Navdeep Singh Grewal
349 Brianne Court
Pleasanton, CA 94566

June 25, 2013

Mr. Mark Detterman
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: CHEVRON #9-1851
451 Hegenberger Road
Oakland, California
ACEH Case No. 464

Dear Mr. Detterman:

I, Mr. Navdeep Singh Grewal, have retained Pangea Environmental Services, Inc. (Pangea) for environmental consulting services for the project referenced above. On my behalf, Pangea is submitting the attached *Soil and Groundwater Management Plan*.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report is true and correct to the best of my knowledge.

Sincerely,

Navdeep Singh Grewal

June 20, 2013

VIA ALAMEDA COUNTY FTP SITE

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Soil and Groundwater Management Plan**
451 Hegenberger, Oakland, California
ACEH Case #464

Dear Mr. Dettermen:

Pangea Environmental Services, Inc. (Pangea) prepared this soil and groundwater management plan (SMP) for the subject site. This SMP is required by Alameda County Environmental Health to help safeguard human health and safety with respect to potential residual petroleum hydrocarbons during site redevelopment. ACEH understands that limited residual impact is present at the site following site remediation for this Leaking Underground Storage Tank (LUST) case. ACEH has requested this SMP prior to issuance of regulatory case closure. The site background and SMP are described below.

SITE BACKGROUND

The site is an active gasoline station located at the intersection of Hegenberger Road and Edgewater Road in Oakland, California. The operating station consists of one station building, two fuel dispenser islands, and three 10,000-gallon underground storage tanks (USTs). The LUST case was opened on February 23, 1996 after hydrocarbon contaminants were discovered during a baseline environmental investigation. Chevron Environmental Management Company (Chevron) is the responsible party for the release. Significant site assessment has been performed to delineation the lateral and vertical extent of petroleum hydrocarbons. Years of groundwater monitoring of site wells documented plume stability.

In September 2012, the property owner retained Balch Petroleum Contractors and Builders Inc., (Balch) of Milpitas, California to remove a 10,000-gallon diesel UST, dispenser island, and associated piping from the site. The excavation occurred on the north side of the site station building. Soil was excavated from the ground surface to the bottom of the UST (approximately 15 ft below grade surface [bgs]).

In October and November 2012, Chevron coordinated the excavation of approximately 900 tons of soil to target residual petroleum hydrocarbon impact near the former waste oil UST located west of the site station building. The excavation area was approximately 26 ft wide by 60 ft long by 9 ft deep. The excavation targeted TPHmo-range contaminants previously identified in site soil borings. Following excavation activities in November 2012, the Chevron consultant recommended case closure. ACEH is reviewing the case for closure and in May 2013 requested a mailing list for all record fee title owners.

The property owner is redeveloping the site to replace the existing building with a larger building west (behind) the existing building. No remodeling of the fueling facilities is planned. ACEH has requested this SMP to safeguard human health and safety with respect to potential residual petroleum hydrocarbons during site redevelopment. Site data indicates that the primary residual impact of concern is gasoline-range hydrocarbons (TPHg and benzene) identified near the eastern dispenser at approximately 2 ft bgs. Very limited residual petroleum hydrocarbon impact (primarily TPHd and TPHmo) near the former waste oil UST was present in the capillary fringe/saturated zone present about 4 to 8 ft bgs. Data regarding residual soil and groundwater impact is presented in Conestoga-Rovers & Associates' (CRA) *Remedial Excavation Report and Case Closure Request* dated April 5, 2013. Figures showing excavation limits and residual hydrocarbon impact are included in Appendix A.

Following Chevron's excavation of site soil in October/November 2012 in accordance with the agency-approved action plan, the property owner removed and replaced soil beneath the planned new site building for geotechical purposes. Soil at the future building location was excavated to approximately 7 ft bgs, and replaced with imported rock and fill material. This soil removal and backfilling is described in a separate report by others.

SOIL AND GROUNDWATER MANAGEMENT PLAN

As required by ACEH, this management plan addresses potential residual hydrocarbons in soil and groundwater that could be encountered during any future site redevelopment. Future subsurface work may require shallow excavation to install utility conduits or upgrade fueling facilities, or deeper excavation during unplanned future redevelopment.

Pre-Excavation Activities

Prior to commencement of the excavation and drilling activities, the site environmental manager will be contacted at (510) 435-8664 or (510) 836-3700. The site environmental manager will require that that a site safety and health plan (SSHP) dealing with the presence of petroleum hydrocarbons be in place and that this management plan is in place prior to commencement of the excavation and drilling activities. In accordance with the SSHP, a project Safety and Health Officer (SHO) will be assigned to respond to community queries regarding odors and other health concerns. Perimeter air testing will be performed if odors are noticeable at the perimeter.

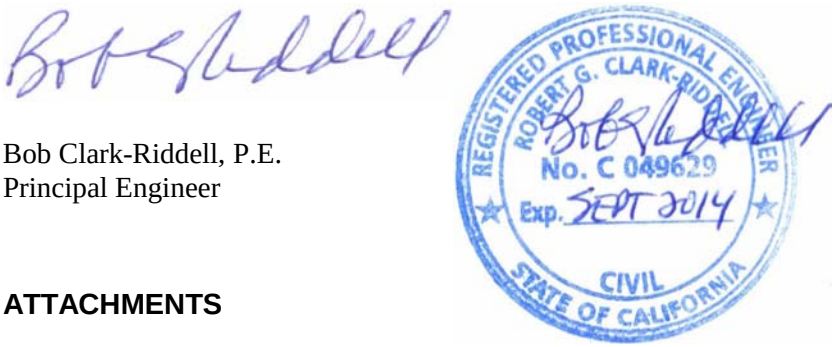
Soil and Groundwater Handling

If soil or groundwater contamination is encountered during site redevelopment, the site environmental manager (Bob Clark-Riddell) is to be contacted immediately at (510) 435-8664 or (510) 836-3700. The site environmental manager (or their agent) will respond to the site within two hours to ascertain the appropriate measures to be taken to assure worker safety and to assure that all contaminated materials encountered are properly managed. If contaminated material is excavated, it will be stockpiled on plastic sheeting and covered with plastic sheeting, or placed in appropriate containers (e.g., 55-gallon DOT-approved drums or roll-off bins). Alternatively, contaminated soil may be profiled in advance of excavation to allow direct soil loading into trucks with immediate offhaul to an appropriately licensed, offsite disposal facility. In accordance with ACEH requirements for minimizing potential odor concerns, excavated soil will not be ‘aerated.’ To further minimize potential odor concerns, stockpiled soil may be sprayed with Simple Green or equivalent. For odor and dust mitigation, water and/or non-toxic soil stabilizers will be applied on stockpiled soil and/or all unpaved areas as necessary.

Any water removed from the subsurface during construction shall be properly stored and/or disposed. Water will be disposed at an appropriately licensed offsite facility, discharged to the sanitary sewer in accordance with EBMUD requirements, or discharged to the storm drain in accordance with requirements of the Regional Water Quality Control Board.

We trust this information satisfies your requirements. If additional information is required, please call (510) 435-8664.

Sincerely,
Pangea Environmental Services, Inc.



Bob Clark-Riddell, P.E.
Principal Engineer

ATTACHMENTS

Appendix A – Figures showing Post-Excavation Hydrocarbon Extent

APPENDIX A

Remedial Excavation Figures

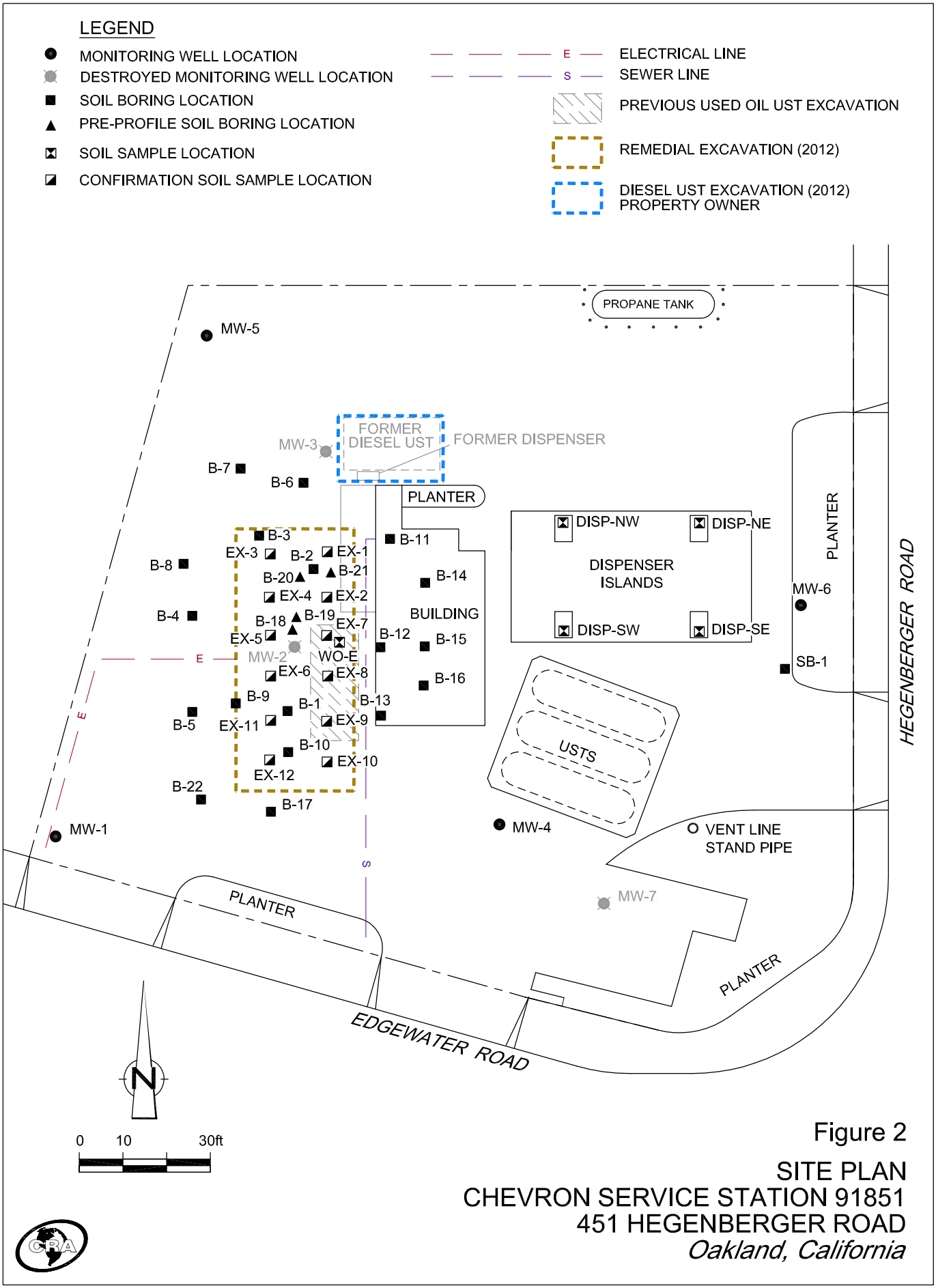


Figure 2

SITE PLAN
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

311976-2012(021)GN-EM002 FEB 21/2013

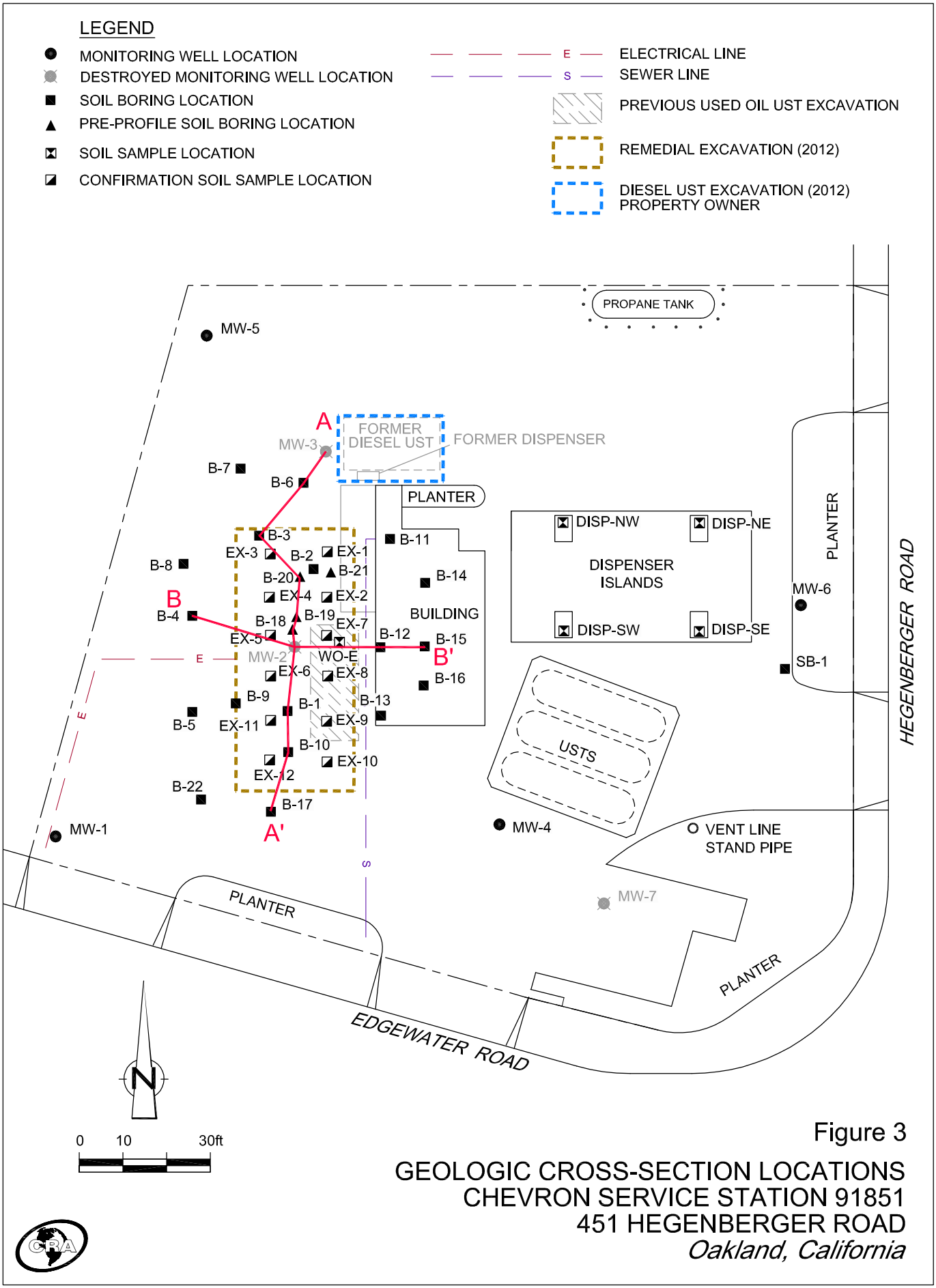
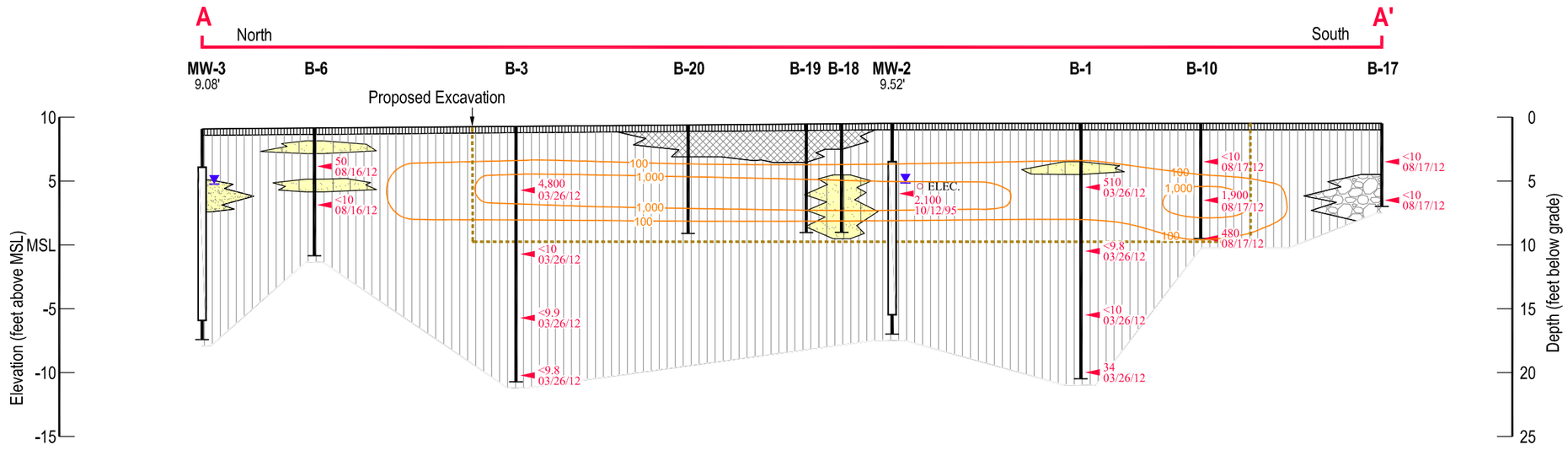
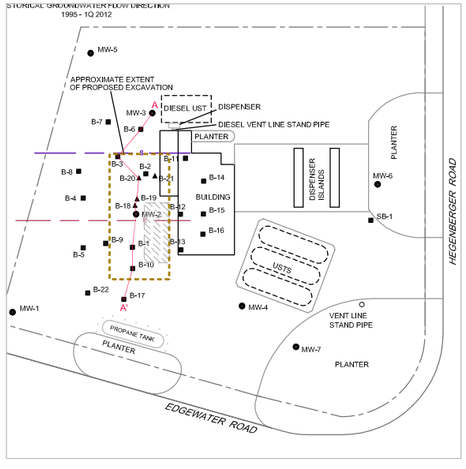


Figure 3

GEOLOGIC CROSS-SECTION LOCATIONS
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

311976-2012(021)GN-EM003 FEB 21/2013





EXPLANATION

- **ASPH** - ASPHALT / CONCRETE
- **FILL** - GRAVEL, SAND, AND SILT MIXTURE; SP; OR SW
- **SP** - POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
- **SW** - WELL-GRADED SAND, GRAVELLY SANDS, LITTLE OR NO FINES
- **SM** - SILTY SANDS, SAND-SILT MIXTURES
- **SC** - CLAYEY SANDS, SAND-CLAY MIXTURES
- **ML; CL** - INORGANIC SILT, AND CLAY MIXTURES WITH LOW TO MODERATE PLASTICITY
- **GW** - WELL GRADED GRAVEL WITH SAND

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring
Approximate sample location
TPHmo isoconcentration contour, in milligrams per kilogram (mg/kg) (dashed where inferred)
TPHmo DATE — TPHmo concentrations in soil, in milligrams per kilogram (mg/kg)
Depth to groundwater (9/13/12)

NOTE: Depths of sewer and electrical line are approximate.

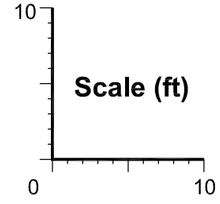
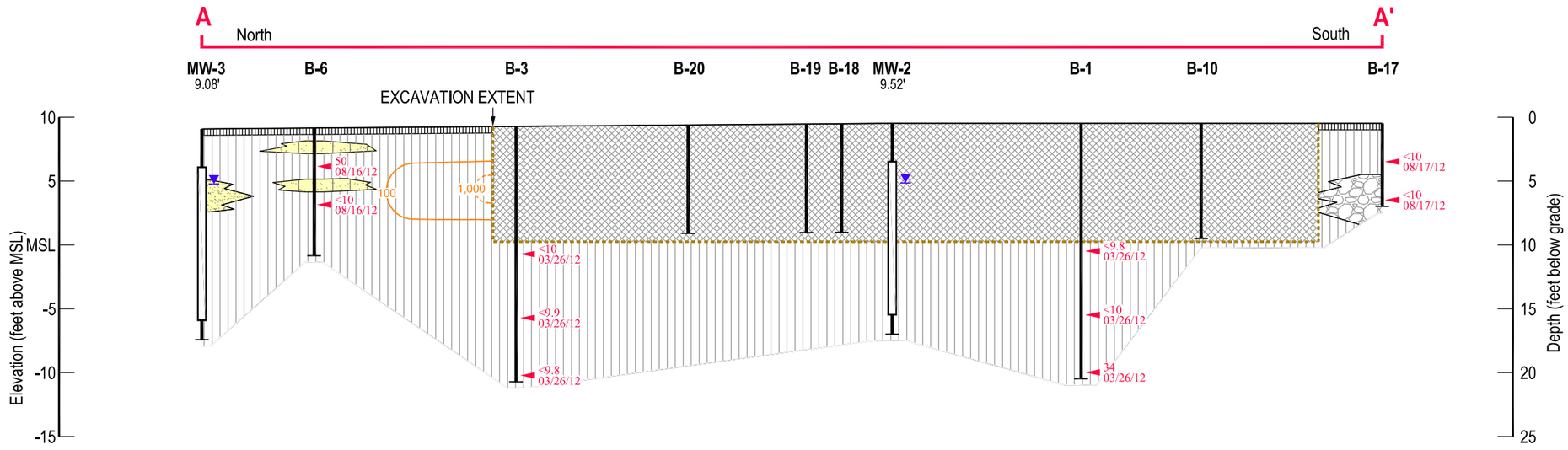
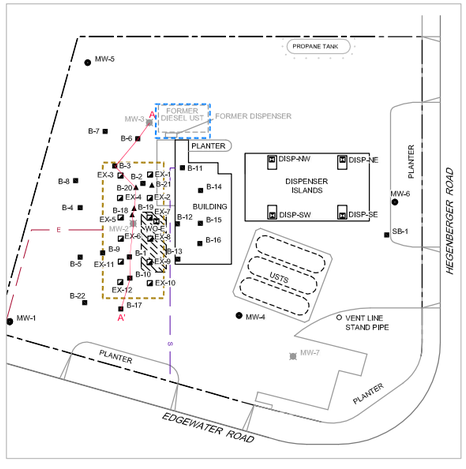


Figure 4A

GEOLOGIC CROSS-SECTION A-A' PRE-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California





EXPLANATION

- ASPH - ASPHALT / CONCRETE
- FILL - GRAVEL, SAND, AND SILT MIXTURE; SP; OR SW
- SP - POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
- SW - WELL-GRADED SAND, GRAVELLY SANDS, LITTLE OR NO FINES
- SM - SILTY SANDS, SAND-SILT MIXTURES
- SC - CLAYEY SANDS, SAND-CLAY MIXTURES
- ML; CL - INORGANIC SILT, AND CLAY MIXTURES WITH LOW TO MODERATE PLASTICITY
- GW - WELL GRADED GRAVEL WITH SAND

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring
Approximate sample location
TPHmo isoconcentration contour, in milligrams per kilogram (mg/kg) (dashed where inferred)
TPHmo DATE — TPHmo concentrations in soil, in milligrams per kilogram (mg/kg)
Depth to groundwater (9/13/12)

NOTE: Depths of sewer and electrical line are approximate.

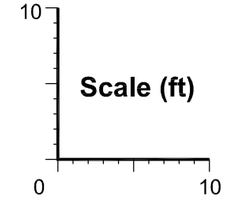
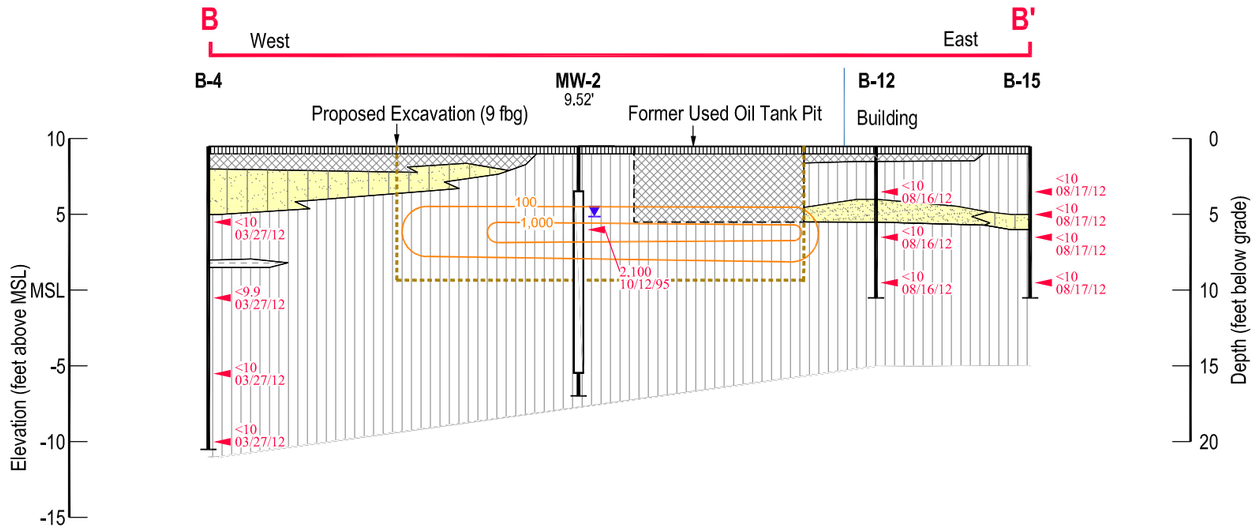
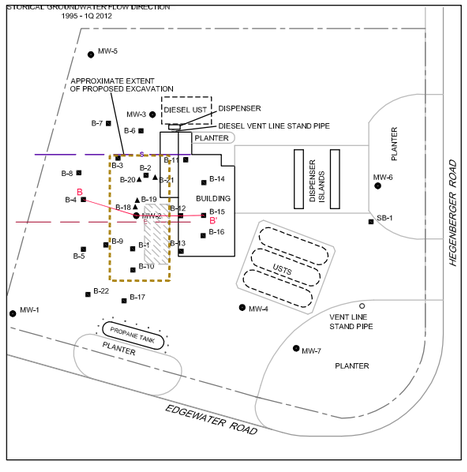


Figure 4B

GEOLOGIC CROSS-SECTION A-A' POST-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California





EXPLANATION

- ASPH - ASPHALT / CONCRETE
- FILL - GRAVEL, SAND, AND SILT MIXTURE; SP; SW; OR PEA GRAVEL
- SP - POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
- SW - WELL-GRADED SAND, GRAVELLY SANDS, LITTLE OR NO FINES
- SM - SILTY SANDS, SAND-SILT MIXTURES
- SC - CLAYEY SANDS, SAND-CLAY MIXTURES
- ML; CL - INORGANIC SILT, AND CLAY MIXTURES WITH LOW TO MODERATE PLASTICITY
- OH - ORGANIC SOIL

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring
Approximate sample location
TPHmo isoconcentration contour, in milligrams per kilogram (mg/kg) (dashed where inferred)
TPHmo DATE — TPHmo concentrations in soil, in milligrams per kilogram (mg/kg)
Depth to groundwater (9/13/12)

NOTE: Depths of sewer and electrical line are approximate.

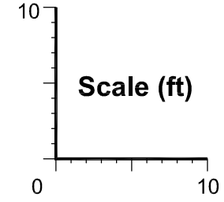
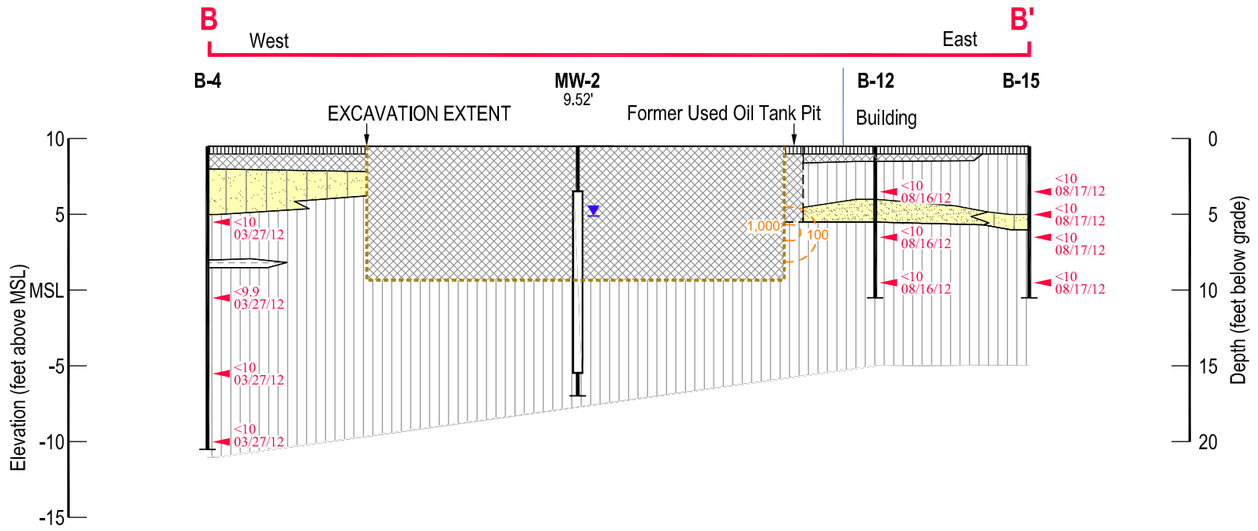
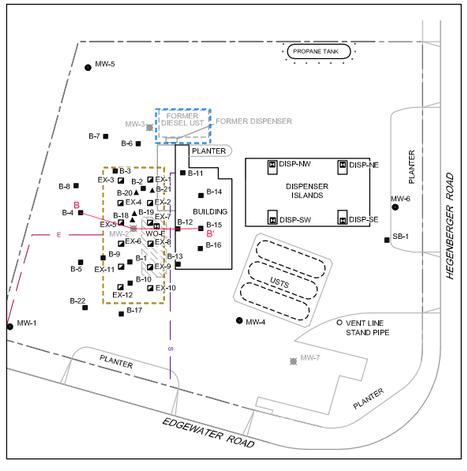


Figure 5A

GEOLOGIC CROSS-SECTION B-B' PRE-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California





EXPLANATION

- ASPH - ASPHALT / CONCRETE
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- SP - POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
- SW - WELL-GRADED SAND, GRAVELLY SANDS, LITTLE OR NO FINES
- SM - SILTY SANDS, SAND-SILT MIXTURES
- SC - CLAYEY SANDS, SAND-CLAY MIXTURES
- ML; CL - INORGANIC SILT, AND CLAY MIXTURES WITH LOW TO MODERATE PLASTICITY
- OH - ORGANIC SOIL

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring
Approximate sample location
TPHmo isoconcentration contour, in milligrams per kilogram (mg/kg) (dashed where inferred)
TPHmo DATE — TPHmo concentrations in soil, in milligrams per kilogram (mg/kg)
Depth to groundwater (9/13/12)

NOTE: Depths of sewer and electrical line are approximate.

10
Scale (ft)
0
10

Figure 5B

GEOLOGIC CROSS-SECTION B-B' POST-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

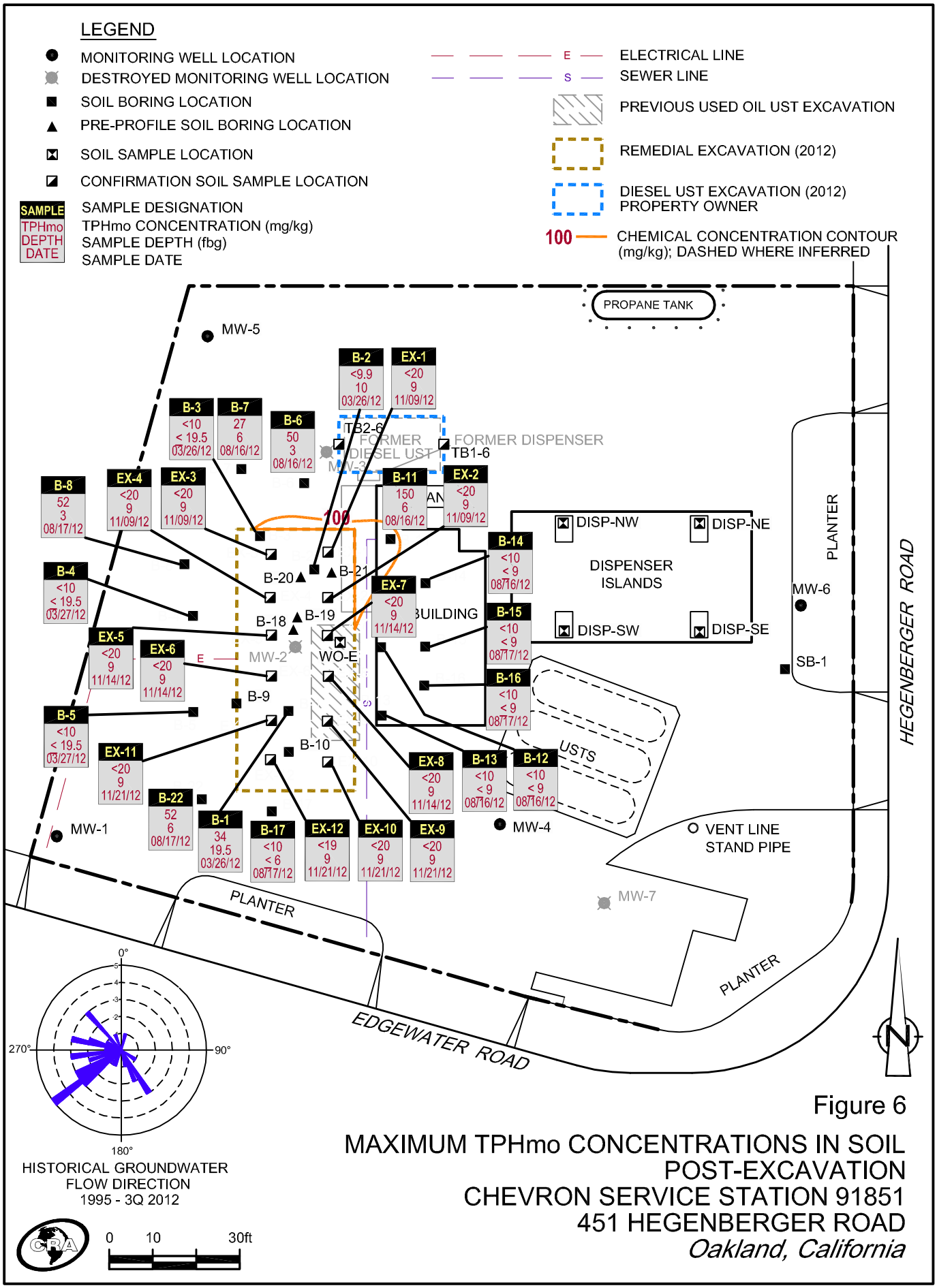

Figure 6

MAXIMUM TPHmo CONCENTRATIONS IN SOIL
POST-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

311976-2012.6(021)GN-WA004 MAR 25/2013

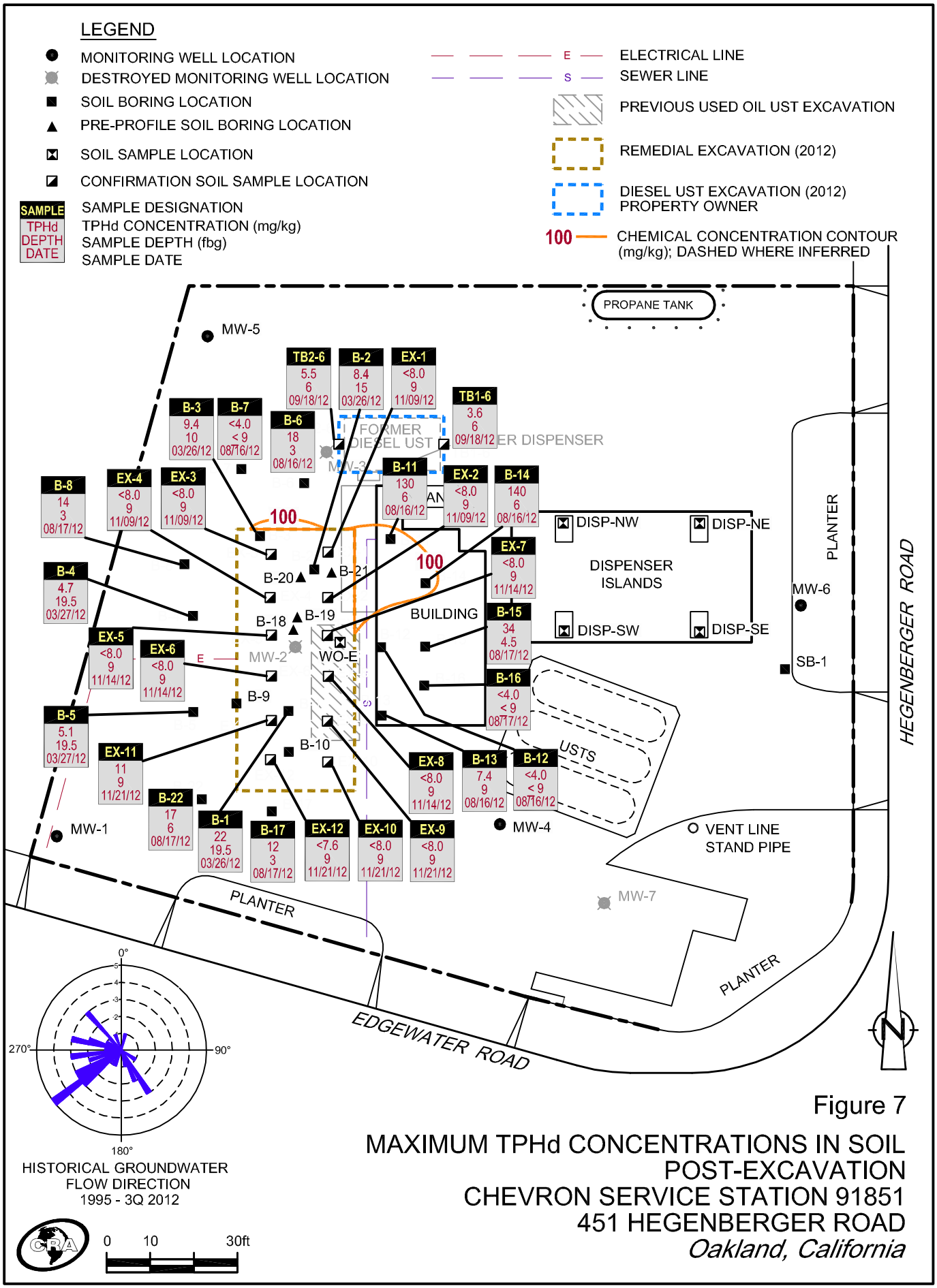

Figure 7

MAXIMUM TPHd CONCENTRATIONS IN SOIL
POST-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

311976-2012.6(021)GN-WA005 MAR 25/2013

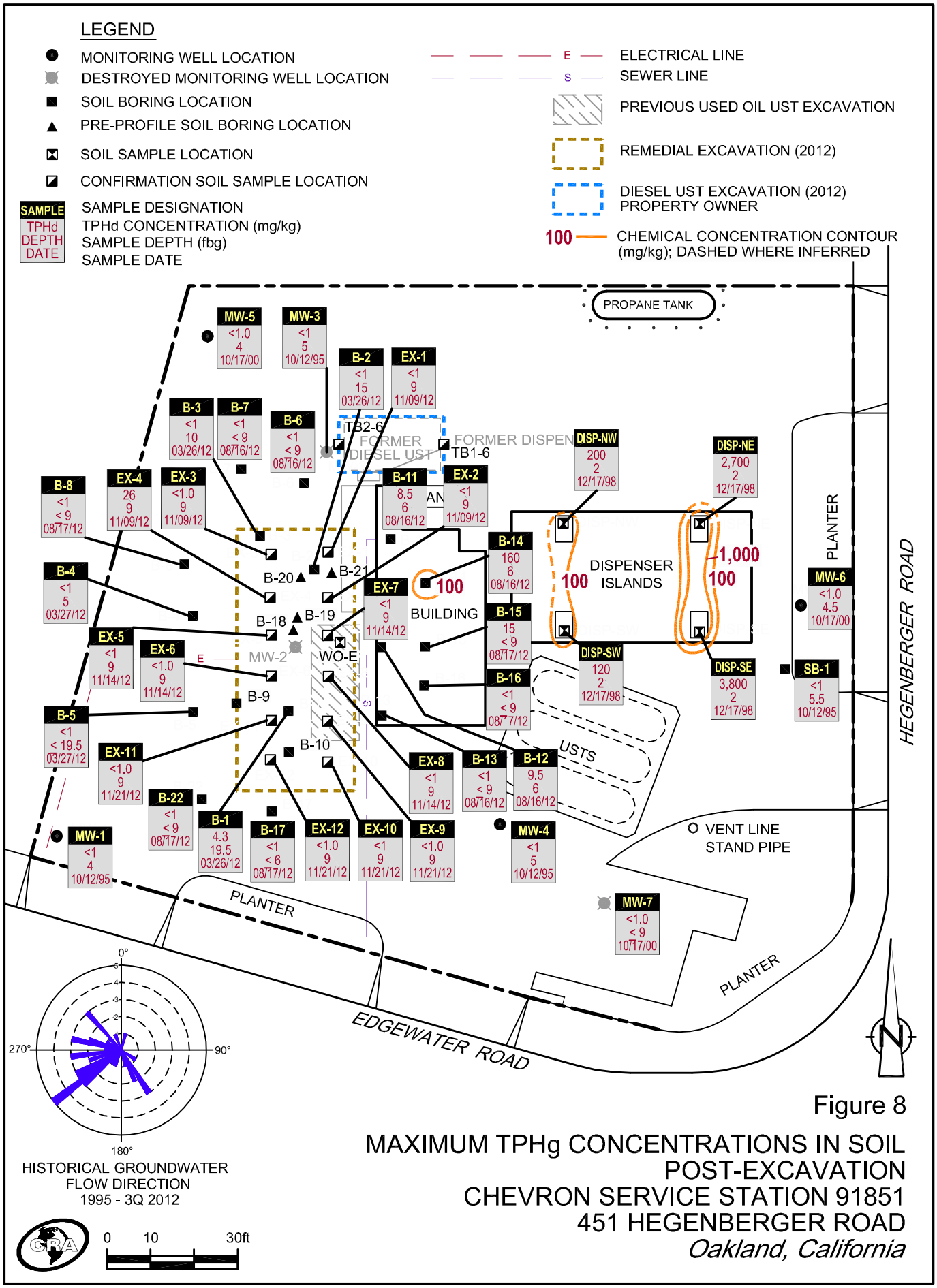

Figure 8

MAXIMUM TPHg CONCENTRATIONS IN SOIL
POST-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

311976-2012.6(021)GN-WA006 MAR 25/2013

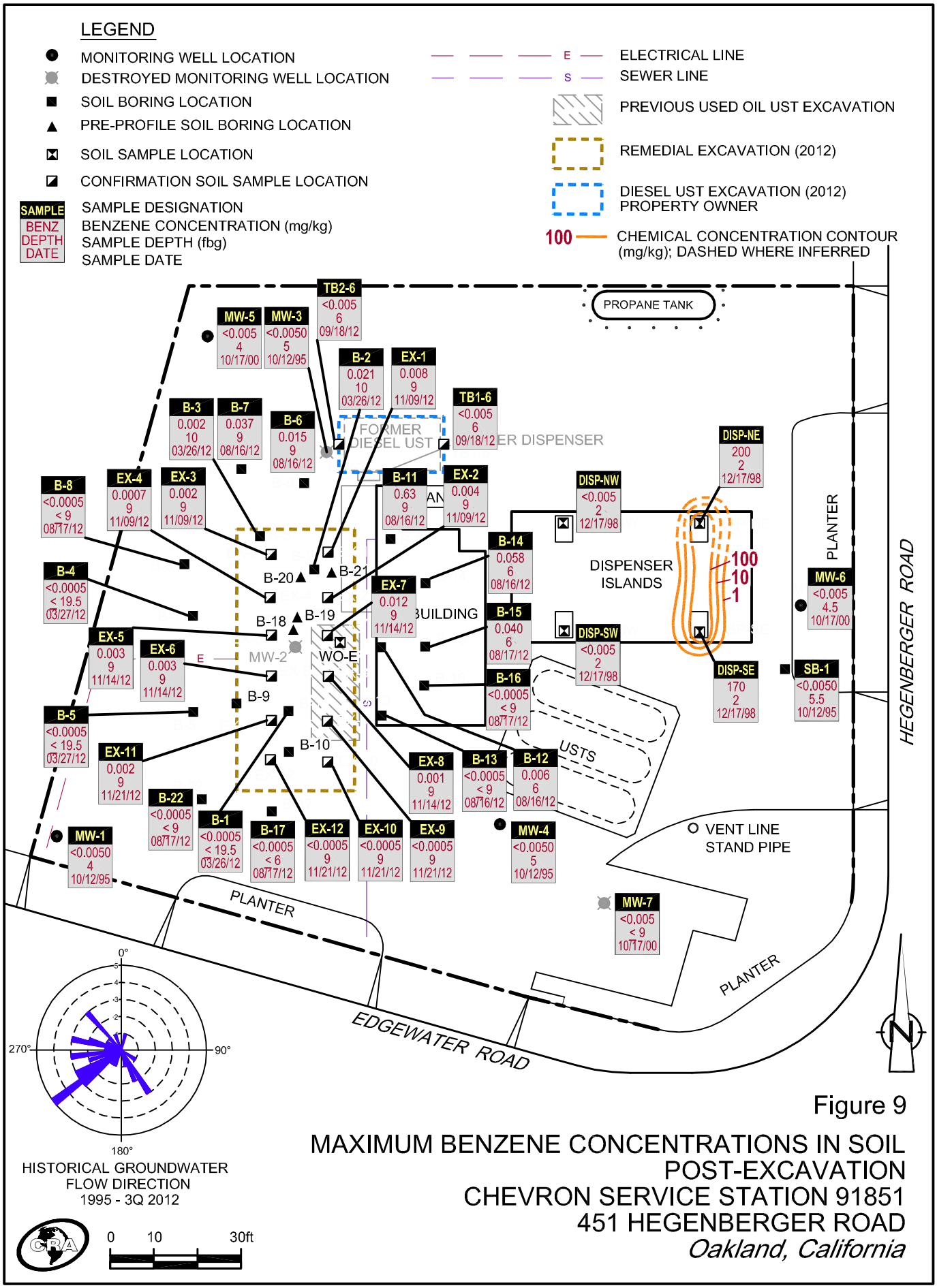

Figure 9

MAXIMUM BENZENE CONCENTRATIONS IN SOIL
POST-EXCAVATION
CHEVRON SERVICE STATION 91851
451 HEGENBERGER ROAD
Oakland, California

311976-2012.6(021)GN-WA007 MAR 25/2013