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# Addendum No. 2 to May 2006 Health and Safety Plan Biorecirculation Pilot Test at Former Bldg. 1/36

**Boeing Realty Corporation**
**Former C-6 Facility**
**19503 South Normandie Avenue**
**Los Angeles, California**

May 4, 2007

*Prepared for:*

Boeing Realty Corporation
4501 Conant St.
Building 851, M/C D851-0097
Long Beach, CA 90808

*Prepared by:*

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May 4, 2007 CDM Project File: 5000-55353, 5.2

Ms. Ana Townsend
California Regional Water Quality Control Board - Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

Subject: Addendum No. 2 to May 2006 Health and Safety Plan
Biorecirculation Pilot Test at Former Bldg. 1/36
Boeing Realty Corporation, Former C-6 Facility
19503 South Normandie Avenue
Los Angeles, California,

Dear Ms. Townsend:

On behalf of Boeing Realty Corporation (BRC), Camp Dresser & McKee Inc. (CDM) is submitting the above-referenced document for your files.

If you have any questions or concerns regarding this document, please call Robert Scott at (562) 497-6176 or Joe Weidmann at (805) 563-8600.

Very truly yours,

Ravi Subramanian

Ravi Subramanian, P.E
Principal

Enclosure

Cc: Mario Stavale, BRC
Robert Scott, BRC (W/o enclosure)
Joe Weidmann, Haley & Aldrich, Inc. (W/o enclosure)

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# Addendum No. 2 to May 2006 Health and Safety Plan Biorecirculation Pilot Test at Former Bldg. 1/36

**Boeing Realty Corporation**
**Former C-6 Facility**
**19503 South Normandie Avenue**
**Los Angeles, California**

May 4, 2007

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*Prepared by:*

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18581 Teller Avenue, Suite 200
Irvine, California 92612

The information contained in the document titled "Addendum No.3 to May 2006 Health and Safety Plan, Biorecirculation Pilot Test at Former Bldg. 1/36" for site "Boeing Realty Corporation Former C-6 Facility, Los Angeles, California ", dated May 4, 2007, has received appropriate technical review and approval. This acknowledgement is made in lieu of all warranties, either expressed or implied.

Prepared by:

04MAY06

Jeff Bamer
Project Engineer

Joseph Leslie
Regional Health and Safety Manager

Ravi Subramanian, P.E.
Principal and Project Manager

CDM

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BOE-C6-0118574

| HEALTH AND SAFETY PLAN | CDM Constructors Inc. |
|---|---|
| **INTRODUCTION** | |
| PROJECT NAME : **Former C-6 Facility – Biorecirculation Pilot Test at Former Bldg 1/36** | WORK ASSIGNMENT NO. REGION: N.W. |
| JOB SITE ADDRESS: **1451 W. Knox Street, Los Angeles, CA 90501** | CLIENT: **Boeing Realty Corporation** |
| SITE CONTACT: **Dennis Carlson, Boeing Realty Corporation** | CLIENT CONTACT: **Robert P. Scott, Boeing Realty Corporation** |
| PHONE NO.: **818-535-7438** | PHONE NO.: **(562) 586-4533** |
| ( XX ) AMENDMENT NO. **2** TO EXISTING APPROVED HASP - DATE EXISTING APPROVED HASP **May 4, 2006** | |

**OBJECTIVES OF FIELD WORK:**

1. **Perform wellhead modifications including installation of vault and downhole well pumps (ICS and JHA).**
2. **Drill, complete, develop new well EWB002 (CDM/WDC).**
3. **Sawcut and trench for vault and place piping/conduits in trench, pressure test piping, working around existing remediation piping (ICS).**
4. **Manage IDW from well installation and trenching activities (Waste Mgmt Sub).**
5. **Move Bldg 3 injection system Connex box and place at site, install solid mixing equipment trailer equipment inside compound using crane, perform aboveground mechanical modifications (piping, valves, tanks) to the existing compound, Connex box and solid mixing trailer (JHA).**
6. **Backfill trench, replace paving and striping, and grout vault openings (ICS).**
7. **Survey location of constructed items (KDM).**
8. **Perform electrical connections and wire in new instrumentation (CDM).**
9. **Shakedown, operation and maintenance of groundwater treatment system (CDM/JHA) including: injection of electron donors (60% Sodium Lactate, Whey Powder or Newman Zone); one or two-time injection of non-pathogenic chlorinated ethene-degrading Dehalococcoides ethenogenes culture (Shaw's SDC-9™ culture, or SiREM's KB-1™); and periodic injection of low concentrations of biofouling control chemicals (chlorine dioxide [CAS 10049-04-4] and/or hypochlorite [CAS 7778-54-3] or a weak organic acid [i.e., LBA cleaner]).**

**TYPE: Check as many as applicable**

| | | |
|---|---|---|
| (X Active | ( ) Landfill | ( ) Unknown |
| ( ) Inactive | ( ) Uncontrolled | ( ) Military |
| (X) Secure | (X) Industrial | ( ) Other |

**Specify**:

| | |
|---|---|
| ( ) Unsecure | ( ) Recovery |
| (X) Enclosed space | (X) Well Field (Monitoring Wells) |

**Note**: Site is anticipated to have heavy truck traffic from April to November 2007 (Approximately 100 to 200 trucks from 6:00 AM to 12:00 Midnight)

**DESCRIPTION AND FEATURES:**
The BRC Former C-6 property is bounded by a railroad right-of-way and Normandie Avenue to the east, 190th Street to the north, the former location of International Light Metals to the west, and the former location of Montrose Chemical to the south (Figure 1). The surrounding area consists primarily of industrial and commercial properties with some residential developments. The McDonnell Douglas Corporation operated an aerospace manufacturing facility on the site since the 1940's. All of the original above ground facility structures were demolished, and the site now consists of new warehouse buildings with truck loading docks and office space. Figure 2 is a plan of the Former Building 1/36 area of the Site along with the existing wells and the treatment compound area at the site.

SURROUNDING POPULATION: ( ) Residential **(X) Industrial** ( ) Rural **(X) Urban** ( ) OTHER:

| | |
|---|---|
| Prepared by: **Jeff Bamer, Project Engineer/H&S Coordinator** | Date: **4/06/2006** |
| SHSO Signature: | Date: |
| HSM Signature: | Date: |



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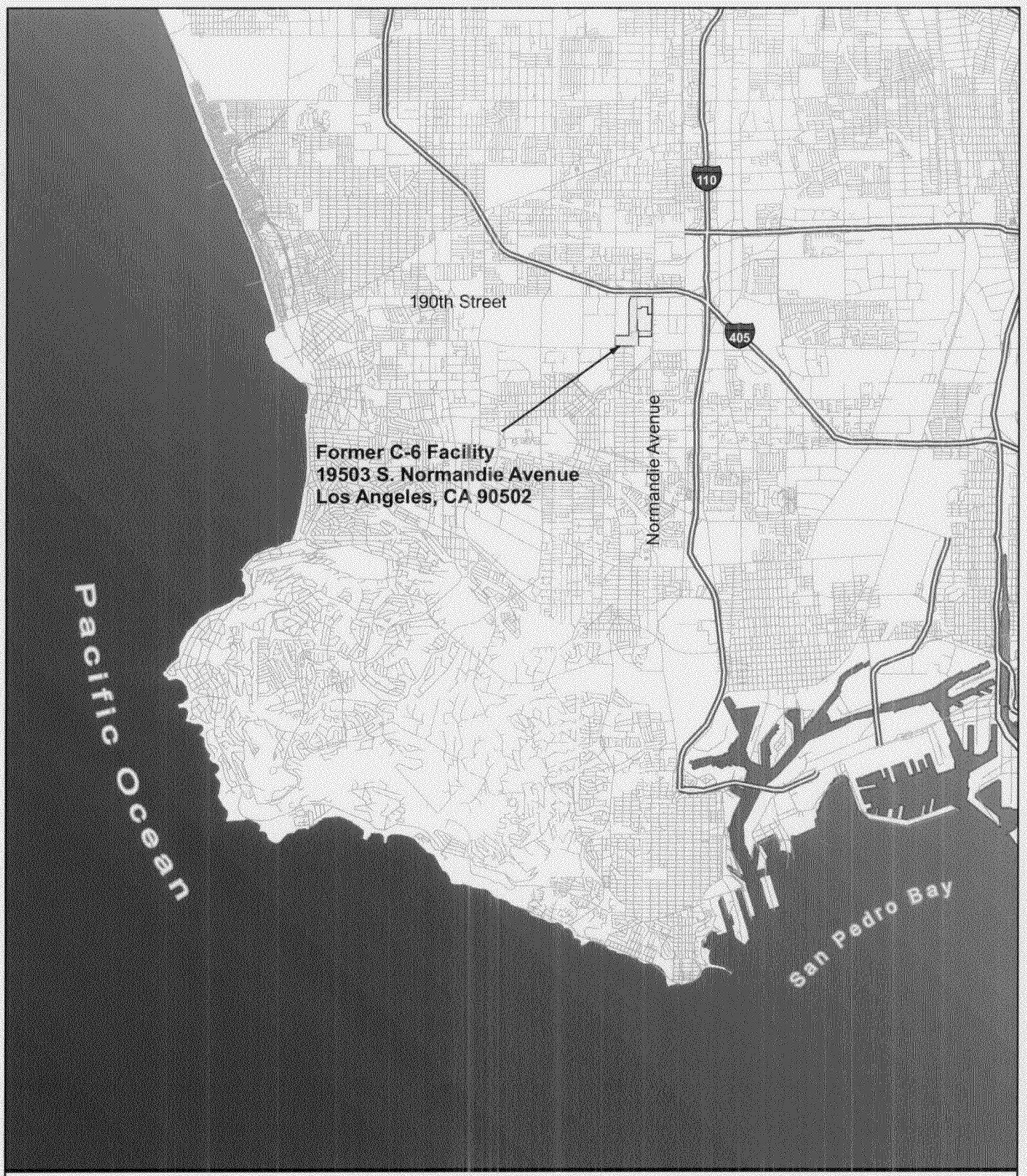


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Figure 1

Boeing Realty Corporation
Former C-6 Facility

**Site Vicinity Map**

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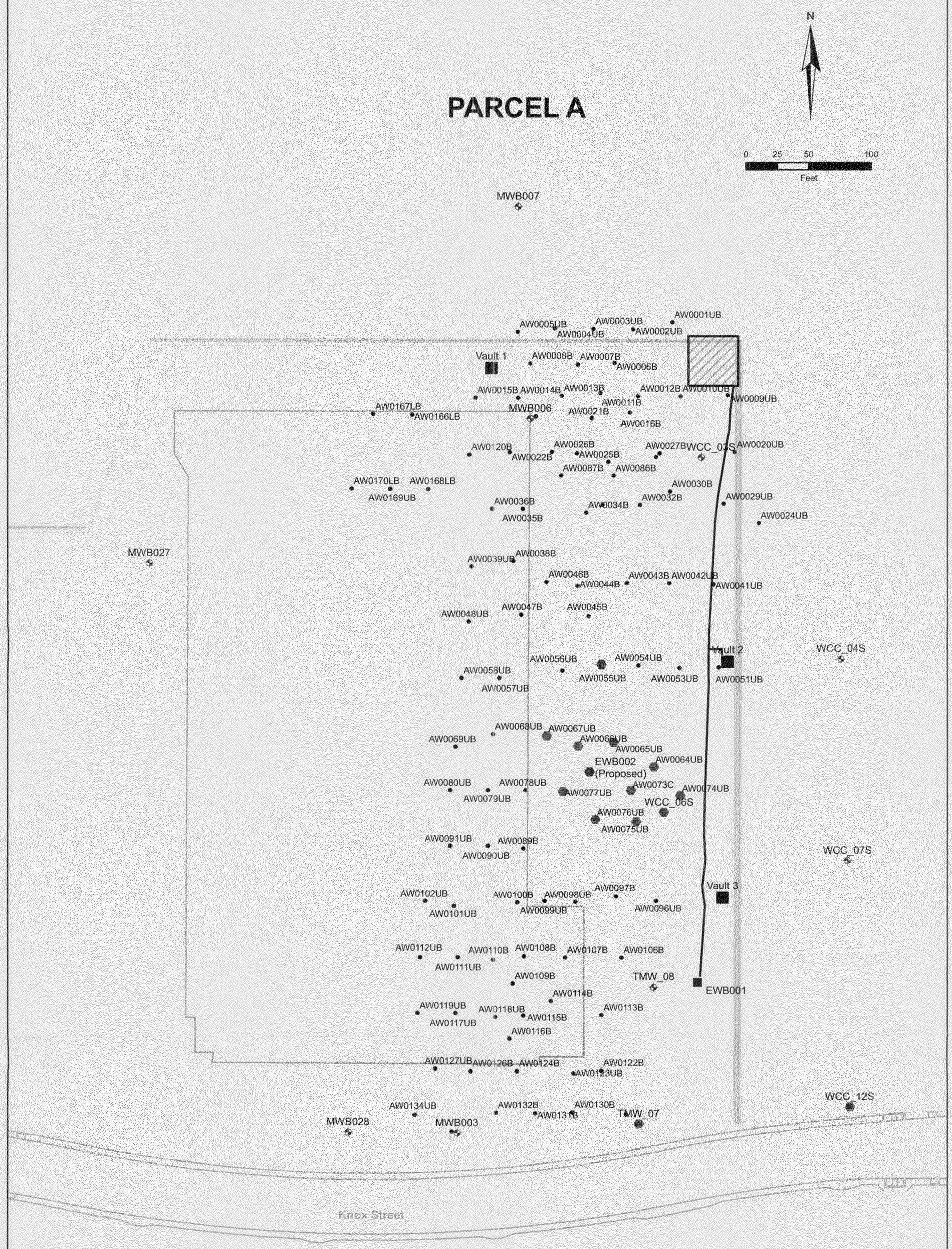
NOTE:
1. Existing well vaults and conveyance piping, as shown, will be used to transport extracted groundwater to the treatment compound and amended water back to select amendment wells.
2. A limited subset of the existing amendment and monitoring wells will be used for the pilot study.




March 5, 2007

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**Legend**

- Property Boundary
- Parcel Boundary
- Existing Compound
- Existing Vault
- B-Sand Extraction Well
- B-Sand Monitoring Well
- B-Sand Amendment Well
- Existing Spare Electrical Conduit and Water Piping
- Group A Amendment Well (Upper B-Sand)
- Proposed Group B Monitoring Well (Upper B-Sand)
- Group B Monitoring Well ((5) Upper B-Sand and (1) C-Sand)
- Group C Downgradient Well (B-Sand)
- Group D Upgradient Well (Upper B-Sand)

**Boeing Realty Corporation**
**Former C-6 Facility**
***Proposed Biorecirculation Pilot Study Well Layout***

Figure 2

HISTORY AND WORK ZONES

HISTORY: Prior site history has contributed to groundwater contamination at the site. Two primary source areas have been identified at the Site (Former Buildings 2 and 1/36). The primary VOCs in the Building 2 and Building 1/36 areas vary slightly. The Building 2 primary VOCs include trichloroethene (TCE), 1,1-dichloroethene (1,1,-DCE), and chloroform. The Building 1/36 primary VOCs include TCE, 1,1-DCE, methyl ethyl ketone (MEK [2-butanone]), toluene, and 1,1,1-trichloroethane (1,1,1-TCA). Site work will include the generation of soil, groundwater, and other investigation-derived waste (IDW) contaminated with chlorinated VOCs.

WASTE TYPES: ( ) Solid ( ) Sludge (X) Liquids (X) Soils (see note on page 10)

HAZARDS OF CONCERN:

(X ) Heat/Cold Stress
(X ) Noise
(X ) Volatile Organic Chemicals
(X ) Slips, Trips, & Falls
(X ) Motorized Traffic
(X ) Heavy Machinery
(X ) Other specify: Trenches, electrical

WASTE CHARACTERISTICS:

(X) Toxic
(X) Volatile
(X) Carcinogenic

ADDITIONAL GUIDELINES: Additional work guidelines are attached for the following tasks: housekeeping, manual material handling, electrical safety, lockout/tagout procedures, excavations, ladders, tools and power equipment, heat stress, working around heavy equipment, flammable and combustible materials, working safely around drill equipment, hazardous waste site controls, hazardous waste site decontamination, traffic and work zone safety, and cell phone safety. These guidelines shall be followed during all site work and all workers should be familiar with any guidelines relevant to their work activities.

ALCOHOL & DRUG POLICY: CDM policy strictly prohibits the unlawful manufacture, distribution, dispensation, possession, or use of illegal drugs, alcohol or controlled substances by any employee on or near the firm's premises or vehicles, during working hours or before reporting to work.

Violation of this policy will result in appropriate discipline, up to and including immediate discharge. Employees are cautioned that discipline under this policy may include satisfactory participation in a substance abuse assistance or rehabilitation program as a condition of continued employment.

Substance abuse assistance and rehabilitation programs are available through the firm's Employee Assistance Program (EAP). Employees with substance abuse problems are strongly encouraged to participate in these programs.

A complete copy of the CDM policy on Drugs and alcohol is located in the CDM Health and safety Manual to be located at the site with the CDM superintendent.

SITE SPECIFIC SAFETY: The site safety plan will be used as a companion to the CDM Safety Manual. A copy of the manual will be maintained on the project site at all times by the CDM superintendent / SHSO. This HASP is also accompanied by AHAs (attached).

TRAINING: Personnel inside any work zone at the site (including the CRZ) shall be in compliance with all training and medical surveillance specified in the CDM Safety Manual, including current HAZWOPER training (as per 29 CFR) and medical surveillance.

INJURY AND ILLNESS PREVENTION: CDM's purpose for the Health and Safety Program is the reduction of the number of illnesses and injuries to an absolute minimum. The firm's goal is not merely to keep pace with, but to surpass industry safety standards, with an ultimate goal of zero accidents and injuries.

To achieve these objectives, CDM's corporate strategy includes the following elements:

- Identification and employment of quality employees.
- Quality, consistent, and ongoing health and safety training programs. Identification and appraisal of accident and loss producing conditions and practices.
- Communication of accident and loss control intervention to all layers of management.
- Assigning accountability and responsibility to all employees for implementation and maintenance of methods, procedures, and practices involved with the Health and Safety Program.
- Measurement and evaluation of the effectiveness of the accident and loss control system.

A complete copy of CDM's policy regarding injury and illness prevention can be found in Section 3 of the Health and Safety Manual to be located at the site with the CDM superintendent.



BOE-C6-0118578

HISTORY AND WORK ZONES (Continued)

**WORK ZONES:**

**Work zones(WZ) will be established for all tasks associated with this project work. Because most of the work areas will change based on the tasks to be performed , work zones will be established and periodically re-established at each location. Work zones may encompass the site as shown on the site plan. Protective clothing and equipment, as described on Page 12 are to be worn by all personnel working within the restricted access WZ.**

**Exclusion Zone (EZ):**

- **EZ for Task 4 (IDW management) will be a 10-foot radius radius around each work area.**
- **EZ for Tasks 9 (O&M) will include the entire Connex box or remediation compound whenever there is a break in process piping (e.g. sampling or maintenance), but otherwise not have an EZ.**
- **Drilling-Related Activities (Task 2): EZ around the drill rig will be at least 1.5 times the height of the mast. Only personnel necessary for the immediate task being performed should be inside the exclusion zone.**
- **No EZ is anticipated for trenching-related or other non-intrusive activities (Tasks 1, 3, 5, 6, 7, and 8), because extensive site soil remediation has previously been conducted at the site and the trench materials are expected to be non-native fill material. In the event impacted soils are encountered, the EZ will include all areas where potentially contaminated materials are present, excavated, or handled, and where contaminated equipment or personnel may travel. At a minimum the EZ will consist of the entire area for the excavation and stockpiling and soil processing areas. The perimeter of all open trenches will be defined with temporary fencing and caution tape. Trench plates will be used as necessary to cover open trenches.**

**The Contamination Reduction Zone (CRZ) is sometimes referred to as the decontamination area, or "decon area". The CRZ also serves as the point of entrance and exit between the exclusion and support zones. One central CRZ will be established in the general work area and used for all Level D activities If Level C is worn, a CRZ will be established immediately adjacent to the EZ and lined with plastic for all equipment and personnel decontamination, to the extent possible. All protective equipment will be removed in the CRZ.**

**The Support Zone (SZ) is typically located on the outermost part of the Site in a clean or non contaminated area. Support equipment is located in this zone. Potentially contaminated garments, equipment, and samples are permitted in this zone only after they have been decontaminated or properly packaged for disposal. One central support zone will be selected, which will be the staging area for contractor's field trailer, heavy equipment and field personnel parking (as needed). Unauthorized personnel and the general public will not be allowed within any work zones, including the support zone.**



BOE-C6-0118579

HAZARDOUS MATERIAL SUMMARY

| CHEMICALS | SOLIDS | SLUDGES | SOLVENTS | OILS | OTHER |
|---|---|---|---|---|---|
| **Gasoline**<br>**Diesel**<br>**PVC glue and primer**<br>**Pipe lubricant**<br><br>**Electron donor solutions (60% Sodium Lactate, Whey Powder or Newman Zone); Bioaugmentation Cultures (Shaw's SDC-9™ culture, or SiREM's KB-1™); Biofouling control chemicals (chlorine dioxide [CAS 10049-04-4] and/or hypochlorite [CAS 7778-54-3] or a weak organic acid [i.e., LBA cleaner])** | **Drill cuttings** | | | | **Groundwater impacted with VOCs generated from sampling, well installation, and aquifer testing**<br><br>**Decontamination fluids and materials** |



BOE-C6-0118580

**HAZARDOUS MATERIAL SUMMARY (contd.)**

**PROPER STORAGE OF HAZARDOUS MATERIALS:**

**Gasoline and Diesel will be stored in approved metal safety type cans only.**

**PVC Glue & Primer will be stored in their original containers, and in accordance with Flammable materials storage requirements.**

**Pipe Lubricant will be properly stored according to the manufacturer's specifications.**

**All materials (electron donor solutions, cultures, biofouling chemicals, etc) brought onto the site will be accompanied by an MSDS; NO EXCEPTIONS. MSDS sheets for the site will be stored at the site and updated regularly. Furthermore, all chemicals will be handled in a manner consistent with the MSDS. All site workers will be aware of MSDS locations for access during emergencies.**

**All investigation derived waste (IDW), such as purged groundwater, decontamination water and related-materials, soil cuttings from drilling operations, etc, will be containerized and managed as hazardous waste pending waste profiling and disposal.**

**FIRE/EXPLOSION POTENTIAL:** ( ) High ( ) Medium **(X) Low** ( ) Unknown

**BACKGROUND REVIEW: (X) COMPLETE** ( ) INCOMPLETE



BOE-C6-0118581

**HAZARDS ASSOCIATED WITH KNOWN CONTAMINANTS**

| KNOWN CONTAMINANTS | HIGHEST OBSERVED CONCENTRATION (Media) | PEL/TLV ppm or mg/m$^3$ | IDLH ppm or mg/m$^3$ | WARNING CONCENTRATION ppm | SYMPTOMS/EFFECTS OF ACUTE EXPOSURE | PHOTO-IONIZATION POTENTIAL |
|---|---|---|---|---|---|---|
| Trichloroethene | 490 mg/Kg (S)<br>29 mg/L (GW) | 25 ppm | 1,000 ppm | 82 ppm | Vertigo, visual disturbance, headache, drowsiness | 9.45 |
| 1,1,1-Trichloroethane | 300 mg/Kg (S)<br>110 mg/L (GW) | 350 ppm | 700 ppm | 400 ppm | Headache, CNS depression, loss of balance, eye irritation | 11.00 |
| 1,1-Dichloroethene | 390 mg/Kg (S)<br>88 mg/L (GW) | 1 ppm | >500 ppm | 1.1 ppm | No acute effects | <11.0 |
| Benzene | 0.39 mg/L (GW) | 0.5 ppm | 500 ppm | 61 ppm | Eye & nose irritation, headache, giddiness, nausea, fatigue | 9.25 |
| Methyl Ethyl Ketone | 21 mg/L (GW) | 200 ppm | 3,000 ppm | 5.5 ppm | Irritated eyes, dizziness, vomiting | 9.53 |
| Methyl Isobutyl Ketone | 100 mg/L (GW) | 50 ppm | 500 ppm | 0.88 ppm | Irritated eyes, nose & throat, narcosis, headache | 9.30 |
| Toluene | 140 mg/L (GW) | 50 ppm | 500 ppm | 1.7 ppm | Fatigue, confusion, euphoria, dizziness, headache, tears | 8.82 |

| | | | | |
|---|---|---|---|---|
| NA=Not Available<br>NE=None Established<br>U=Unknown | SW=Surface Water<br>GW=Groundwater<br>A=Air<br>W=Waste | SU=Surficial<br>I=Intermediate<br>F=Floridan | SD=Sediment<br>T=Tailings<br>SL=Sludge<br>D=Drums | TK=Tanks<br>L=Lagoon<br>S=Soil (see note below)<br>OFF=Offsite |

TLV – Threshold Limit Value, *Threshold Limit Values for Chemical Substances and Physical Agents*, American Conference of Governmental Industrial Hygienists
PEL – Permissible Exposure Limit, 29 CFR (Code of Federal Regulations) Part 1910, Subpart Z
IDLH – Immediately Dangerous to Life or Health Concentrations – *NIOSH Pocket Guide to Chemical Hazards*, National Institute for Occupational Safety and Health

(See note on following page regarding soil concentrations)



BOE-C6-0118582

**HAZARDS ASSOCIATED WITH KNOWN CONTAMINANTS (CONTINUED)**

| KNOWN CONTAMINANTS | HIGHEST OBSERVED CONCENTRATION (Media) | PEL/TLV ppm or mg/m$^3$ | IDLH ppm or mg/m$^3$ | WARNING CONCENTRATION ppm | SYMPTOMS/EFFECTS OF ACUTE EXPOSURE | PHOTO-IONIZATION POTENTIAL |
|---|---|---|---|---|---|---|
| Diesel Fuel | 20,000 mg/Kg (S) | 100 mg/m3 | NE | 10 ppm | Vomiting, diarrhea, insomnia, dizziness, headache | NA |
| PCBs | 9.8 mg/Kg (S) | 500 µg/m3 | 5 mg/m3 | Mist | Irritated eyes, chloracne | Mist |
| Arsenic | 350 mg/Kg (S) | 10 µg/m3 | 5 mg/m3 | Dust | Nasal ulcers, fever, bronchitis, melanosis, peripheral neuropathy | Dust |
| Chromium compounds | 491 mg/Kg (S) – Hexavalent chromium | 1 µg of Cr(VI) / m3 | 15 mg of Cr(VI) / m3 | Dust | Lung damage, skin sensitization | Dust |
| Lead | 1790 mg/Kg (S) | 50 µg/m3 | 100 mg/m3 | Dust | Fatigue, pallor, colic, insomnia | Dust |

| | | | | |
|---|---|---|---|---|
| NA=Not Available | SW=Surface Water | SU=Surficial | SD=Sediment | TK=Tanks |
| NE=None Established | GW=Groundwater | I=Intermediate | T=Tailings | L=Lagoon |
| U=Unknown | A=Air | F=Floridan | SL=Sludge | S=Soil (see note below) |
| | W=Waste | | D=Drums | OFF=Offsite |

TLV – Threshold Limit Value, *Threshold Limit Values for Chemical Substances and Physical Agents*, American Conference of Governmental Industrial Hygienists
PEL – Permissible Exposure Limit, 29 CFR (Code of Federal Regulations) Part 1910, Subpart Z
IDLH – Immediately Dangerous to Life or Health Concentrations – *NIOSH Pocket Guide to Chemical Hazards*, National Institute for Occupational Safety and Health

**Note: Site operations, with the exception of drilling (task 2), are not expected to encounter any contaminated soil.** All trenching should be shallow (less than 4 feet below ground surface) and should only encounter non-native clean fill. However, if site personnel encounter potentially contaminated soils during drilling or any other intrusive site work, they should take preventative measures to limit exposure. This shall include donning Tyvek coveralls and other PPE as needed to minimize transport of and exposure to potentially contaminated soil. In the event of exposure, proper decontamination procedures must be undertaken as soon as possible (see page 16 of this plan for decontamination procedures), and the appropriate HSM notified.



BOE-C6-0118583

FIELD ACTIVITIES

| TASK DESCRIPTION/SPECIFIC TECHNIQUE-STANDARD OPERATING PROCEDURES/SITE LOCATION | Type | Primary | Contingency | HAZARD/ ACTIVITY SCHEDULE | | |
|---|---|---|---|---|---|---|
| | | | | Hi | Med | Low |
| 1) Wellhead modifications | Intrusive | Level D | Level C | | xxx | |
| 2) Drill, complete, develop new well EWB002 | Intrusive | Level D | Level C | | xxx | |
| 3) Sawcut and excavate for trench (up to 4' bgs) and vault, place piping/conduits in trench, pressure test piping, working around existing remediation piping | Intrusive | Level D | Level C | | xxx | |
| 4) Manage IDW from well installation and trenching activities | Intrusive | Level D | Level C | | xxx | |
| 5) Move Bldg 3 injection system Connex box and place at site, install solid mixing equipment trailer equipment inside compound using crane, perform aboveground mechanical modifications (piping, valves, tanks) to the existing compound, Connex box and solid mixing trailer | Intrusive | Level D | Level C | | xxx | |
| 6) Backfill trench, replace paving and striping, and grout vault openings | Non-intrusive | Level D | Level C | | xxx | |
| 7) Survey location of constructed items | Non-intrusive | Level D | Level D | | | xxx |
| 8) Perform electrical connections and wire in new instrumentation | Non-intrusive | Level D | Level D | | xxx | |
| 9) Shakedown, operation and maintenance of groundwater treatment system | Intrusive | Level D | Level C | | xxx | |



BOE-C6-0118584

**PROTECTIVE EQUIPMENT**

| **Primary: All Tasks**<br><br>**LEVEL D – Modified** | | **Contingency: All Tasks (except 7 and 8 – should not be necessary for those non-intrusive tasks)**<br><br>**LEVEL C – Modified** | |
|---|---|---|---|
| **Respiratory: (X ) Not Needed**<br>( ) SCBA, Airline<br>( ) APR<br>( ) Cartridge:<br>( ) Escape Mask<br>( ) Other | **Prot. Clothing:** ( ) Not Needed<br>**(X) Tyvek Coverall (as needed and for Tasks 2 and 4)**<br>**(X) Cloth Coverall (otherwise)**<br>**(X) Traffic/high visibility vest** | **Respiratory:** ( ) Not Needed<br>( ) SCBA, Airline<br>**(X) APR (Full face preferrable)**<br>**(X) Cartridge: Organic Vapor/HEPA/Acid Gases**<br>( ) Escape Mask<br>( ) Other | **Prot. Clothing:** ( ) Not Needed<br>**(X) Tyvek Coverall**<br>( ) Cloth Coverall<br>**(X) Traffic/high visibility vest** |
| **Head and Eye:** ( ) Not Needed<br>**(X ) Safety Glasses**<br>( ) Face Shield<br>( ) Goggles<br>**(X) Hard Hat (all Tasks except 10)**<br>( ) Other | **Gloves: (X) Not Needed for Task 7 only**<br>**(X) Undergloves (Type: nitrile)**<br>**(X) Gloves (Type: Leather as needed or nitrile)**<br>( ) Overgloves | **Head and Eye:** ( ) Not Needed<br>(X) Safety Glasses<br>( ) Face Shield<br>( ) Goggles<br>**(X) Hard Hat (all Tasks except 10)**<br>( ) Other | **Gloves:** ( ) Not Needed<br>**(X) Undergloves (Type: nitrile)**<br>**(X) Gloves (Type: Leather as needed or nitrile)**<br>( ) Overgloves |
| **Boots:** ( ) Not Needed<br>**(X) Boots: Leather work boots with steel toes**<br>( ) Overboots<br>( ) Rubber | ( ) Other – specify below:<br>**Hearing Protection as needed**<br><br>***SHSO can upgrade or downgrade PPE requirements, as conditions warrant.*** | **Boots:** ( ) Not Needed<br>**(X) Boots: Leather work boots with steel toes**<br>( ) Overboots<br>( ) Rubber | ( ) Other - specify below:<br>**Hearing Protection as needed**<br><br>***SHSO can upgrade or downgrade PPE requirements, as conditions warrant.*** |



BOE-C6-0118585

**MONITORING EQUIPMENT**

| INSTRUMENT | TASK | ACTION GUIDELINES | COMMENTS (Includes schedules of use) |
|---|---|---|---|
| Combustible Gas Indicator | All Excavation | 0-10% LEL No explosion hazard<br>10-25% LEL Potential explosion hazard; notify SHSO.<br>**>25% LEL Explosion hazard; interrupt task/evacuate**<br>21.0% $0_2$ Oxygen normal<br>**<19.5% $0_2$ Interrupt task/evacuate** | **Contractor will take readings prior to entering an excavation, trench or if augering is being conducted, to determine if flammable vapors, oxygen deficiency or other hazards exist. Continue monitoring during all excavation work.** |
| Radiation Survey Meter | | | **(X) Not Needed** |
| Photo Ionization Detector | All intrusive tasks | Monitor VOC levels in breathing zones.<br>Background – 1 ppm: Level D<br>1 – 5: Level D and use gas detector tubes<br>5 – 50 ppm: Level C<br>> 50 ppm: **Exit exclusion zone** | **Use PID with 11 eV lamp (or greater) to improve detection of chlorinated solvent compounds.** |
| Flame Ionization Detector<br>Type : | | | **(X) Not Needed** |
| Detector Tubes/Monitox<br><br>Type | | Use gas detector tubes as needed (see above) to test for presence of benzene and 1,1-dichloroethene.<br><br>Use Level C if detections are made above the PEL for each compound (see page 9). If full-face respirators are used, exit the exclusion zone if concentrations are 10 times the PEL. If half-face respirators are used, exit if concentrations are 5 times the PEL. | **May need to use trichloroethene gas detector tube to detect 1,1-dichloroethene.** |
| Respirable Dust Monitor<br><br>Type Visual Observation and Mini-Ram PDM 3 | | Site workers shall employ engineering controls and best management practices to reduce any observed visible dust, especially during drilling operations (tasks 2 and 4). Periodically, site workers shall use Mini-Ram and air surveillance monitoring as described on Page 14. Engineering controls are also summarized on Page 14. | **See note regarding soil contamination on page 10.** |



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## AIR SURVEILLANCE PROCEDURES

Real-time monitoring for airborne dust will be performed during all intrusive activities using a Mini-Ram PDM 3 or comparable. Monitoring will be conducted in or near the breathing zones of site personnel, at the perimeter of the Work Zone and at the perimeter of the property if appropriate based on airborne dust concentrations exceeding Work Zone perimeter action limits. Dust monitoring surveys outside of the Work Zone will be conducted as/if necessary during the initial phase of excavation if visible dust is present and after that, at a frequency based on site conditions.

The action levels for PPE upgrades are:

< 1mg/ m3 dust - Level D
> 1mg/ m3 dust* sustained for 1 minute - Level C

- 2 mg/ m3 sustained for 1 minute – stop work, apply water to materials being handled and or haul roads, when dust levels drop below the action level , re-start work and continuous monitor for 30 minutes if dust levels remain below 2 mg/m3, monitoring frequency and dust control methods will return to normal.

The action levels for the Work Zone perimeter are:

< 1 mg/ m3 dust - continue routine application of dust control methods
> 2 mg/ m3 dust sustained for 1 minute - stop work, apply water to materials being handled and or haul roads, move to project perimeter and make measurements upwind and downwind, continue monitoring at project perimeter until dust levels fall below 1 mg/m3 and then return to Work Zone perimeter, when dust levels drop below action level of 1 mg/m3 at Work Zone perimeter, re-start work and continuous monitor for 30 minutes, if dust levels remain below 1 mg/ m3, monitoring frequency and dust control methods will return to normal. If it is discovered that the Work Zone perimeter action limit does not protect against dust excursions at the project perimeter, reduce the Work Zone action limit by 25%.



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BIOLOGICAL HAZARDS (As applicable)

The biological hazards that site personnel may encounter are animal bites, insect stings and contact with local flora.

Bites and Stings

Animal bites and insect stings are usually nuisances (i.e. localized swelling, itching, and minor pain) that can be handled with first-aid treatments. The bites of certain poisonous snakes, insects and spiders contain sufficient poison to warrant medical attention. Intentional handling of insects, and animals is prohibited. There are diseases that can be transmitted by insect and animal bites. Examples are Rocky Mountain spotted fever, lyme disease (tick), rabies (mainly dogs, skunks and foxes) and equine encephalitis (mosquito). The greatest hazard and most common cause of fatalities from animal bites, particularly from bees, wasps, and spiders, is a sensitivity reaction. Anaphylactic shock due to stings can lead to severe reactions in the circulatory, respiratory, and central nervous systems, which can also result in death.

Lyme disease is spread primarily by a very small tick -- the deer tick. It can be found near wooded areas, tall grass and brush. Although the disease is rarely fatal, it can cause flu-like symptoms, arthritis, heart arrhythmia's, facial palsy, severe headaches, and loss of sensation. Protection against the tick consists of wearing clothing that covers the whole body, tucking pant legs into boots or socks and tucking a long-sleeve shirt into pants. A white tyvek is recommended for protection. Use of repellents containing DEET is also effective. It is also important to frequently check for the ticks, which are about the size of a period on this page. Some warning signs include a "bull's-eye" rash that may appear days to weeks after the bite, flu-like symptoms, swelling and pain in joints and, less common, heart arrhythmia, weakness in legs, facial paralysis and numbness. If employees feel they may have contracted the disease, they must notify the SHSC or their respective CHSO.

If an animal bite occurs, the SHSO must be notified. Steps will then be taken to locate the animal and contact the local animal shelter in order to determine if the animal has rabies.

Contact with Local Flora

The most dangerous toxic effects from plants are due to ingestion of nuts, fruits, or leaves. Consequently, personnel are prohibited from eating any fruits, nuts, or other plant material which may grow on the site. Of more concern to response personnel are certain plants including poison ivy, poison oak, and poison sumac, which produce adverse effects from direct contact. The usual effect is an allergic dermatitis--inflammation of the skin. The protective clothing and decontamination procedures used for chemicals reduce the exposure risk to the plant toxins. Cleaning the skin thoroughly with soap and warm water immediately after contact will reduce risk as well as the use of pre-exposure creams.



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## DECONTAMINATION PROCEDURES (CONTINGENCY PLAN IF SITUATIONS WARRANT)

Decontamination of equipment and personnel will be performed to limit the potential migration of contaminants outside the Project Limits (the estimated waste/excavation boundary). All equipment and personnel will be decontaminated before leaving the Property (Trench and Site Grading).

As a general practice, equipment, such as excavators, bulldozers, etc. will remain within the Excavation/Work Zone for the duration of excavation activities, in order to minimize the potential migration of contaminants outside the Project Limits. In addition, the sequence of excavation has been designed to avoid the movement of machinery and personnel over areas within the Work Zone that have been excavated.

Specific procedures will be followed to prevent trackout of soils from the Site Grading and/or Trench Excavation(s) by machinery and personnel. Egress of machinery and personnel that have been working within the Site Grading and Trench areas must pass through a Contaminant Reduction Area (the decontamination pad) at the boundaries of the Site Grading and Trench Excavation.

*>Personnel Decontamination*
All site personnel will minimize contact with contaminants in order to minimize the need for extensive decontamination. A standard, typical decontamination sequence is presented below. Personnel decontamination will be conducted adjacent to the decontamination pad. Typical gross decontamination will include:

- Remove coverall and dispose
- Outer glove wash/rinse
- Remove outer gloves and dispose of or store on gloverack if reuseable
- Boot wash/rinse
- Remove outer boots and place onto bootrack (or dispose if disposable)
- Rinse hard hat (inside and out) if visibly soiled
- Remove respirator (if worn)
- Wash/rinse respirator (inside and out) and hang for drying (Don't get cartridges wet)
- Remove inner gloves, if worn, and discard

Personal hygiene, hand and face washing, following decontamination will take place in the Support Zone.

Personnel decontamination equipment consists of two wash tubs (boot wash), trash cans with liners (disposable PPE), 5 gallon buckets (glove wash and rinse and respirator wash, sanitize and rinse), brushes, water supply, and detergent. Boot, glove and respirator cleaning and rinsing solutions will be changed at least daily.

*>Reusable Sampling Equipment*
Reusable equipment should be cleaned in the following manner:
- Detergent in water
- Tap water
- Deionized Water
- Air dry

*NOTE: Take particular precautions not to get the "Sensors" wet in "Real Time" or "Instant Readout" units.*

Heavy Equipment Decontamination
In order to prevent trackout of soils from the Site Grading and Trench Excavation areas, machinery exiting those areas will travel into the Contaminant Reduction Zone (decontamination pad) and be inspected for the presence of soil or solid contaminants on the tires or other parts of the machinery. Soil or solid contaminants will be mechanically removed from the equipment through brushing or other practicable means before the equipment leaves the decontamination pad. Hand tools will be used for gross removal of solids. A high-pressure water wash *may* follow. Decontamination will be verified visually. *No visible soil will be the benchmark for a decontaminated piece of equipment.*

*>Disposition of Decontamination Wastes*
All equipment and solvents used for decontamination shall be decontaminated or disposed of properly. All disposable PPE will be containerized and properly disposed. All removed material will be managed as hazardous waste, and will be collected, containerized, characterized and appropriately disposed.

*>Management of Decontamination Wash Water*
Decontamination wash water collected will be pumped on an as-needed basis into a polyethylene tank or drums, located adjacent to the decontamination pad. All aqueous liquids generated in the personnel and equipment decontamination process will be managed as hazardous waste, and will be collected, containerized, characterized and appropriately disposed.



BOE-C6-0118589

## ROLES AND RESPONSIBILITIES

### Regional Health and Safety Manager (RHSM)

- Advises and supports management on safety needs and issues.
- Prepares and approves HASPs and conducts training, site safety audits, and accident investigations.
- Measures safety performance and provides feedback and recommendations to the Chief Operating Officer.
- Reviews this Health and Safety Plan periodically and amends it accordingly.
- Assists project staff in developing and implementing site safety programs.

### Project Manager

- Plans at the proposal stage and during project kick-off for compliance with this HASP.
- Performs accident investigations (CDM employee injuries only). In cases where second-tier subcontractors are involved, the construction manager notifies the Corporate H&S Director (CHSD) immediately, and the CHSD will collect appropriate injury or accident documentation.
- Performs and supports site safety audits and promptly addressing deficiencies.
- Conducts initial site orientation meetings.

### Construction Superintendent and Site Health and Safety Officer (SHSO)

- Overall site emergency coordinator.
- Implements the procedures and guidelines outlined in this Health and Safety.
- Conducts weekly safety meetings.
- Maintains documentation in support of the HASP.
- Amends HASP when necessary.
- Verifies and documents proper permits and clearances.
- Maintains health and safety equipment and supplies, including first aid kit, fire extinguisher, barricade tape, decontamination equipment, materials and fluids, traffic safety equipment, and drum dolly (as needed).
- Responsible for equipment calibration (can delegate calibration duties)
- Responsible for onsite H&S monitoring (can delegate monitoring duties)
- Ensures that a copy of this HASP is on site and available to all employees.

The SHSO has the authority to shut down jobs where safety conditions warrant such action.

### Employees and Subcontractors

- Learn and understand the hazards of the tasks expected
- Follow the guidelines presented in this HASP.
- Follow procedures outlined at Toolbox Safety Meetings.
- Report unsafe conditions or practices to the SHSO immediately.
- Report all injuries, illnesses, falls, and near misses to the SHSO immediately.
- Offer suggestions to maintain a safe work site.
- Inspect equipment, tools, and work areas and maintain safe working conditions by repairing and reporting deficiencies.
- Maintain proper and positive health and safety attitudes.
- Advise the SHSO of any medication that is required to be taken during the performance of any site activity.



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**HASP CONFORMANCE SIGNATURES**
**(ALL INDIVIDUALS WORKING ON THE PROJECT MUST READ AND SIGN INCLUDING SUBCONTRACTORS)**

**The following personnel have read and fully understand the contents of this Health and Safety Plan and further agree to all requirements contained herein.**

| Name | Affiliation | Date | Signature |
|---|---|---|---|
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BOE-C6-0118591

## SITE-SPECIFIC CONTINGENCY PLAN

**Purpose**
The purpose of this document is to detail the procedures that are to be followed in the event of an emergency. This plan will be distributed to local emergency response agencies as appropriate for their information and use in response to the activities that may take place at the site. Emergency response agencies include the local hospital, fire department, sheriff's department and emergency medical services.

**Current Operations**
The Former Building 1/36 area of the Former C-6 Facility is located at 1451 Knox Street, Los Angeles, CA 9050. The site consists of new industrial office space, and the surrounding area consists primarily of industrial and commercial properties with some residential developments.

**Emergency Coordinator**
If a fire, injury, or any other emergency condition should occur, the appropriate personnel and agencies listed in this document will be immediately notified. The list will be updated whenever changes occur.

The Site Health and Safety Officer (SHSO) will be responsible for emergency coordination activities. The CDM Project Manager will be the Primary Emergency Coordinator, and will be contacted by the SHSO during emergency situations. The SHSO will be familiar with all aspects of the site Contingency Plan, all operations and activities at the facility, the location and characteristics of hazardous materials, the location of all records, and the site layout. In addition, the SHSO and designated alternates will be properly trained in Emergency Response procedures.

The SHSO and designated alternates have the authority to commit all the resources needed to implement the Contingency Plan. At all times, there is at least one designated Emergency Coordinator, either on the facility premises or on call, who has the responsibility for coordinating all emergency response measures associated with hazardous waste management areas.

**Training**
Personnel training will be conducted by the SHSO or a qualified representative through initial briefings and periodic reviews for all personnel involved in site activities. The SHSO will determine the appropriate training level for site workers
Training elements will include an overview of the facility, detailed instructions on site-specific operations, and use of emergency equipment, such as fire extinguisher, and two-way radios if alternate communication is needed.

Personnel who may be called upon to use a fire extinguisher will be trained in their use and selection at the beginning of site work. Training will include documentation that informs personnel how to respond effectively to potential emergencies, and familiarizes personnel with emergency procedures.

All field team personnel will be required to read and understand the site-specific Health and Safety Plan (HASP), which incorporates this Contingency Plan. Personnel will verify that they have read, understand, and agree to comply with the requirements of the HASP by signing the plan. The HASP, which includes a list of emergency telephone numbers, will be posted at the site.

**Under no circumstances will CDM, its employees, or subcontractors allow persons not associated with the project or the client to cross the fence line at any time. This requirement is for the safety and protection of the general public as well all site workers. Anyone violating this policy will be immediately suspended from the site for a duration of time concurrent with Section 16 of the CDM Constructors Health and Safety Manual (Safety Discipline Policy). A complete copy of this manual is located at the site with the CDM superintendent.**



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## SITE-SPECIFIC CONTINGENCY PLAN

### Medical Emergencies

**Preparation**
This HASP identifies a nearby hospital, ambulance, occupational physician, and poison control center. The field team will keep approved first aid kits, in the vehicles used onsite.

**Response**
Emergency first aid treatment may be administered only by trained individuals. The purpose of treatment is to maintain life and/or prevent further injury until professional treatment can be obtained. If an employee is injured or exposed to hazardous substances the field team will take the following actions, as appropriate.

- Evacuate other persons threatened by the condition.
- Move the injured individual to a clean area (on a stretcher, if needed).
- Call the appropriate emergency medical response services (ambulance, fire, hospital, or poison control center) listed in the HASP.
- Remove contaminated clothing (if removal does not endanger the victim).
- Administer appropriate first aid to the injured party if adequate personal safety and blood-borne pathogen controls are available.
- Arrange transportation to local emergency medical facility.

Directions to the hospital are included at the end of this HASP. Emergency telephone numbers are also shown there. (Site Supt. To fill in as needed).

**Communications**
All emergency communications will be conducted by direct vocal communication. If teams work on multiple areas concurrently, communication between the teams will be by means of hand-held radios. Communication between work teams and other organizations will be over the telephone. A list of emergency telephone numbers is provided.

**Evacuation**
When an evacuation is necessary due to an emergency, all field team members will go to the designated assembly point. This area is normally just outside the facility exit gate. The SHSO will designate the assembly area and any other assembly points at the morning toolbox safety meeting, as appropriate. Evacuation routes and assembly points are outlined on page 21 of this plan.

### Fire Emergencies:

***Fire Watch***
Every member of the field team will be responsible for observing and reporting any fires, and conditions that could potentially lead to fires.

***Response to Fires***
If a team member observes a fire, he or she may attempt to quench the fire with a fire extinguisher, if one is readily available. If the fire cannot be readily extinguished, the team member will notify all personnel on site to evacuate the area immediately. All onsite personnel shall convene at the reassembly point identified by the SHSO, who in turn will immediately notify the fire department and the Primary Emergency Coordinator.

***Response to Conditions that May Cause Fires***
When a team member observes a condition that potentially increases the chance of a fire, he or she will immediately inform the SHSO of the condition. The SHSO will immediately cease any field activity that increases the risk of fire until appropriate controls are in place. The SHSO, with the advice of the Primary Emergency Coordinator, is responsible to take whatever actions are necessary, including withdrawal from the area, to eliminate or reduce the hazardous condition.



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# Site Evacuation Map & Assembly Point
# (To be completed on site)



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**EMERGENCY CONTACTS AND PHONE NUMBERS**
**(Note: Per Boeing requirements, ALL ONSITE PERSONNEL will have a Dash Card contining safe work practices, emergency and incident reporting procedures with key contact information, and hospital route map).**

| | | | |
|---|---|---|---|
| **CLIENT** | | | |
| **Owner/Operator Primary Emergency Coordinator**<br>Dennis Carlson | **Cell: (818) 535-7438** | **Alternate Owner Emergency Coordinator**<br>Joe Weidmann, Haley and Aldrich (BRC Oversight Consultant) | **Work: (805) 563-2426**<br>**Cell: (805) 451-2320** |
| **CDM** | | | |
| **Regional Health & Safety Manager :**<br>Joseph Leslie<br>**Corporate Health & Safety Manager:**<br>Steve Robinson | **Cell: 562-217-7152**<br><br>**Cell: 315-529-7050** | **Project Manager :** Ravi Subramanian | **Work: (949)-752-5452**<br>**Cell: (714) -308-2945** |
| **CDM Occupational Physician: Dr. Ivan Wolf**<br>**- Industrial Medical Associates**<br>**961 Canal Street, Syracuse, NY** | **315-478-1977** | **Construction Project Mgr./Alternate SHSO:**<br>Scott Supernaugh | **Work: (949) 752-5452**<br>**Cell : 562 572-0811** |
| | | **Construction Oversight/SHSO:**<br>Curtis Wilson | **Cell: (661) 341-0240** |
| | | **Secondary SHSO:**<br>Sharon Wallin | **Work: 949-752-5452** |
| **KEY SUBCONTRACTORS – JHA and ICS** | | | |
| **JHA Project Manager**<br>Greg Gibbs | **Cell: (714)-719-6856** | **ICS Project Manager**<br>John Heiser | **Cell: (714) 822-4561** |
| **JHA Site Lead**<br>Stan Jackson | **Cell: (562) -673-1754** | **ICS Site Lead**<br>John Roels | Cell:_____ |
| **Emergency Resources** | | | |
| **Emergency Response Contractors** | N/A | **Hospital -**<br>**Harbor UCLA Medical Center** | **310-222-2101** |
| **Fire Rescue**<br>**Police Department**<br>**Sheriff's Department** | **(911)**<br>**(911)**<br>**(911)** | **State Spill Control Number**<br>**Emergency Response** | **(800) 852-7550** |

**ATTENTION: 911 CALLS MADE BY CELL PHONES ARE ROUTED TO THE HIGHWAY PATROL WHICH DOES NO HAVE AUTOMATIC LOCATION AVAILABILITY. CALLERS SHOULD BE PREPARED TO PROVIDE ADDRESS AND/OR LOCATION TO EMERGENCY RESPONSE OPERATORS**

| | | | |
|---|---|---|---|
| **United States** | | **Other** | |
| **US EPA Release Report Number**<br>**US Coast Guard Hazardous Materials Spills**<br>**Chemical Transportation Emergency Center (CHEMTREC)** | **(800) 424-8802**<br>**(800) 424-8802**<br>**(800) 424-9300** | **Poison Information Center** | **1-800-452-7165** |



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HOSPITAL LOCATION

**Hospital Name:** Los Angeles County Harbor-UCLA Medical Center
**Phone:** 310-222-2101
**Hospital Address:** 1000 West Carson Street, Torrance, CA
**24-Hour Ambulance:** 911
**Distance to Hospital:** 1.93 miles from site (Approximately 4 Minutes)

**Route to Hospital:**

Route to the hospital depends on current site location, as Knox St does not go through to Normandie Avenue. All site workers shall understand how to drive to Normandie Ave from their current location.

From anywhere along Normandie Ave:

1. Start out going SOUTH on NORMANDIE AVE towards 196TH ST
2. After 1.5 miles, turn LEFT onto W CARSON ST
3. After 0.3 miles, stop at 1000 W CARSON ST

From elsewhere on the project:

1. Start out going WEST on KNOX ST towards HARBORGATE WAY
2. After 1 block, turn LEFT onto HARBORGATE WAY
3. After 1 block, turn LEFT onto FRANCISCO ST
4. After 1 block, turn RIGHT onto NORMANDIE AVE towards 196TH ST
5. After approximately 1 mile, turn LEFT onto W CARSON ST
6. After 0.3 miles, stop at 1000 W CARSON ST

(See attached hospital directions and site maps for more information)



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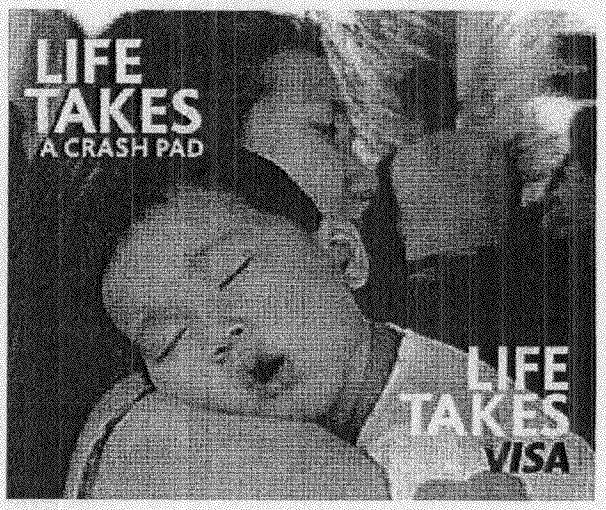
MAPQUEST




**Start:** **19503 Normandie Ave**
Torrance, CA 90502-1109, US

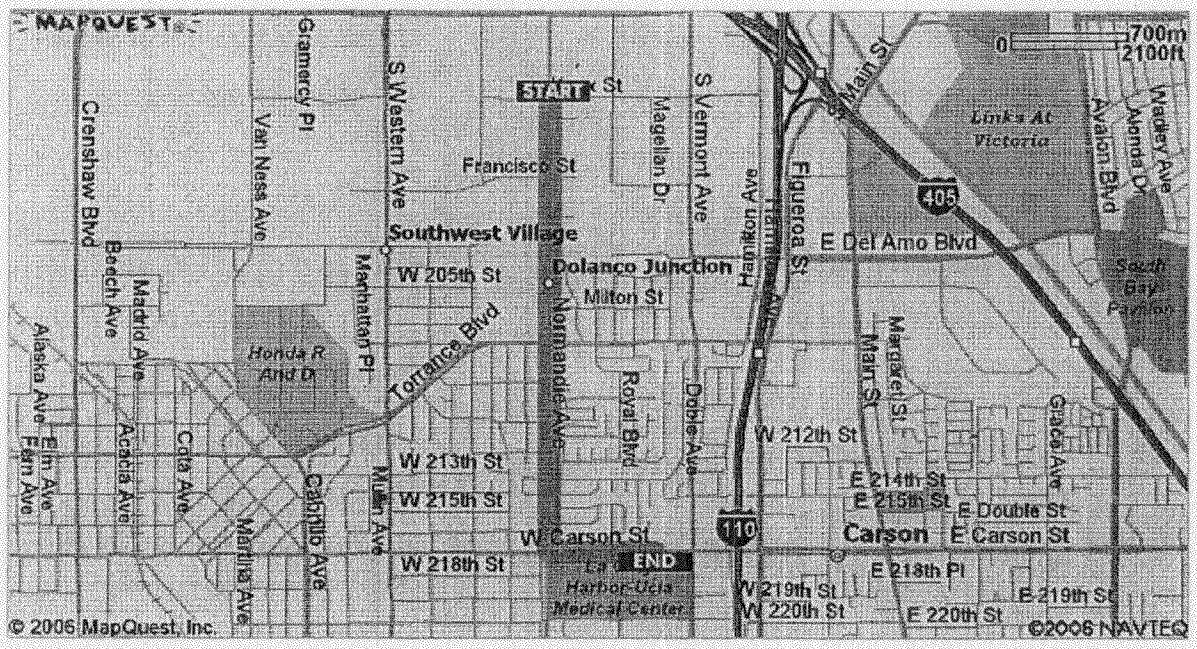
**End:** **Los Angeles County Hospitals**:
310-222-2345
1000 W Carson St, Torrance, CA 90502, US

**Notes:**

DIRECTIONS TO HOSPITAL FROM ALONG NORMANDIE AVE ONLY!

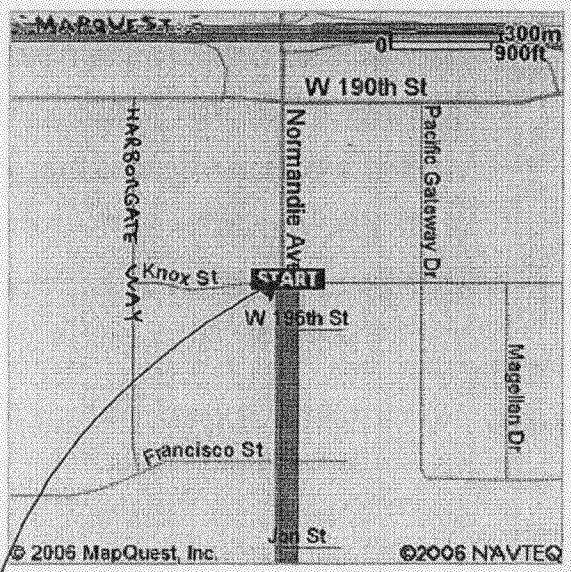
| Directions | Distance |
|---|---|
| **Total Est. Time:** 4 minutes **Total Est. Distance:** 1.93 miles | |
| START **1:** Start out going SOUTH on NORMANDIE AVE toward W 196TH ST. | 1.5 miles |
| **2:** Turn LEFT onto W CARSON ST. | 0.3 miles |
| END **3:** End at **Los Angeles County Hospitals** 1000 W Carson St, Torrance, CA 90502, US | |
| **Total Est. Time:** 4 minutes **Total Est. Distance:** 1.93 miles | |

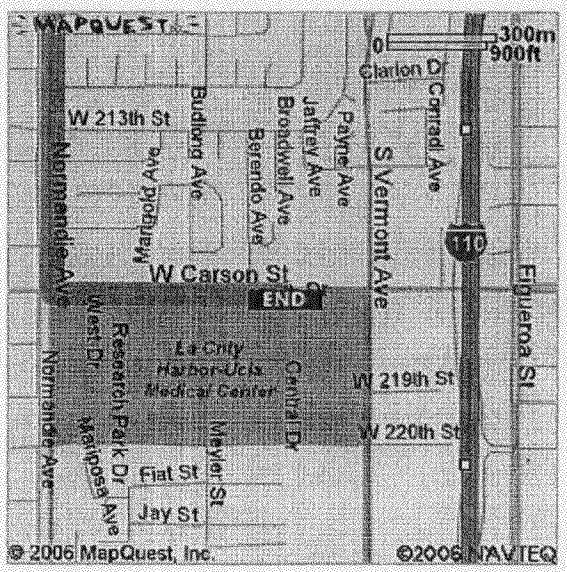
NOTE:
KNOX STREET DOES NOT GO THROUGH TO NORMANDIE AVE!
FOR DIRECTIONS FROM ON SITE, SEE HASP.
USE ATTACHED MAP AND SITE PLAN IF NEEDED.




**Start:**
**19503 Normandie Ave**
Torrance, CA 90502-1109, US

**End:**
**Los Angeles County Hospitals**:
310-222-2345
1000 W Carson St, Torrance, CA 90502, US

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These directions are informational only. No representation is made or warranty given as to their content, road conditions or route usability or expeditiousness. User assumes all risk of use. MapQuest and its suppliers assume no responsibility for any loss or delay resulting from such use.

KNOX STREET DOES NOT GO THROUGH TO NORMANDIE.
USE HARBORGATE WAY → FRANCISCO STREET IF NEEDED.



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