (30, 1)	235.23920 (30, 1)	227.96753 (30, 1)
12000.0 /	233.20695 (30, 1)	241.78520 (30, 1)	244.71425 (30, 1)	241.78545 (30, 1)	233.20743 (30, 1)
11000.0 /	238.09055 (30, 1)	248.31888 (30, 1)	251.82513 (30, 1)	248.31914 (30, 1)	238.09106 (30, 1)
10000.0 /	242.36154 (30, 1)	254.70779 (30, 1)	258.96155 (30, 1)	254.70810 (30, 1)	242.36211 (30, 1)
9000.0 /	245.63710 (30, 1)	260.75232 (30, 1)	265.99478 (30, 1)	260.75266 (30, 1)	245.63771 (30, 1)
8000.0 /	247.33638 (30, 1)	266.14954 (30, 1)	272.73349 (30, 1)	266.14990 (30, 1)	247.33707 (30, 1)
7000.0 /	246.55670 (30, 1)	270.43149 (30, 1)	278.89301 (30, 1)	270.43188 (30, 1)	246.55745 (30, 1)
6000.0 /	242.76991 (30, 1)	273.88931 (30, 1)	285.12506 (30, 1)	273.88977 (30, 1)	242.77074 (30, 1)
5000.0 /	240.00279 (25, 1)	269.32825 (30, 1)	284.53781 (30, 1)	269.32877 (30, 1)	240.00322 (25, 1)
4000.0 /	232.05525 (25, 1)	268.76773 (31, 1)	291.59854 (31, 1)	268.76834 (31, 1)	232.05574 (25, 1)
3000.0 /	205.03297 (25, 1)	261.05402 (32, 1)	298.45581 (32, 1)	261.05478 (32, 1)	205.03349 (25, 1)
2000.0 /	151.95013 (26, 1)	245.72246 (33, 1)	319.96616 (33, 1)	245.72337 (33, 1)	151.95067 (26, 1)
1000.0 /	155.52745 (2, 1)	271.33798 (22, 1)	351.82184 (22, 1)	271.33847 (22, 1)	155.52751 (2, 1)

HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	45.88901	(3, 1)
0.0	50.0	26070.85742	(21, 1)	50.0	50.0	45.88908	(3, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	5.62570	(1, 1)
-50.0	100.0	292.36313	(3, 1)	0.0	100.0	9339.83398	(22, 1)
50.0	100.0	292.53482	(3, 1)	100.0	100.0	5.62822	(1, 1)
-100.0	200.0	94.75876	(3, 1)	-50.0	200.0	454.87006	(8, 1)
0.0	200.0	3145.88477	(22, 1)	50.0	200.0	454.87067	(8, 1)
100.0	200.0	94.77141	(3, 1)	-100.0	300.0	174.47876	(3, 1)
-50.0	300.0	415.12042	(15, 1)	0.0	300.0	1696.05713	(23, 1)
50.0	300.0	415.12131	(15, 1)	100.0	300.0	174.47890	(3, 1)
-100.0	400.0	197.15724	(3, 1)	-50.0	400.0	397.11081	(15, 1)
0.0	400.0	1086.02136	(23, 1)	50.0	400.0	397.11145	(15, 1)
100.0	400.0	197.15741	(3, 1)	-100.0	500.0	169.86418	(2, 1)
-50.0	500.0	341.00674	(15, 1)	0.0	500.0	764.71930	(23, 1)
50.0	500.0	341.00720	(15, 1)	100.0	500.0	169.86427	(2, 1)
-100.0	600.0	183.04256	(2, 1)	-50.0	600.0	298.20981	(23, 1)
0.0	600.0	574.94092	(23, 1)	50.0	600.0	298.21066	(23, 1)
100.0	600.0	183.04265	(2, 1)	-100.0	700.0	187.04300	(2, 1)
-50.0	700.0	302.38586	(23, 1)	0.0	700.0	498.52585	(23, 1)
50.0	700.0	302.38660	(23, 1)	100.0	700.0	187.04308	(2, 1)
-100.0	800.0	177.50082	(2, 1)	-50.0	800.0	293.87811	(23, 1)
0.0	800.0	435.90417	(23, 1)	50.0	800.0	293.87872	(23, 1)
100.0	800.0	177.50090	(2, 1)	-100.0	900.0	166.06297	(2, 1)
-50.0	900.0	283.48312	(23, 1)	0.0	900.0	390.17676	(23, 1)
50.0	900.0	283.48367	(23, 1)	100.0	900.0	166.06305	(2, 1)

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 348.84018 AND OCCURRED AT (0.0, 1000.0) *

Y-AXIS / (METERS) /	X-AXIS (METERS) -100.0	-50.0	0.0	50.0	100.0
25000.0 /	113.82961 (31, 1)	114.97387 (31, 1)	115.35787 (31, 1)	114.97394 (31, 1)	113.82973 (31, 1)
24000.0 /	117.53057 (31, 1)	118.79997 (31, 1)	119.22617 (31, 1)	118.80004 (31, 1)	117.53071 (31, 1)
23000.0 /	121.46673 (31, 1)	122.88067 (31, 1)	123.35566 (31, 1)	122.88074 (31, 1)	121.46687 (31, 1)
22000.0 /	125.66007 (31, 1)	127.24195 (31, 1)	127.77368 (31, 1)	127.24203 (31, 1)	125.66023 (31, 1)
21000.0 /	130.13525 (31, 1)	131.91348 (31, 1)	132.51163 (31, 1)	131.91356 (31, 1)	130.13542 (31, 1)
20000.0 /	134.91980 (31, 1)	136.92915 (31, 1)	137.60559 (31, 1)	136.92924 (31, 1)	134.91998 (31, 1)
19000.0 /	140.04437 (31, 1)	142.32782 (31, 1)	143.09726 (31, 1)	142.32793 (31, 1)	140.04457 (31, 1)
18000.0 /	145.54323 (31, 1)	148.15442 (31, 1)	149.03522 (31, 1)	148.15453 (31, 1)	145.54346 (31, 1)
17000.0 /	151.45427 (31, 1)	154.46085 (31, 1)	155.47627 (31, 1)	154.46097 (31, 1)	151.45450 (31, 1)
16000.0 /	157.81917 (31, 1)	161.30753 (31, 1)	162.48740 (31, 1)	161.30765 (31, 1)	157.81943 (31, 1)
15000.0 /	164.68298 (31, 1)	168.76488 (31, 1)	170.14792 (31, 1)	168.76503 (31, 1)	164.68327 (31, 1)
14000.0 /	172.00458 (31, 1)	176.82431 (31, 1)	178.46078 (31, 1)	176.82448 (31, 1)	172.00488 (31, 1)
13000.0 /	179.29852 (31, 1)	185.03156 (31, 1)	186.98306 (31, 1)	185.03172 (31, 1)	179.29886 (31, 1)
12000.0 /	186.95456 (31, 1)	193.85036 (31, 1)	196.20509 (31, 1)	193.85056 (31, 1)	186.95493 (31, 1)
11000.0 /	194.91226 (31, 1)	203.31255 (31, 1)	206.19241 (31, 1)	203.31277 (31, 1)	194.91269 (31, 1)
10000.0 /	203.04863 (31, 1)	213.43164 (31, 1)	217.00941 (31, 1)	213.43190 (31, 1)	203.04910 (31, 1)
9000.0 /	213.03947 (25, 1)	224.18404 (31, 1)	228.71162 (31, 1)	224.18431 (31, 1)	213.03972 (25, 1)
8000.0 /	223.02008 (25, 1)	235.47429 (31, 1)	241.33180 (31, 1)	235.47461 (31, 1)	223.02036 (25, 1)
7000.0 /	231.95671 (25, 1)	247.06757 (31, 1)	254.85251 (31, 1)	247.06793 (31, 1)	231.95703 (25, 1)
6000.0 /	238.45390 (25, 1)	259.14520 (31, 1)	269.87451 (31, 1)	259.14563 (31, 1)	238.45427 (25, 1)
5000.0 /	228.40649 (30, 1)	266.44049 (31, 1)	281.67935 (31, 1)	266.44101 (31, 1)	228.40736 (30, 1)
4000.0 /	210.45224 (31, 1)	259.41135 (25, 1)	280.98947 (32, 1)	259.41162 (25, 1)	210.45320 (31, 1)
3000.0 /	200.25038 (26, 1)	260.60391 (31, 1)	297.46573 (31, 1)	260.60464 (31, 1)	200.25090 (26, 1)
2000.0 /	150.55727 (27, 1)	243.93317 (32, 1)	316.53058 (32, 1)	243.93407 (32, 1)	150.55780 (27, 1)
1000.0 /	147.45822 (14, 1)	267.76794 (23, 1)	348.84018 (23, 1)	267.76846 (23, 1)	147.45845 (14, 1)

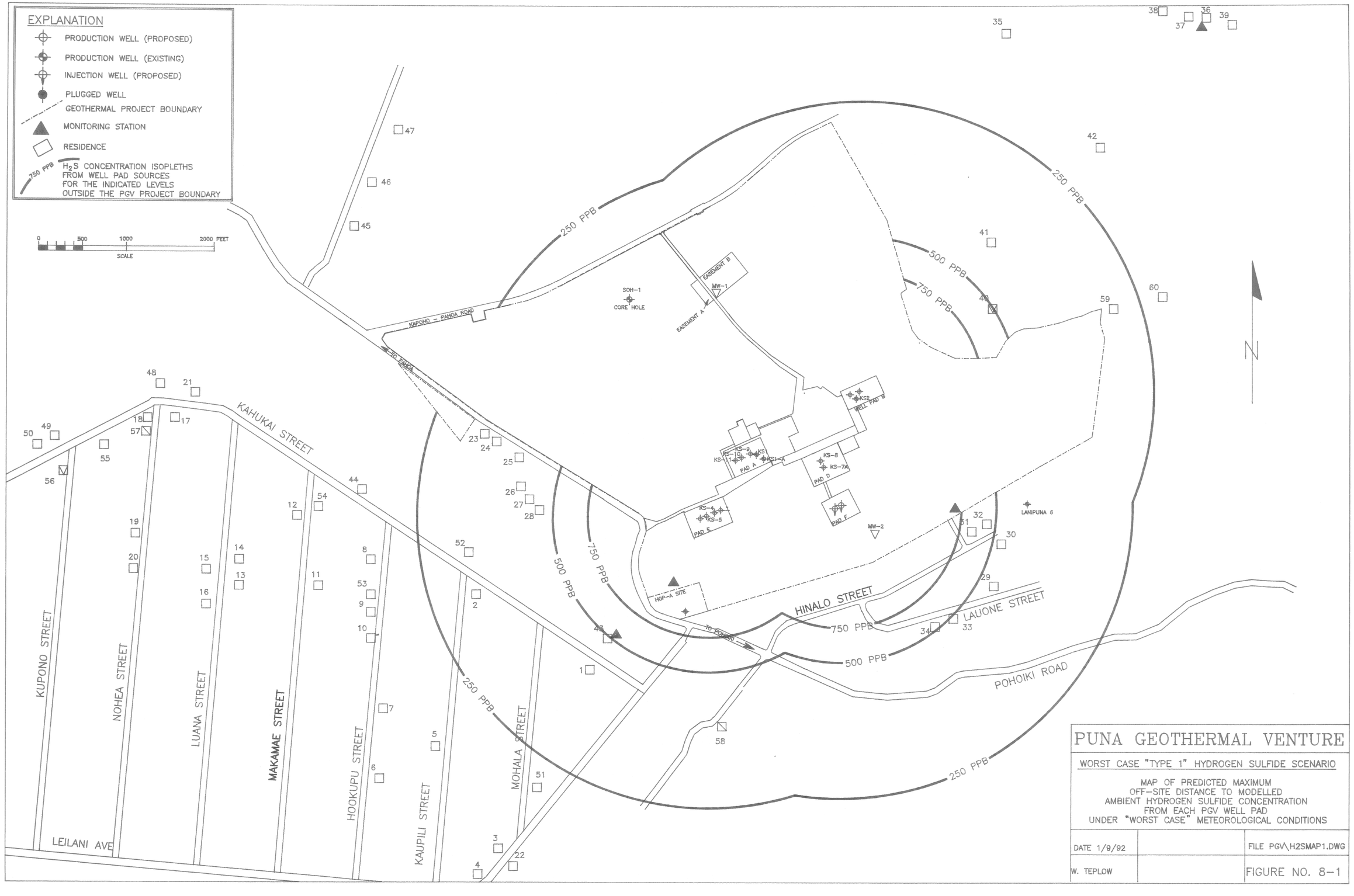
2ND HIGH
1-HR
SGROUP# 1

*** PGV SCENARIOS - W/ DOWNWASH & W/ 10M FLAGPOLE ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *
* FROM SOURCES: 1,
* FOR THE DISCRETE RECEPTOR POINTS *

- X -	- Y -	CON.	(DAY,HOUR)	- X -	- Y -	CON.	(DAY,HOUR)
-100.0	50.0	0.00000	(0, 0)	-50.0	50.0	40.27215	(2, 1)
0.0	50.0	23251.51172	(20, 1)	50.0	50.0	40.27218	(2, 1)
100.0	50.0	0.00000	(0, 0)	-100.0	100.0	3.95927	(3, 1)
-50.0	100.0	183.16537	(8, 1)	0.0	100.0	9313.95410	(21, 1)
50.0	100.0	183.16576	(8, 1)	100.0	100.0	3.96161	(3, 1)
-100.0	200.0	45.74429	(2, 1)	-50.0	200.0	348.97095	(3, 1)
0.0	200.0	3098.49390	(23, 1)	50.0	200.0	348.97119	(3, 1)
100.0	200.0	45.75299	(2, 1)	-100.0	300.0	112.18290	(8, 1)
-50.0	300.0	400.45386	(14, 1)	0.0	300.0	1557.30090	(22, 1)
50.0	300.0	400.45471	(14, 1)	100.0	300.0	112.18307	(8, 1)
-100.0	400.0	153.10361	(8, 1)	-50.0	400.0	379.32474	(14, 1)
0.0	400.0	1005.63629	(24, 1)	50.0	400.0	379.32532	(14, 1)
100.0	400.0	153.10384	(8, 1)	-100.0	500.0	168.07005	(3, 1)
-50.0	500.0	326.49860	(14, 1)	0.0	500.0	719.78845	(24, 1)
50.0	500.0	326.49902	(14, 1)	100.0	500.0	168.07016	(3, 1)
-100.0	600.0	149.95229	(8, 1)	-50.0	600.0	288.82932	(15, 1)
0.0	600.0	546.05670	(24, 1)	50.0	600.0	288.82968	(15, 1)
100.0	600.0	149.95244	(8, 1)	-100.0	700.0	152.75896	(8, 1)
-50.0	700.0	275.81732	(24, 1)	0.0	700.0	457.50641	(24, 1)
50.0	700.0	275.81799	(24, 1)	100.0	700.0	152.75909	(8, 1)
-100.0	800.0	149.63899	(14, 1)	-50.0	800.0	282.54050	(22, 1)
0.0	800.0	414.74075	(22, 1)	50.0	800.0	282.54111	(22, 1)
100.0	800.0	149.63928	(14, 1)	-100.0	900.0	151.02678	(14, 1)
-50.0	900.0	276.47705	(22, 1)	0.0	900.0	377.92514	(22, 1)
50.0	900.0	276.47760	(22, 1)	100.0	900.0	151.02704	(14, 1)

RUN ENDED ON 12-09-91 AT 02:47:54

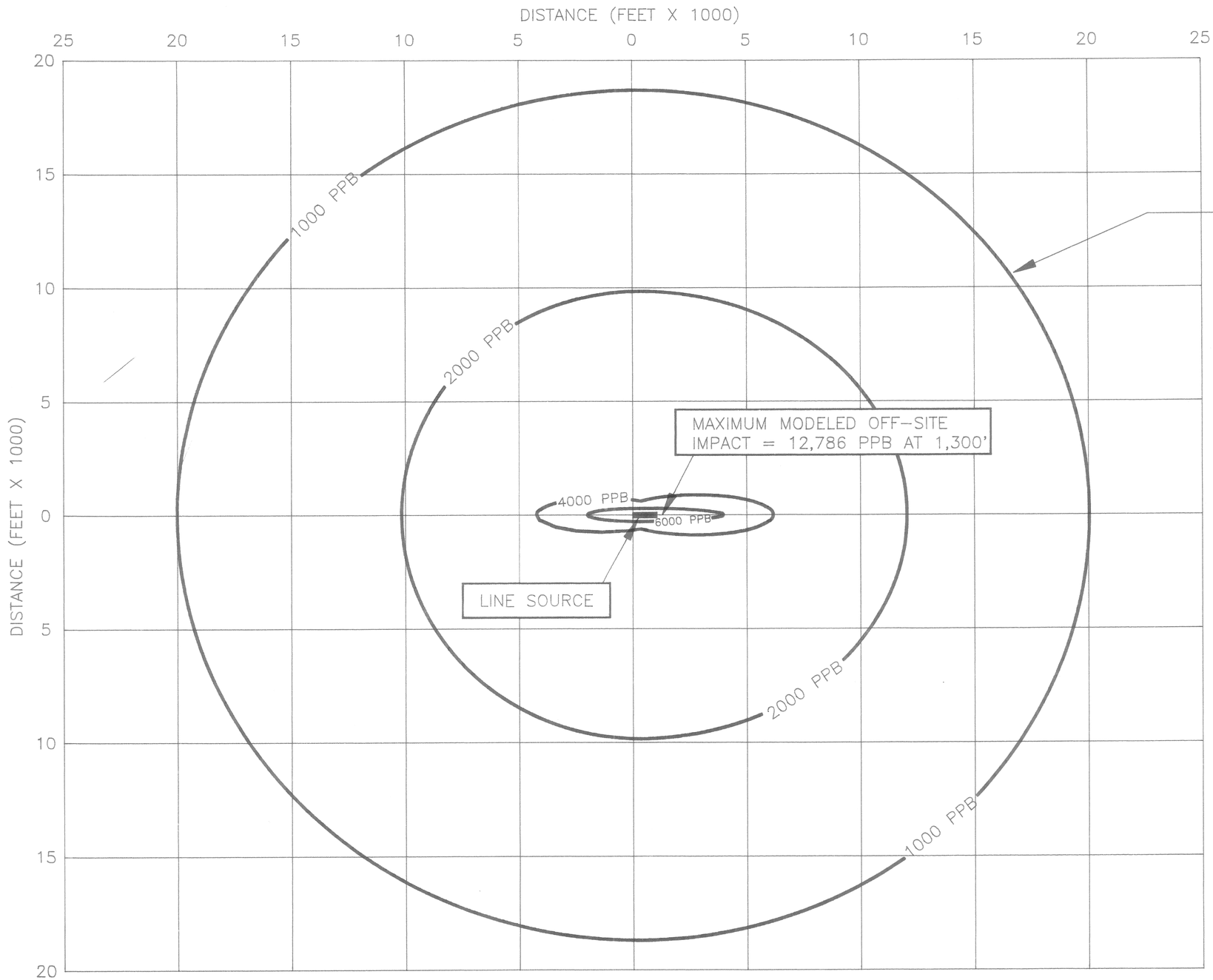


PUNA GEOTHERMAL VENTURE

WORST CASE "TYPE 1" HYDROGEN SULFIDE SCENARIO

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATION
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 1/9/92		FILE PGV\H2SMAP1.DWG
W. TEPLOW		FIGURE NO. 8-1



EXPLANATION

4000 PPB — MODELED HYDROGEN SULFIDE ISOPLETH WITH CONCENTRATION SHOWN IN PARTS PER BILLION

0 5000 10000 FEET

SCALE

PUNA GEOTHERMAL VENTURE

WORST CASE "TYPE 2"
HYDROGEN SULFIDE SCENARIO

MODELED HYDROGEN SULFIDE ISOPLETHS FOR SCENARIO 3, HORIZONTAL DISCHARGE UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 1/9/92		FILE: PGV\ERP8-2.DWG
BY W. TEPLOW		FIGURE NO. 8-2

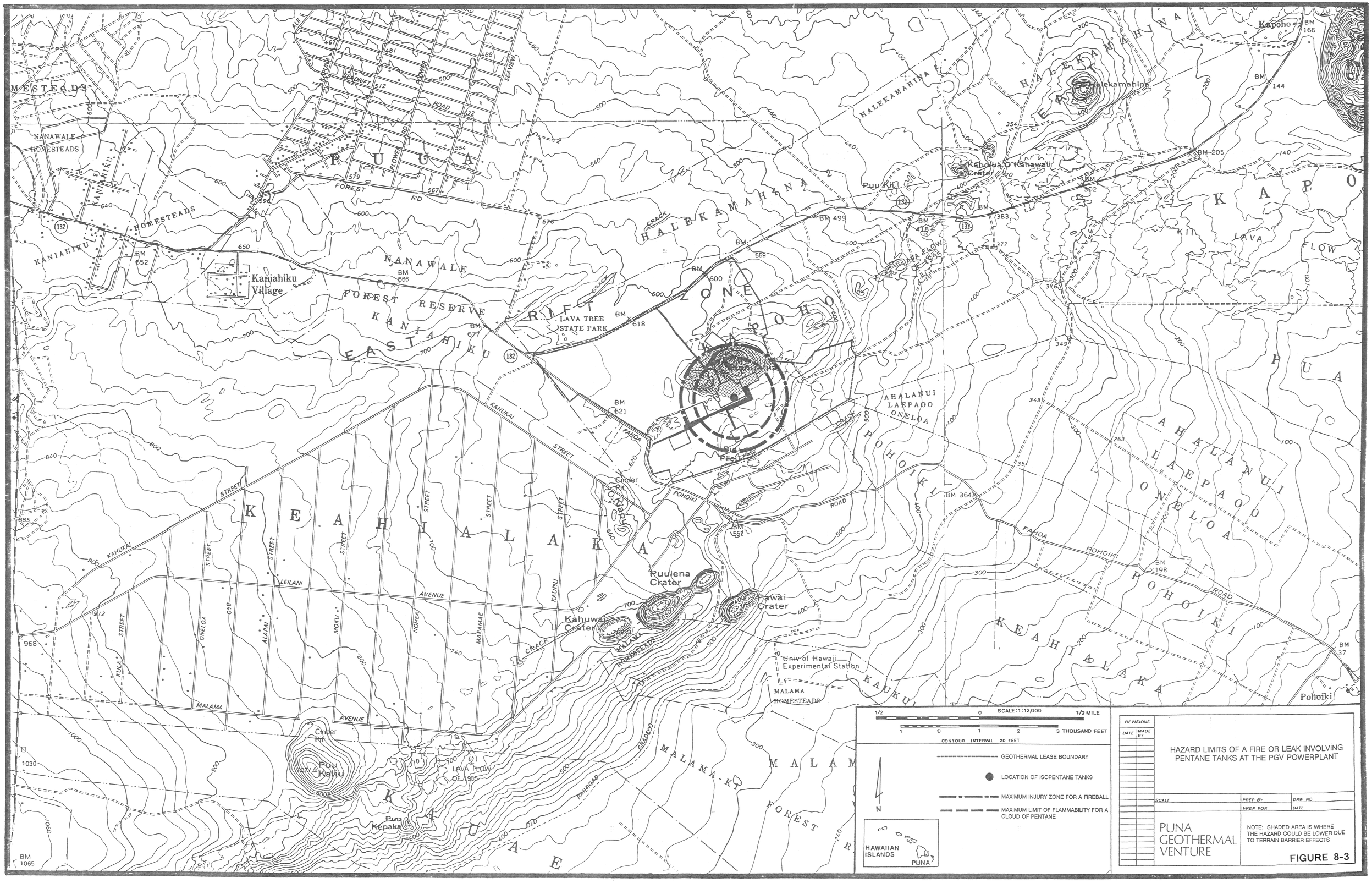
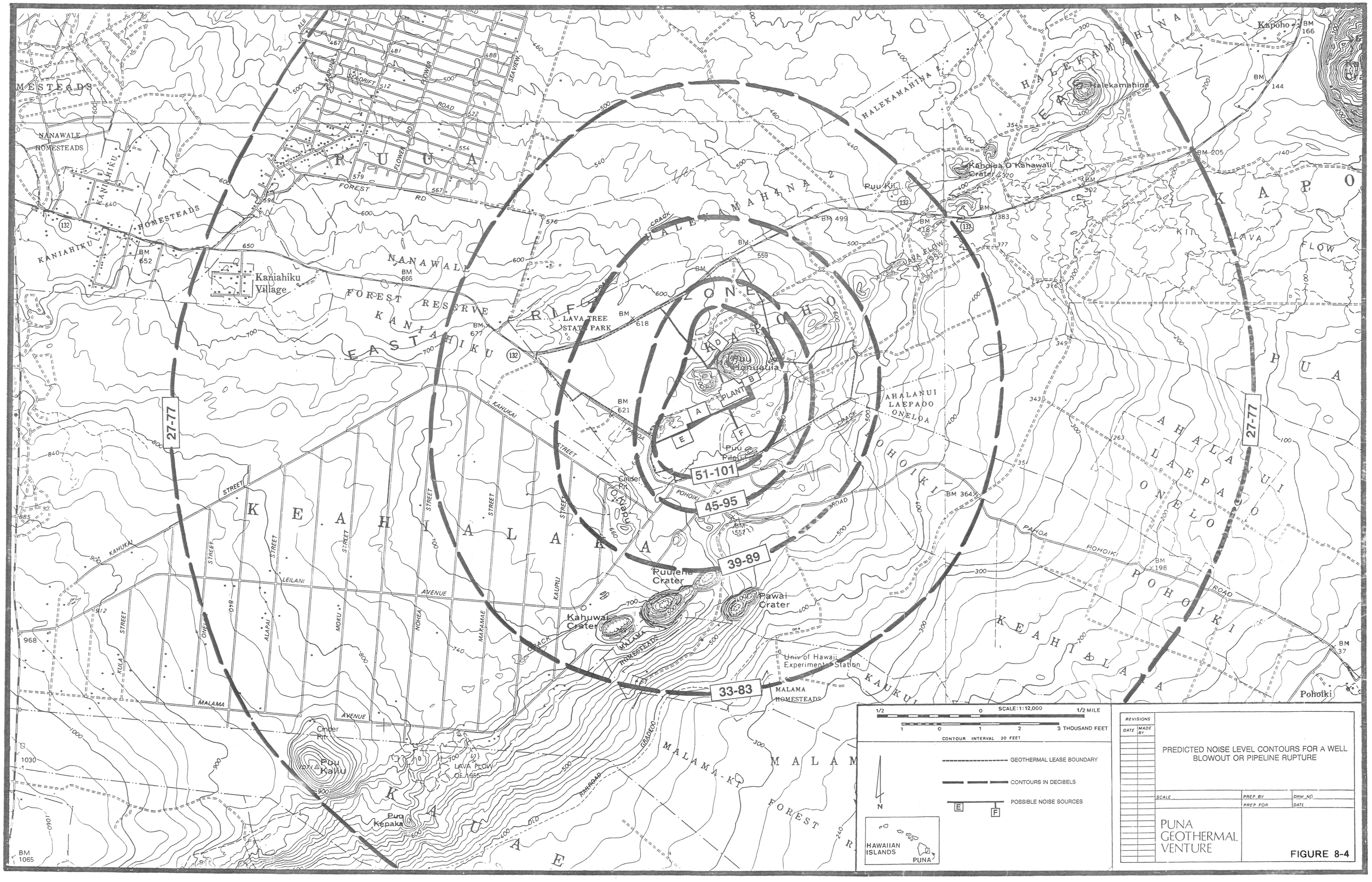
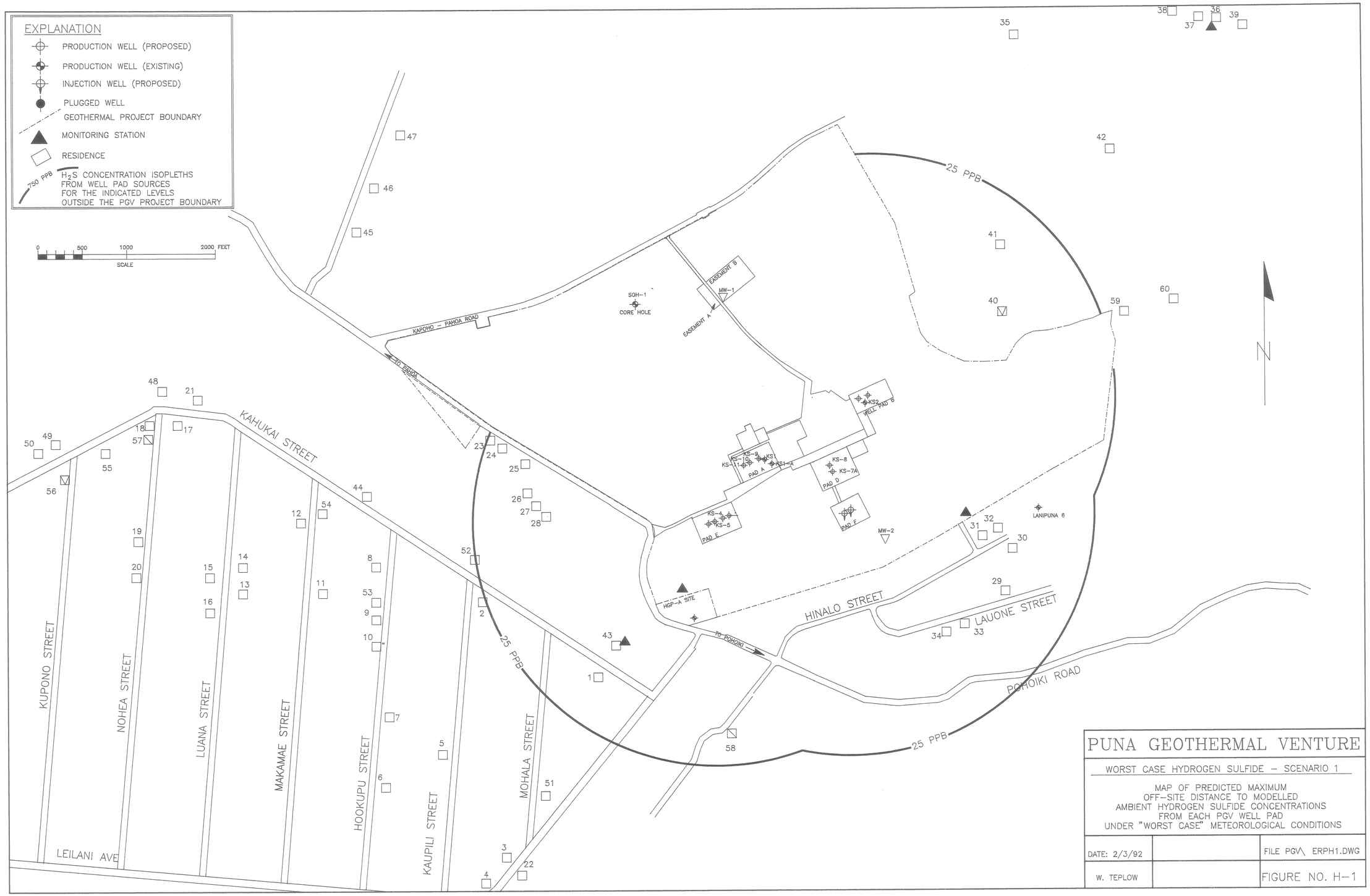

SCALE: 1:12,000
1/2 MILE
3 THOUSAND FEET
CONTOUR INTERVAL 20 FEET
GEOTHERMAL LEASE BOUNDARY
LOCATION OF ISOPENTANE TANKS
MAXIMUM INJURY ZONE FOR A FIREBALL
MAXIMUM LIMIT OF FLAMMABILITY FOR A CLOUD OF PENTANE
HAWAIIAN ISLANDS
PUNA
REVISIONS
DATE
MADE BY
HAZARD LIMITS OF A FIRE OR LEAK INVOLVING PENTANE TANKS AT THE PGV POWERPLANT
SCALE
PREP BY
DRW. NO.
PREP FOR
DATE
PUNA GEOTHERMAL VENTURE
NOTE: SHADED AREA IS WHERE THE HAZARD COULD BE LOWER DUE TO TERRAIN BARRIER EFFECTS
Kaniahiku Village
LAVA TREE STATE PARK
Pitoit
Cinder Pit
Ruulena Crater
Kahuwai Crater
Pawai Crater
Puu Kaliu
Puu Kepaka
Univ of Hawaii Experimental Station
MALAMA HOMESTEADS
Kaboloa O Kahawali Crater
Puu Kii
Kapoho
Pohoiki
NANAWALE HOMESTEADS
NANAWALE FOREST RESERVE
KANIAHIKU HOMESTEADS
KEAHIALAKA
PUUA
KAPOHO
AHALANUI LAEPAOO ONELOA
POHOIKI
HALEKAMAHINA
KAUKUI
MALAMA-KAUAE
LAVA FLOW OF 1955
KAHUKAI STREET
LEILANI AVENUE
MALAMA AVENUE
POHOIKI ROAD
FOREST RD
FLOWER RD
SEAVIEW
SEACRIFT
ALII
KAUPULI
ONELOA
ALAPAI
MOKU
NOHEAI
MAKAMAE
KULA
CRACK
RAILROAD
OLD
BM 1065

FIGURE 8-3


27-77
51-101
45-95
39-89
33-83
Kaniahiku Village
Lava Tree State Park
Kapoho
Halekamahina
Kaloua O Kahawai Crater
Puu Kii
Kii Lava Flow
Puu Kaliu
Puu Kepaka
Cinder Pit
Lava Flow of 1955
Kahuwai Crater
Puu Ulia
Puu Pilau
Ruuleia Crater
Pawai Crater
Univ of Hawaii Experiment Station
Pohoiki
Nanawale Homesteads
Malama Homesteads
Kaniahiku Homesteads
Nanawale Forest Reserve
Kaukui
Malama-Kaukui Forest Reserve
Kaualeo
Keahialaka
Pohoiki
Puua
Kapoho
Halekamahina
Ahalanui Laepaoo Onelo
Rift Zone
Crack
Kahukai Street
Leilani Avenue
Malama Avenue
Pahoa Pohoiki Road
Forest Rd
Flower Rd
Seaview
Alii
Kaniahiku
Kula
Oneli
Alapai
Moku
Nohea
Maxamae
Kaupili
Pohoiki
Pahoa
Gradeco
Railroad
Plant
A
B
D
E
F
SCALE: 1:12,000
1/2 0 1/2 MILE
1 0 1 2 3 THOUSAND FEET
CONTOUR INTERVAL 20 FEET
N
GEOTHERMAL LEASE BOUNDARY
CONTOURS IN DECIBELS
POSSIBLE NOISE SOURCES
HAWAIIAN ISLANDS
PUNA
REVISIONS
DATE
MADE BY
PREDICTED NOISE LEVEL CONTOURS FOR A WELL BLOWOUT OR PIPELINE RUPTURE
SCALE
PREP BY
DRW NO
PREP FOR
DATE
PUNA GEOTHERMAL VENTURE
FIGURE 8-4



PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 1

MAP OF PREDICTED MAXIMUM
OFF–SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

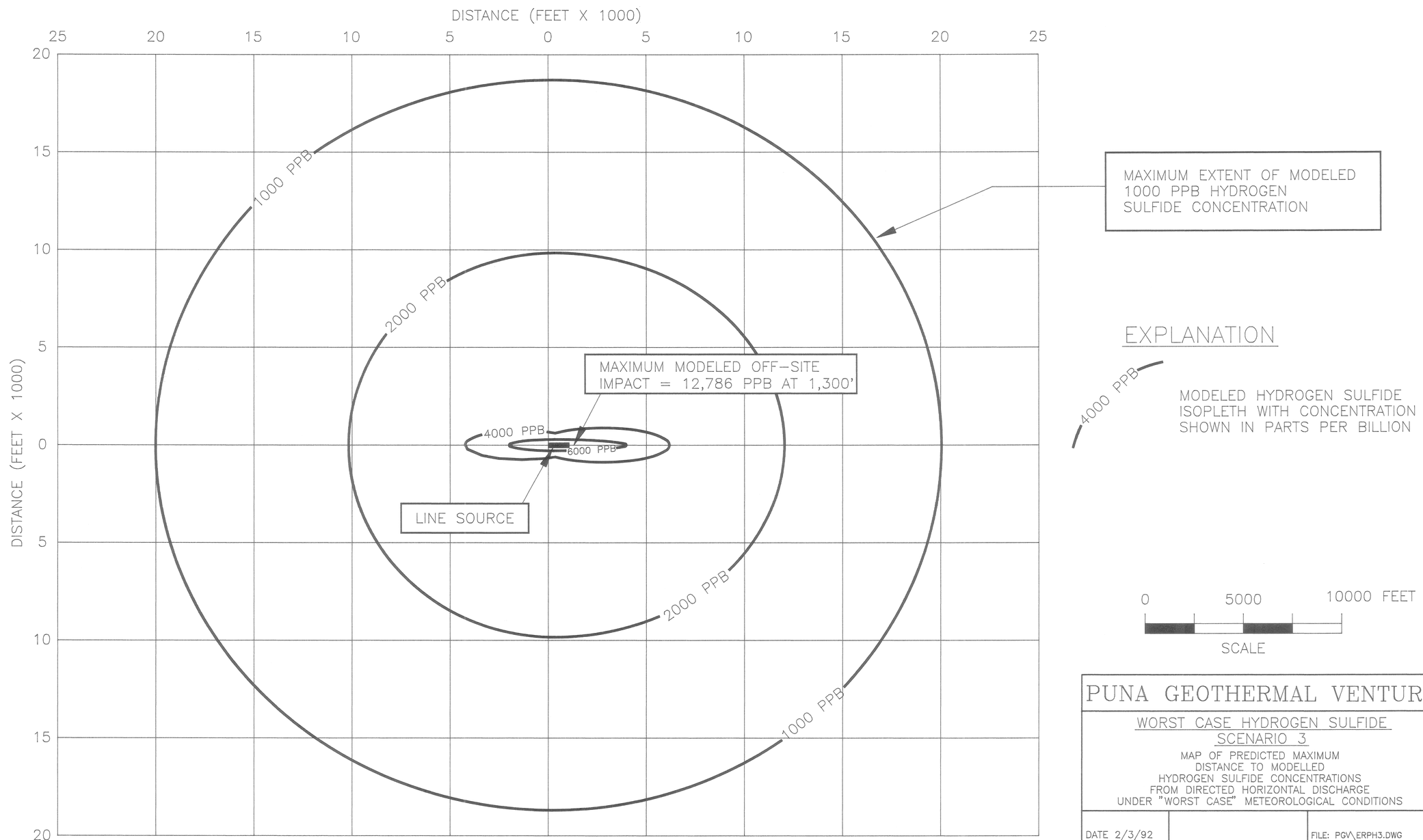
DATE: 2/3/92		FILE PGV\ ERPH1.DWG
W. TEPLOW		FIGURE NO. H–1

PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 2

MAP OF PREDICTED MAXIMUM OFF-SITE DISTANCE TO MODELLED AMBIENT HYDROGEN SULFIDE CONCENTRATIONS FROM EACH PGV WELL PAD UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE: 2/3/92		FILE PGV\ ERPH2.DWG
W. TEPLOW		FIGURE NO. H-2



PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE SCENARIO 3

MAP OF PREDICTED MAXIMUM DISTANCE TO MODELLED HYDROGEN SULFIDE CONCENTRATIONS FROM DIRECTED HORIZONTAL DISCHARGE UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

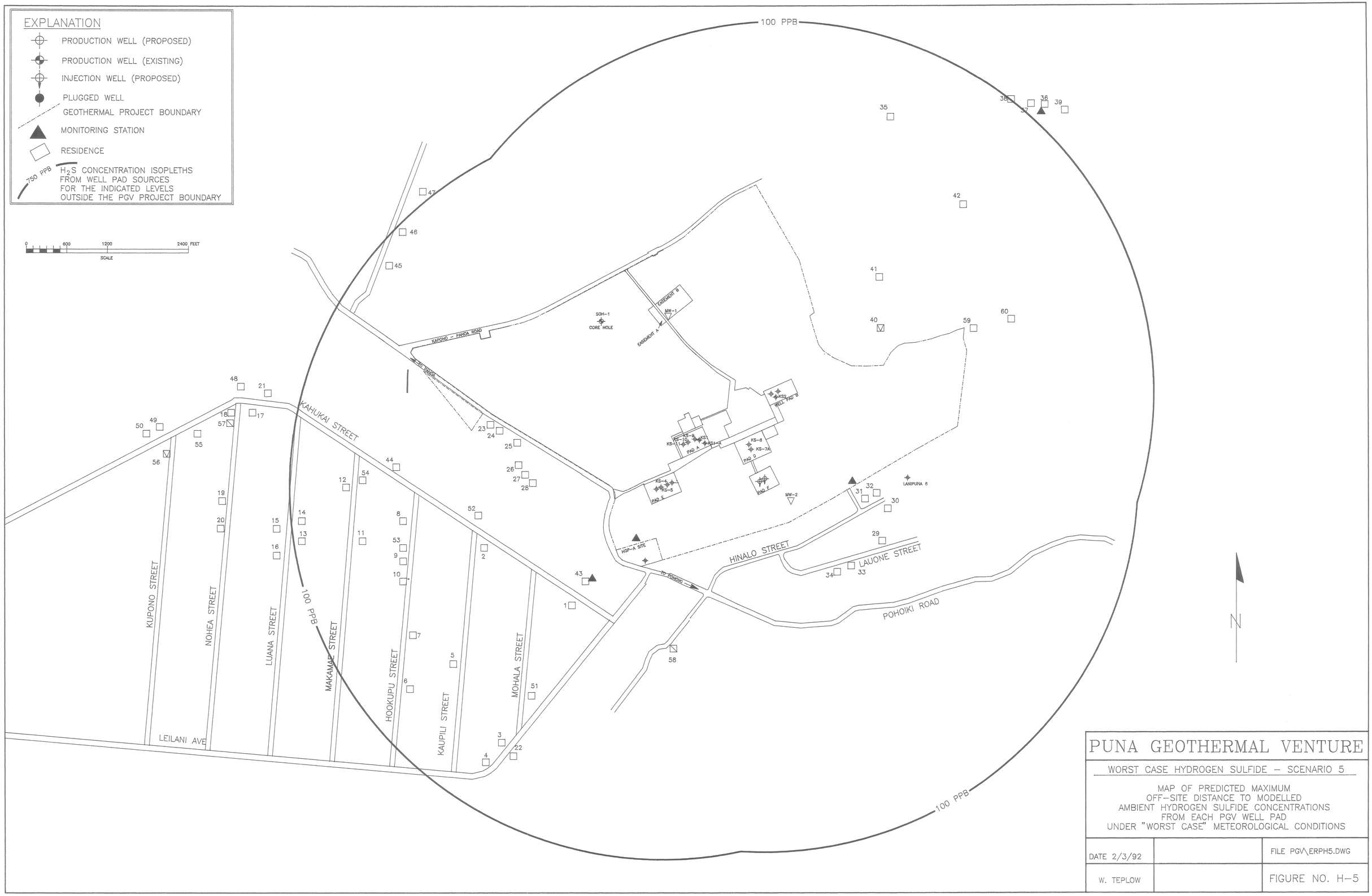
DATE 2/3/92		FILE: PGV\ERPH3.DWG
BY W. TEPLOW		FIGURE NO. H-3

PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 4

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 2/3/92		FILE PGV\ERPH4.DWG
W. TEPLOW		FIGURE NO. H-4

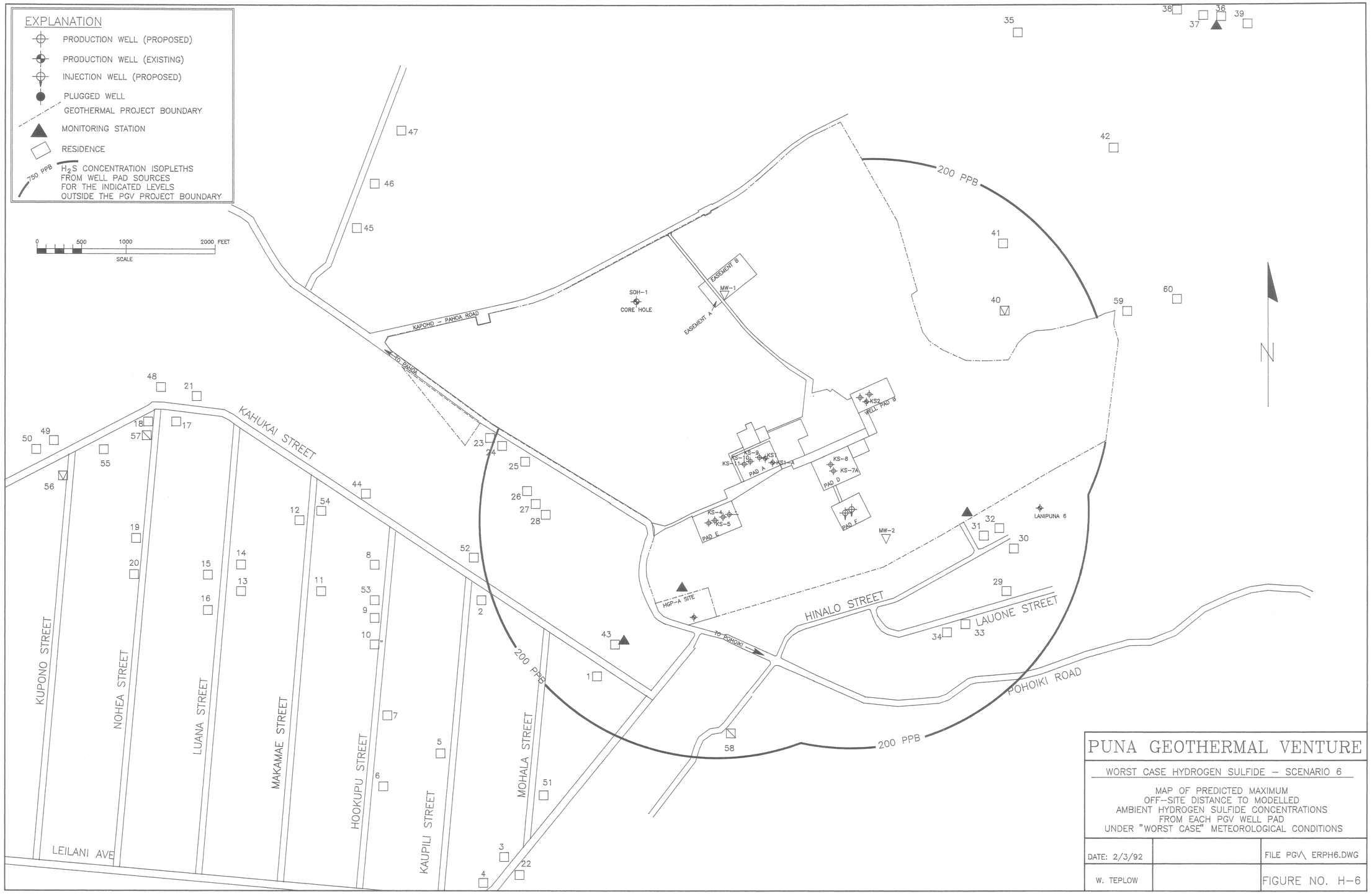


PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 5

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 2/3/92		FILE PGV\ERPH5.DWG
W. TEPLOW		FIGURE NO. H-5

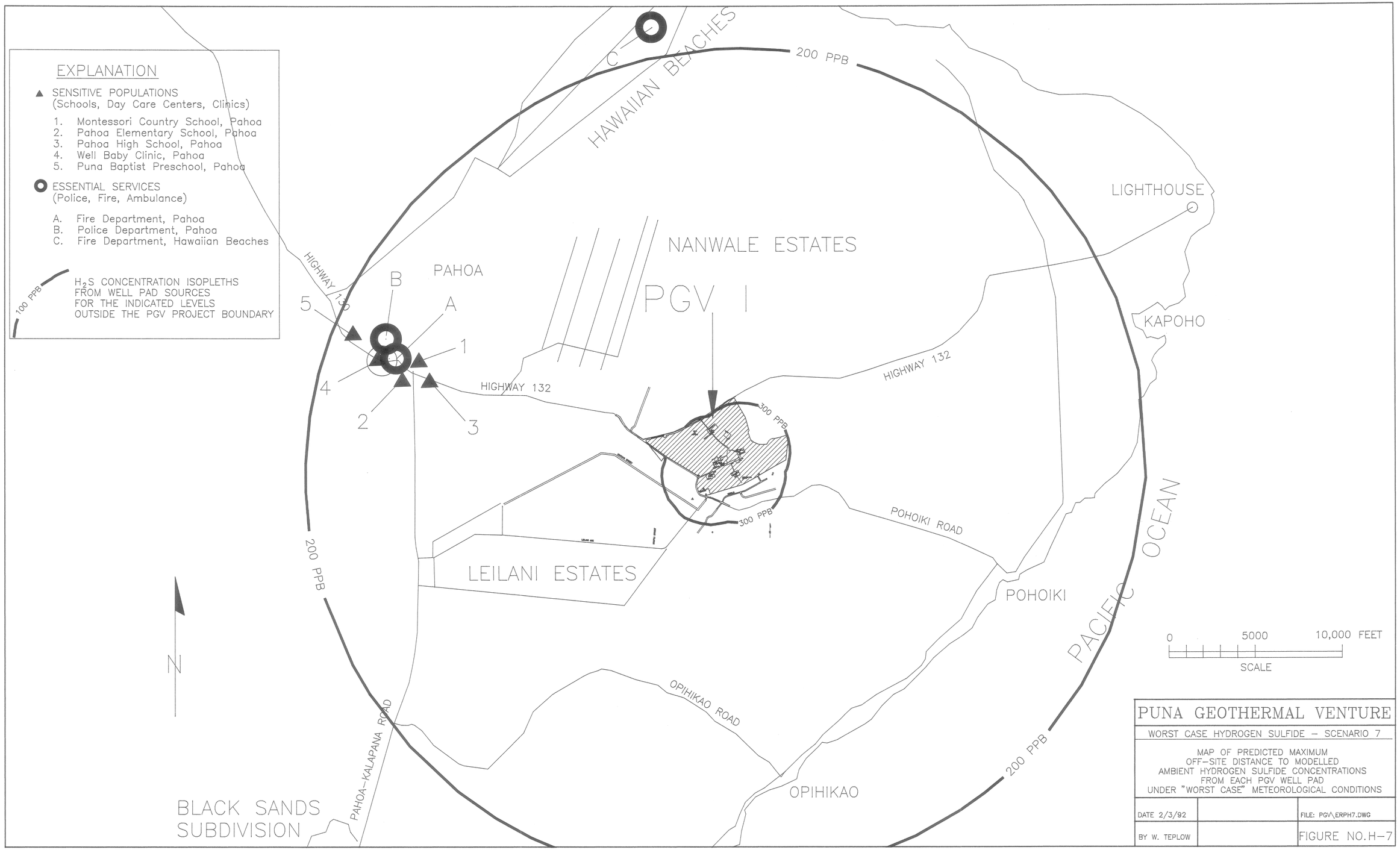


PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 6

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE: 2/3/92		FILE PGV\ ERPH6.DWG
W. TEPLOW		FIGURE NO. H-6


EXPLANATION
SENSITIVE POPULATIONS
(Schools, Day Care Centers, Clinics)
1. Montessori Country School, Pahoa
2. Pahoa Elementary School, Pahoa
3. Pahoa High School, Pahoa
4. Well Baby Clinic, Pahoa
5. Puna Baptist Preschool, Pahoa
ESSENTIAL SERVICES
(Police, Fire, Ambulance)
A. Fire Department, Pahoa
B. Police Department, Pahoa
C. Fire Department, Hawaiian Beaches
100 PPB
H_2S CONCENTRATION ISOPLETHS FROM WELL PAD SOURCES FOR THE INDICATED LEVELS OUTSIDE THE PGV PROJECT BOUNDARY
HAWAIIAN BEACHES
200 PPB
LIGHTHOUSE
NANWALE ESTATES
PGV I
PAHOA
KAPOHO
HIGHWAY 132
300 PPB
POHOIKI ROAD
LEILANI ESTATES
POHOIKI
PACIFIC OCEAN
N
0 5000 10,000 FEET
SCALE
OPIHIKAO ROAD
OPIHIKAO
PAHOA-KALAPANA ROAD
BLACK SANDS SUBDIVISION
PUNA GEOTHERMAL VENTURE
WORST CASE HYDROGEN SULFIDE – SCENARIO 7
MAP OF PREDICTED MAXIMUM OFF-SITE DISTANCE TO MODELLED AMBIENT HYDROGEN SULFIDE CONCENTRATIONS FROM EACH PGV WELL PAD UNDER "WORST CASE" METEOROLOGICAL CONDITIONS
DATE 2/3/92
FILE: PGV\ERPH7.DWG
BY W. TEPLOW
FIGURE NO. H-7

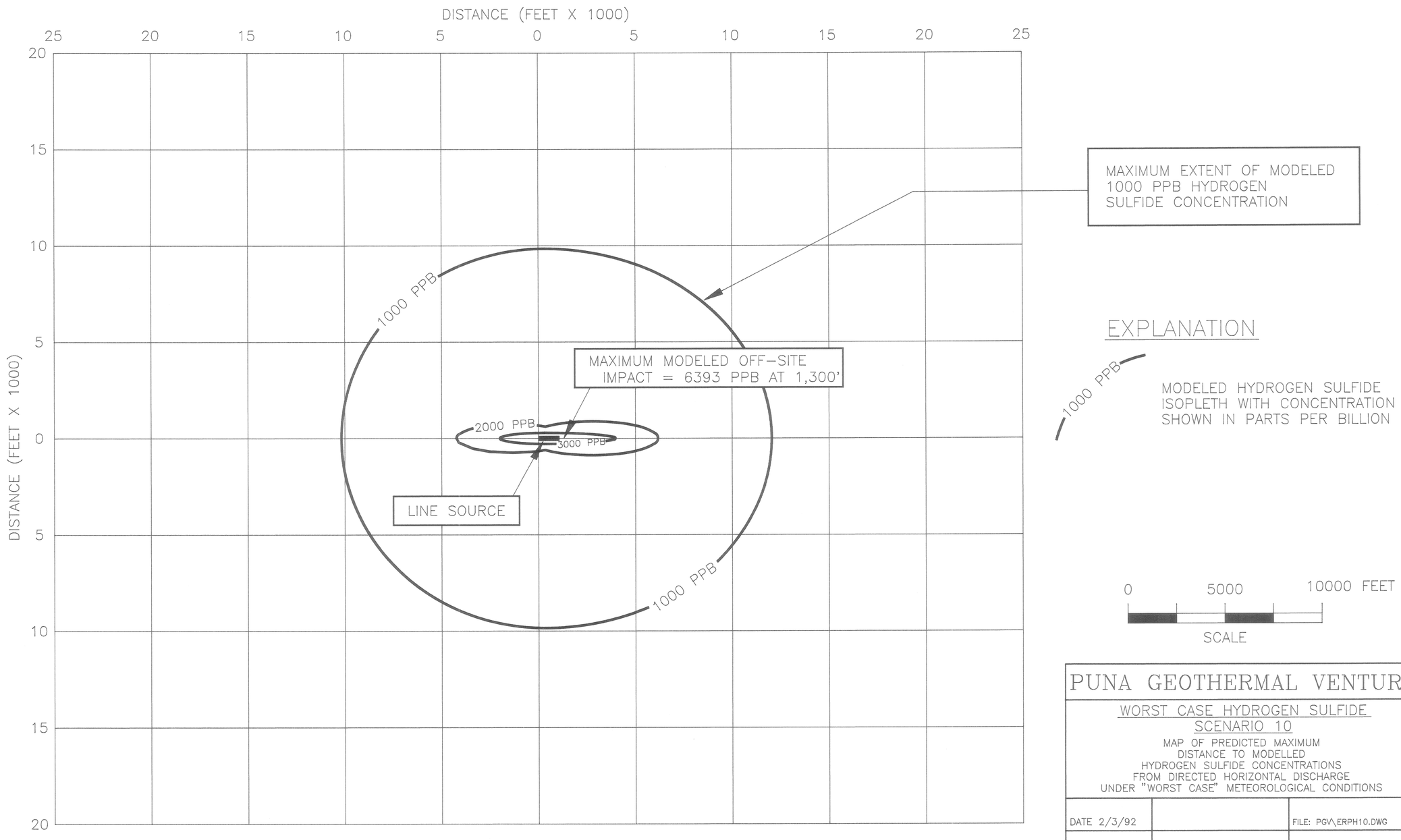

EXPLANATION
SENSITIVE POPULATIONS
(Schools, Day Care Centers, Clinics)
1. Montessori Country School, Pahoa
2. Pahoa Elementary School, Pahoa
3. Pahoa High School, Pahoa
4. Well Baby Clinic, Pahoa
5. Puna Baptist Preschool, Pahoa
ESSENTIAL SERVICES
(Police, Fire, Ambulance)
A. Fire Department, Pahoa
B. Police Department, Pahoa
100 PPB
H_2S CONCENTRATION ISOPLETHS
FROM WELL PAD SOURCES
FOR THE INDICATED LEVELS
OUTSIDE THE PGV PROJECT BOUNDARY
25 PPB
50 PPB
100 PPB
NANWALE ESTATES
PAHOA
PGV
HIGHWAY 130
HIGHWAY 132
LEILANI ESTATES
POHOIKI ROAD
OPIHIKAO ROAD
PAHOA-KALAPANA ROAD
LIGHTHOUSE
KAPOHO
POHOIKI
OPIHIKAO
PACIFIC OCEAN
N
0
5000
10,000 FEET
SCALE
PUNA GEOTHERMAL VENTURE
WORST CASE HYDROGEN SULFIDE – SCENARIO 8
MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS
DATE 2/3/92
FILE: PGV\ERPH8.DWG
BY W. TEPLOW
FIGURE NO. H-8

PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 9

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM EACH PGV WELL PAD
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 2/3/92		FILE: PGV\ERPH9.DWG
BY W. TEPLOW		FIGURE NO. H-9



PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE
SCENARIO 10

MAP OF PREDICTED MAXIMUM DISTANCE TO MODELLED HYDROGEN SULFIDE CONCENTRATIONS FROM DIRECTED HORIZONTAL DISCHARGE UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 2/3/92		FILE: PGV\ERPH10.DWG
BY W. TEPLOW		FIGURE NO. H-10


EXPLANATION
SENSITIVE POPULATIONS
(Schools, Day Care Centers, Clinics)
1. Montessori Country School, Pahoa
2. Pahoa Elementary School, Pahoa
3. Pahoa High School, Pahoa
4. Well Baby Clinic, Pahoa
5. Puna Baptist Preschool, Pahoa
ESSENTIAL SERVICES
(Police, Fire, Ambulance)
A. Fire Department, Pahoa
B. Police Department, Pahoa
100 PPB
H_2S CONCENTRATION ISOPLETHS
FROM WELL PAD SOURCES
FOR THE INDICATED LEVELS
OUTSIDE THE PGV PRJECT BOUNDARY
LIGHTHOUSE
KAPOHO
NANWALE ESTATES
PAHOA
PGV I
LEILANI ESTATES
POHOIKI
OPIHIKAO
PACIFIC OCEAN
HIGHWAY 130
HIGHWAY 132
POHOIKI ROAD
OPIHIKAO ROAD
PAHOA-KALAPANA ROAD
25 PPB
50 PPB
100 PPB
200 PPB
300 PPB
A
B
1
2
3
4
5
N
0
5000
10,000 FEET
SCALE
PUNA GEOTHERMAL VENTURE
WORST CASE HYDROGEN SULFIDE – SCENARIO 11
MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM NCG PIPELINE BREAK
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS
DATE 2/3/92
FILE: PGV\ERPH11.DWG
BY W. TEPLOW
FIGURE NO. H-11

PUNA GEOTHERMAL VENTURE

WORST CASE HYDROGEN SULFIDE – SCENARIO 12

MAP OF PREDICTED MAXIMUM
OFF-SITE DISTANCE TO MODELLED
AMBIENT HYDROGEN SULFIDE CONCENTRATIONS
FROM UNABATED EMERGENCY STEAM RELEASE FACILITY
UNDER "WORST CASE" METEOROLOGICAL CONDITIONS

DATE 2/3/92		FILE PGV\ERPH12.DWG
W. TEPLOW		FIGURE NO. H-12