



## WORK LOCATION PERSONNEL PROTECTION AND SAFETY EVALUATION FORM

**Attach Pertinent Documents/Data  
Fill in Blanks As Appropriate**

Job No.: <u>015015.060.061</u>	
Prepared by: <u>Dylan Frazer</u>	Reviewed by: <u>Christine Kimmel</u>
Date: <u>January 31, 2013</u>	Date: <u>February 1, 2013</u>

### A. WORK LOCATION DESCRIPTION

1. **Project Name:** South State Street Manufactured Gas Plant- Spinnaker Reach Air Sampling
2. **Location:** Bellingham, Washington
3. **Anticipated Activities:** Air sampling in crawlspace under Spinnaker Reach condominium building, which is adjacent to the south boundary of the upper portion of the project Site
4. **Size:** Approximately 3 acres
5. **Surrounding Population:** Residential, city park
6. **Buildings/Homes/Industry:** City park, condominiums
7. **Topography:** Sloping northwest towards Bellingham Bay
8. **Anticipated Weather:** Sun/rain, 30 to 50 degrees Fahrenheit
9. **Unusual Features:** Air sampling will be conducted in the crawl space under the Spinnaker Reach condominium, which is classified as a non-permitted confined space. Non-permitted confined space entry requires one attendant in addition to the worker, and air monitoring prior to and during entry.
10. **Site History:** The project Site is located on the northern portion of Boulevard park, a City-managed park, and includes nearshore uplands and adjacent aquatic lands located in Bellingham Bay. The Site is intersected by active railroad tracks owned and managed by Burlington Northern Santa Fe (BNSF).

From approximately 1890 to the late 1940s, a coal gasification plant operated on the upper portion of the site. The facility manufactured gas from coal, supplying residents and local businesses of Bellingham with gas for heating, cooking, and lighting.

An RI/FS, ongoing since 2010, has identified levels of benzene in soil above applicable cleanup levels at sample locations along the south boundary of the upper portion of the site. The Spinnaker Reach condominium building is located adjacent to this boundary.

**B. HAZARD DESCRIPTION**

1. **Background Review:**     Complete     Partial

If partial, why?

2. **Hazardous Level:**     B     C     D     Unknown

**Justification:**

3. **Types of Hazards:** (Attach additional sheets as necessary)

- A.     Chemical     Inhalation     Explosive  
       Biological     Ingestion     O2 Def.     Skin Contact

Describe: Sampling of air potentially impacted by VOCs. Accessing sampling locations in a non-permitted confined space has a potential for oxygen deficiency and chemical vapors. Exposure to hantavirus is possible in crawl spaces containing rodent feces.

- B.     Physical     Cold Stress     Noise     Heat Stress     Other

Describe: Walking/crawling in crawlspace has potential for hitting head, etc. Insects and other animals may be present.

- C.     Radiation

Describe:

4. **Nature of Hazards:**

- Air                            Describe: Potential for volatile constituents released from contaminated soil and groundwater. Ambient conditions in crawl space may allow for hantavirus material, and/or oxygen-deficient air.

- Soil                            Describe:

- Surface Water            Describe:

- Groundwater            Describe:

- Other                        Describe:

## 5. Chemical Contaminants of Concern N/A

Contaminant	PEL (ppm)	I.D.L.H. (ppm)	Source/Quantity Characteristics	Route of Exposure	Symptoms of Acute Exposure	Instruments Used to Monitor Contaminant
Benzene	1	500	May be present in soil and groundwater, max concentration in nearby soil vapor samples is 130 $\mu\text{g}/\text{m}^3$	Inhalation, ingestion, absorption, and skin or eye contact.	Irritated eyes, skin, nose, and respiratory system, giddiness, headache, nausea, staggered gait, dermatitis, fatigue, anorexia, lassitude, bone marrow depressant. (carcinogenic)	PID
Toluene	100	500	May be present in soil and groundwater, max concentration in nearby soil vapor samples is 172 $\mu\text{g}/\text{m}^3$	Inhalation, ingestion, percutaneous absorption, and skin & eye contact.	Headache, dizziness, drowsiness, coordination problems, & coma	PID
Xylene	100	900	May be present in soil and groundwater, max concentration in nearby soil vapor samples is 33 $\mu\text{g}/\text{m}^3$	Inhalation, ingestion, percutaneous absorption, and skin & eye contact.	Nervous system depression, liver and kidney damage.	PID
Ethylbenzene	100	800	May be present in soil and groundwater, max concentration in nearby soil vapor samples is 14 $\mu\text{g}/\text{m}^3$	Inhalation, ingestion, percutaneous absorption, and skin & eye contact.	Nervous system depression, headaches, dizziness, nausea, convulsions, & coma	PID

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Notes:

**6. Physical Hazards of Concern**  N/A

Hazard	Description	Location	Procedures Used to Monitor Hazard
Non-permitted Confined Space Entry		Spinnaker Reach condo crawlspace	Air monitoring before and during entry, attendant at access portal keeps sampling staff in confined space in sight
Unknown insects, animals living in crawlspace		Spinnaker Reach condo crawlspace	Wear tyvek suit, be aware of surroundings when moving in crawlspace
Hantavirus material	Insect/rodent urine and feces impacted soil	Spinnaker Reach condo crawlspace	Wear tyvek suit, be aware of surroundings when moving in crawlspace, wear particulate dust mask (minimum) or ½ face respirator

**7. Work Location Instrument Readings**  N/A (Record instrument readings before entry in work area and at point of entry, during work with worker)

Location: Point of Entry

Percent O<sub>2</sub>: \_\_\_\_\_ Percent LEL: \_\_\_\_\_

Radioactivity: \_\_\_\_\_ PID: \_\_\_\_\_

FID: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Location: Sample Location 1 (during work)

Percent O<sub>2</sub>: \_\_\_\_\_ Percent LEL: \_\_\_\_\_

Radioactivity: \_\_\_\_\_ PID: \_\_\_\_\_

FID: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Location: Sample Location 2 (during work)

Percent O<sub>2</sub>: \_\_\_\_\_ Percent LEL: \_\_\_\_\_

Radioactivity: \_\_\_\_\_ PID: \_\_\_\_\_

FID: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Location: \_\_\_\_\_

Percent O<sub>2</sub>: \_\_\_\_\_ Percent LEL: \_\_\_\_\_

Radioactivity: \_\_\_\_\_ PID: \_\_\_\_\_

FID: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

Other: \_\_\_\_\_ Other: \_\_\_\_\_

**8. Hazards Expected In Preparation For Work Assignment**  N/A

Describe:

## C. PERSONAL PROTECTIVE EQUIPMENT

### 1. Level of Protection

A     B     C     D

Location/Activity: D: All areas within and outside of confined space, unless upgraded to Level C based on PID readings.

### 2. Protective Equipment (specify probable quantity required)

**Respirator**     N/A

- SCBA, Airline  
 Full-Face Respirator  
 Half-Face Respirator (Cart. organic vapor) (Only if upgrade to Level C)  
 Escape mask  
 None  
 Other:  
 Other:

**Clothing**     N/A

- Fully Encapsulating Suit  
 Chemically Resistant Splash Suit  
 Apron, Specify:  
 Tyvek Coverall  
 Saranex Coverall  
 Coverall, Specify  
 Other: Dust mask or Half-face respirator

**Head & Eye**     N/A

- Hard Hat  
 Goggles  
 Face Shield  
 Safety Eyeglasses  
 Other:

**Hand Protection**     N/A

- Undergloves; Type:  
 Gloves; Type: fabric or leather  
 Overgloves; Type:  
 None  
 Other:

**Foot Protection**     N/A

- Neoprene Safety Boots with Steel Toe/Shank  
 Disposable Overboots  
 Other: Steel toed work boots

3. **Monitoring Equipment**  N/A CGI PID O<sub>2</sub> Meter FID Rad Survey Other Detector Tubes (optional)Type: MultiRae multi-gas meter**D. DECONTAMINATION****PERSONAL DECONTAMINATION** Required Not Required*If required, describe:*

**Personnel will wash hands with soap and water prior to stopping work for lunch or breaks. Disposable PPE equipment will be removed in a manner to minimize personnel contact, and discarded in plastic bag for disposal as solid waste. Take a shower as soon as possible after shift.**

**EQUIPMENT DECONTAMINATION** Required Not Required*If required, describe and list equipment:*

All sample collection equipment will be laboratory-supplied or disposable

**E. PERSONNEL**

	<b>Name</b>	<b>Work Location Title/Task</b>	<b>Medical Current</b>	<b>Fit Test Current</b>
1.	<b>TBD</b>		<input type="checkbox"/>	<input type="checkbox"/>
2.			<input type="checkbox"/>	<input type="checkbox"/>
3.			<input type="checkbox"/>	<input type="checkbox"/>
4.			<input type="checkbox"/>	<input type="checkbox"/>
5.			<input type="checkbox"/>	<input type="checkbox"/>
6.			<input type="checkbox"/>	<input type="checkbox"/>
7.			<input type="checkbox"/>	<input type="checkbox"/>
8.			<input type="checkbox"/>	<input type="checkbox"/>
9.			<input type="checkbox"/>	<input type="checkbox"/>
10.			<input type="checkbox"/>	<input type="checkbox"/>

**Site Safety Coordinator:**   **TBD**



**F. ACTIVITIES COVERED UNDER THIS PLAN**

<b>Task No.</b>	<b>Description</b>	<b>Preliminary Schedule</b>
1	Collect air samples from crawlspace	February 2013

**G. SUBCONTRACTOR'S HEALTH AND SAFETY PROGRAM EVALUATION**

N/A

Name and Address of Subcontractor:

**EVALUATION CRITERIA**

Item	Adequate	Inadequate	Comments
Medical Surveillance Program	<input type="checkbox"/>	<input type="checkbox"/>	
Personal Protective Equipment Availability	<input type="checkbox"/>	<input type="checkbox"/>	
Onsite Monitoring Equipment Availability	<input type="checkbox"/>	<input type="checkbox"/>	
Safe Working Procedures Specification	<input type="checkbox"/>	<input type="checkbox"/>	
Training Protocols	<input type="checkbox"/>	<input type="checkbox"/>	
Ancillary Support Procedures (if any)	<input type="checkbox"/>	<input type="checkbox"/>	
Emergency Procedures	<input type="checkbox"/>	<input type="checkbox"/>	
Evacuation Procedures Contingency Plan	<input type="checkbox"/>	<input type="checkbox"/>	
Decontamination Procedures Equipment	<input type="checkbox"/>	<input type="checkbox"/>	
Decontamination Procedures Personnel	<input type="checkbox"/>	<input type="checkbox"/>	

**GENERAL HEALTH AND SAFETY PROGRAM EVALUATION:**  Adequate  Inadequate

Additional Comments:

Evaluation Conducted By: \_\_\_\_\_

Date: \_\_\_\_\_

## EMERGENCY FACILITIES AND NUMBERS

Hospital: St Joseph Hospital Medical Center- main campus  
2910 Squalicum Parkway  
Bellingham, WA 98225

Directions: **North** on South State Street, becomes N. Forest St and merges with James St, **Left** on Sunset Drive, **Right** on Ellis St, **Left** onto Squalicum Parkway (SEE ATTACHMENT B FOR MAP AND DETAILED DIRECTIONS)

Telephone: 360-734-5400

Emergency Transportation Systems (Fire, Police, Ambulance) – 911

Emergency Routes – Map (Attachment B)

Emergency Contacts:

	<b>Offsite</b>
Mark Herrenkohl (Project Manager)	360-319-0721
Chip Halbert (LAI Project Manager)	206-631-8690
Chris Kimmel (LAI H&S Officer)	425-778-0907
Dylan Frazer (LAI Field Staff)	509-240-2018

### **In the event of an emergency, do the following:**

1. Call for help as soon as possible. Call 911. Give the following information:
  - WHERE the emergency is – use cross streets or landmarks
  - PHONE NUMBER you are calling from
  - WHAT HAPPENED – type of injury
  - WHAT is being done for the victim(s)
  - YOU HANG UP LAST – let the person you called hang up first.
  
2. If the victim can be moved, paramedics will transport to the hospital. If the injury or exposure is not life-threatening, decontaminate the individual first. If decontamination is not feasible, wrap the individual in a blanket or sheet of plastic prior to transport.

**HEALTH AND SAFETY PLAN  
APPROVAL/SIGN OFF FORMAT**

I have read, understood, and agreed with the information set forth in this Health and Safety Plan (and attachments) and discussed in the Personnel Health and Safety briefing.

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Site Safety Coordinator	Signature	Date
Chris Kimmel Landau Health and Safety Manager	Signature	Date
Chip Halbert Project Manager	Signature	Date

Personnel Health and Safety Briefing Conducted By:

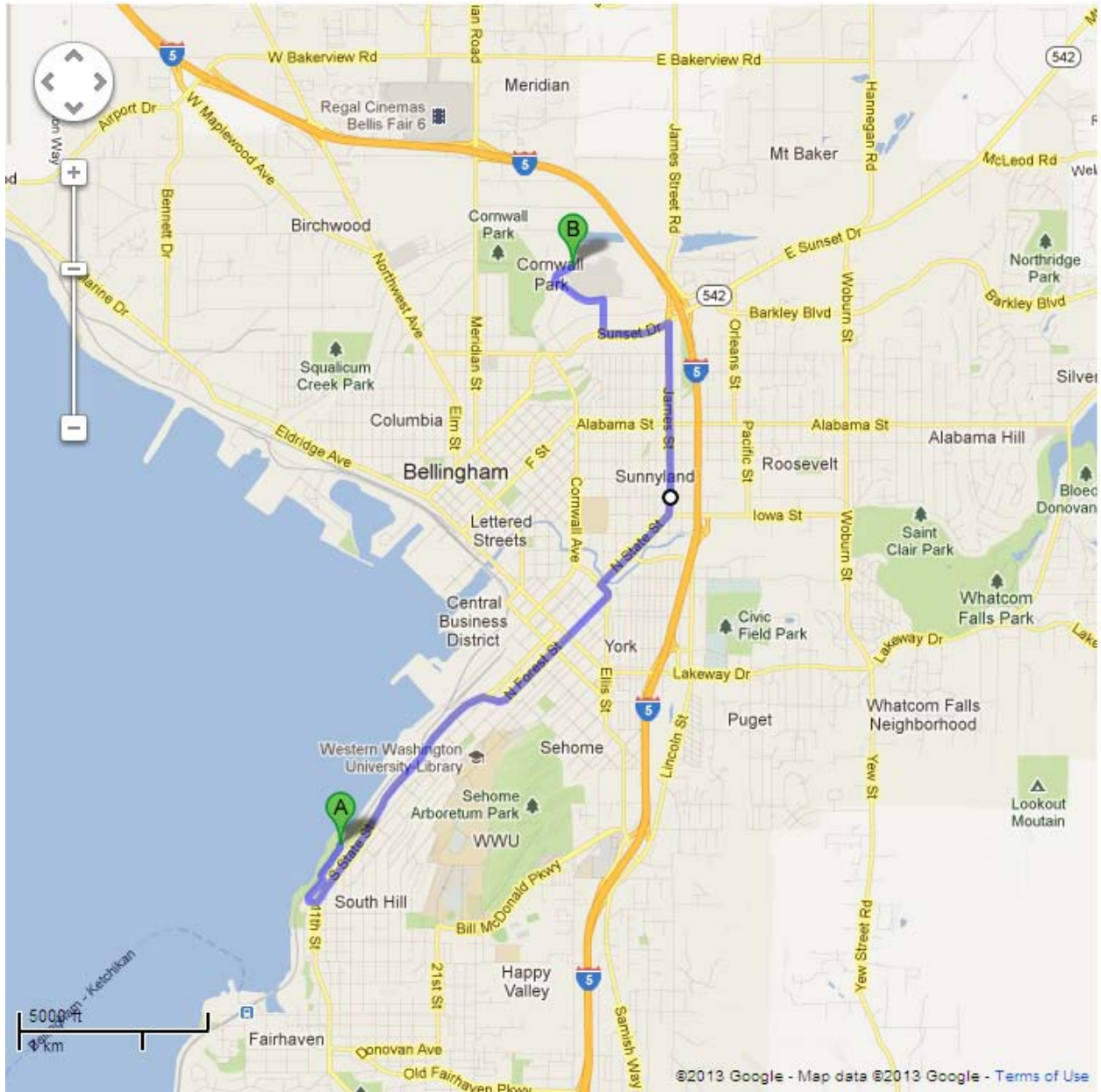
Name	Signature	Date
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## ATTACHMENT A

### ACTION LEVELS FOR RESPIRATORY PROTECTION

Monitoring Parameter	Reading	Level of Protection
Oxygen	19.5-23.5 %	No Entry outside of this range; if not 21.5% (normal), evaluate reasons for difference
Organic Vapors	PID reading >1 ppm at point of operations for more than 1 minute	Establish exclusion zone around work area, monitor worker's breathing zone.
	PID reading >2.5 ppm in worker's breathing zone for more than 1 minute	Evacuate area or upgrade to Level C-half face respirator with organic vapor/HEPA cartridge,
	PID reading >4 ppm in worker's breathing zone for more than 1 minute	Evacuate area and move upwind to allow vapors to dissipate, may resume work in Level C protection after vapors dissipate; vent mixing tanks outside.

### ATTACHMENT B MAP AND DIRECTIONS TO HOSPITAL





**Directions to PeaceHealth St. Joseph Medical Center**  
 2901 Squalicum Pkwy, Bellingham, WA 98225  
 5.0 mi – about 17 mins

You can enter notes here.



**A** **Boulevard Park**  
 470 Bayview Dr, Bellingham, WA 98225

1. Head **south** on **Bayview Dr/Boulevard Park** toward **S State St** go 0.4 mi  
total 0.4 mi  
 About 1 min
2. Turn **left** onto **S State St** go 0.6 mi  
total 1.0 mi  
 About 2 mins
3. Slight **left** onto **Boulevard St** go 0.8 mi  
total 1.7 mi  
 About 2 mins
4. Continue onto **N Forest St** go 0.8 mi  
total 2.6 mi  
 About 3 mins
5. Turn **left** onto **York St** go 374 ft  
total 2.6 mi
6. Take the 1st **right** onto **N State St** go 0.5 mi  
total 3.1 mi  
 About 2 mins
7. Slight **left** onto **James St** go 1.0 mi  
total 4.1 mi  
 About 3 mins
8. Turn **left** onto **Sunset Dr** go 0.3 mi  
total 4.4 mi  
 About 1 min
9. Take the 1st **right** onto **Ellis St** go 0.2 mi  
total 4.6 mi
10. Take the 2nd **left** onto **Squalicum Pkwy** go 0.4 mi  
total 5.0 mi  
 Destination will be on the right  
 About 1 min

**B** **PeaceHealth St. Joseph Medical Center**  
 2901 Squalicum Pkwy, Bellingham, WA 98225