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Environmental Health

**Preliminary Site Assessment Phase
Workplan**

for
Diesel Fuel Release
located at:

FCI DUBLIN
Federal Correctional Institution
5701 8th st - Camp Parks
Dublin, CA

RO# 2977

Prepared for



Federal Correctional Institution
Dublin, California

FCI DUBLIN
Federal Correctional Institution
5701 8th st - Camp Parks
Dublin, CA 94568

by
McElligott Consulting
August 18, 2008
Rev. 1, September 23, 2008

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Attachments

- Tab 1 – General site and facility maps, Detail Figure**
- Tab 2 – Rationale for Groundwater sample location**

1.0 INTRODUCTION

The Federal Correctional Institution – Dublin (FCI-Dublin) retained Marcor Remediation, Inc. (Marcor) and its subcontractor, McElligott Consulting, to respond to a release of diesel fuel from the facility's backup emergency generator building located on the south west side of the complex. This Preliminary Site Assessment Phase Workplan (Workplan) describes the sampling and analysis plan to establish the extent of subsurface contamination and the chemical constituents of the release.

This site has been assigned case number RO#2977 by Alameda County Environmental Health.

Project Contacts

The following persons are involved in this project:

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2.0 PURPOSE

The primary purpose of this investigation is to delineate the horizontal and vertical extent of diesel-contaminated soil at the release area, and to determine if groundwater has been affected. Secondary goals are to evaluate the quantity and magnitude of the remaining contaminated soil, establish the current depth to first groundwater at the site, and determine if potential diesel constituents such as naphthalene and BTEX are present. To these ends, soil samples will be collected along the trenched area (created during interim cleanup activities), beneath the generator building foundation along the spill pathway, and beneath the retaining wall adjacent to the generator building, also along the release path. A groundwater grab sample will be collected using direct push methods to evaluate groundwater conditions.

3.0 BACKGROUND

FCI-Dublin is equipped with an emergency backup generator, and an associated 3,000 gallon capacity diesel fuel aboveground storage tank, located on the south west side of the facility. The system is housed in a concrete masonry unit (CMU) block building constructed on a concrete slab on grade. The building is set in a complex of buildings, adjacent to an assembly building (Q) to the north and a loading dock to the west. A low retaining wall extends along the north and west sides of the building, separating it from the higher ground to the north, sloping south.

The diesel engine and generator set is located in a separate room on the north end of the building. The engine is supplied via a day tank (about 40 gallons), that is in turn supplied by a recirculation pump connected to the main fuel storage tank.

The generator building is a concrete block wall building set on a concrete slab-on-grade, located on the south west side of the facility. Figures 1 through 3 provide the general area and site detail.

3.1 SUMMARY OF RELEASE

During the routine generator testing on April 25, 2008, the day tank supplying the emergency backup generator overflowed into the generator room, and then through the door sill on the north and ventilation opening on the west side of the generator room. The diesel fuel then flowed along the asphalt walkway between the building on the north and west sides, some of which entered the cold joints between the building foundation and walkway and the retaining wall and walkway, and into the underlying soil. Some of the fuel flowed along the west walkway south to the driveway and to the loading dock to the west. Some fuel migrated through the asphalt paving, and some entered the storm water collection trench running parallel to the dock. No fuel was observed in the catch basin serving the dockwell.

The area most severely affected by the release was the north west corner of the walkway. Please see Figure 7.

FCI-Dublin personnel responded to the release immediately upon discovery, shutting down the genset and fuel pump, and began spill response operations by deploying absorbent material.

The overflow condition lasted for about 30 minutes. Based on an estimated refill pump flow rate of 220 gallons per hour (twice the full load fuel consumption rate of the genset), the amount released to the room and surroundings was about 100 gallons.

3.2 INTERIM REMEDIAL ACTIONS

MARCOR initially responded to a report of a diesel overflow at the FCI Dublin site on April 25, 2008. Diesel impacted asphalt and soil were removed during our emergency response. The spill originated at the facilities generator building and impacted soil around the building. Four feet of

soil was removed from around the generator building, and digging around the building was stopped at the limit of the slab foundation to keeping the buildings structural integrity intact.

Additional soil was excavated along the north and west sides of the building in May. A small amount of soil was also removed from under the foundation on the north side, and in the trench on the north side to allow visual and olfactory inspection of the soil. In both locations (about 1 foot laterally under the foundation and to about six feet in the trench), diesel contamination was visible and fresh hydrocarbon odor present.

Approximately 100 bank (in place) cubic yards of soil and asphalt cover have been removed in the interim remedial action. Residual contamination exists along the north and west sides of the generator building. Based on observation (appearance and odor only, no analytical), the area south of the building extending to the loading dock well show no residual diesel contamination. This area was not as severely affected as the walkway area on the north and west sides of the building, where free product collected until absorbed with spill clean-up materials (Pig brand Lite Dri.)

4.0 ERRATA TO REPORT OF RELEASE AND INTERIM REMEDIAL ACTIONS REPORT

Several errors have been found in the FCI Dublin Release and IRA Report, and have been corrected in this report. These errors are as follows:

- Figure 2 and the text included a note indicating that the open field north and east of the generator on the property is a pond. This has been corrected to indicate that this area *was* a pond.
- The site was stated to be 13° cross gradient from the direction of the groundwater gradient at the Bay Petroleum site in Dublin. The actual magnitude is 36°. Please see Figure 7 in Tab 2.
- Figure 4 did not show the location of the spill site or the Bay Petroleum site. The call outs for these locations are now visible.

5.0 CURRENT SITE CONCEPTUAL MODEL

The current Site Conceptual Model (SCM) is based on visual and olfactory inspection of the spill site after interim remedial actions, local site conditions (topography and past and current hydrology, and on available public records for groundwater depths, gradient and flow direction.

The majority of the release pooled inside the building and was removed with absorbent. The next largest fraction flowed under the generator room access door and ventilation grill to the adjacent walkway, where it pooled in low points against the building and retaining wall. The remainder flowed along the asphalt walkway to the driveway and loading dock. Based on inspection after removal of asphalt and soil excavation, some diesel penetrated the asphalt and/or passed through the cold joints between the asphalt and the concrete foundation of the generator

building and concrete block of the retaining wall to the underlying soil. In the most affected area, soil has been contaminated to a depth of at least 6 feet below local ground surface. In some locations soil underneath the foundation has also been affected. The areal extent of soil contamination is believed to extend to the south west end of the generator building along the walkway, but not significantly along the driveway.

The depth to groundwater is estimated to be 21 feet below ground surface, but may be more shallow based on historic water features (a former pond upgradient and a nearby buried creek bed).

It is not known if groundwater has been affected by the surface release of diesel.

Tab 2 contains a topographic and hydrology diagram of the site of release.

6.0 RATIONALE FOR SAMPLE LOCATIONS

The sample locations have been selected to define the vertical and horizontal extent of the diesel contamination in the soil along the surface spill pathway and the known soil contamination based on visible and olfactory evidence of residual diesel observed after the interim remedial action.

The potential impact to groundwater has not been established, so a direct push groundwater grab sample has been included in the scope. The location selected is our best estimate of the downgradient location closest to the area where the soil contamination was greatest, and where the rig could be positioned.

The nearest site in LOP records (BAY COUNTIES PETROLEUM Case# : RO0002862 6310 Houston Pl, Dublin, CA 94568, approximately 4,900 feet to the south west, 36° cross gradient) shows a groundwater flow direction of direction is N 102.7 ° W (April '08)

A schematic of the ground surface and groundwater information used to estimate the groundwater sample location is provided in Tab 2.

7.0 PROPOSED INVESTIGATION SCOPE OF WORK

The proposed Scope of Work for this investigation consists of 30 soil samples and two groundwater grab samples. The sample locations are detailed on Figures 5 and 6. The contaminants of concern are total petroleum hydrocarbons as diesel (TPH-d) and the potential toxic constituents of diesel fuel, benzene, toluene, ethyl benzene, and xylenes (BTEX) and Naphthalene. The sample locations, sample points, and lab analyses are summarized in the table below:

Sample ID	Type/location/management	Lab Analyses
A-1	Soil, first trench bottom, advance deeper if odor or color, analyze	TPH-d, BTEX
A-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
A-3	Soil, under Generator Building Foundation, advance deeper if odor or color, analyze	TPH-d
A-4	Soil, under Retaining Wall Foundation, advance deeper if odor or color, analyze	TPH-d
B-1	Soil, first trench bottom, analyze	TPH-d, BTEX, naphthalene
B-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
B-3	Soil, under Generator Building Foundation, advance deeper if odor or color, analyze	TPH-d
B-4	Soil, under Retaining Wall Foundation, advance deeper if odor or color, analyze	TPH-d
C-1	Soil, first trench bottom, analyze	TPH-d, BTEX, naphthalene
C-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
C-3	Soil, under Generator Building Foundation, advance deeper if odor or color, analyze	TPH-d
C-4	Soil, under Retaining Wall Foundation, advance deeper if odor or color, analyze	TPH-d
D-1	Soil, first trench bottom, advance deeper if odor or color, analyze	TPH-d, BTEX
D-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
D-3	Soil, under Generator Building Foundation, advance deeper if odor or color, analyze	TPH-d
D-4	Soil, under Retaining Wall Foundation, advance deeper if odor or color, analyze	TPH-d
E-1	Soil, first trench bottom, advance deeper if odor or color, analyze	TPH-d, BTEX
E-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
E-3	Soil, under Generator Building Foundation, advance deeper if odor or color, analyze	TPH-d
E-4	Soil, under Retaining Wall Foundation, advance deeper if odor or color, analyze	TPH-d
F-1	Soil, first trench bottom, advance deeper if odor or color, analyze	TPH-d, BTEX
F-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
F-3	Soil, under Generator Building Foundation, advance deeper if odor or color, analyze	TPH-d
F-4	Soil, under Retaining Wall Foundation, advance deeper if odor or color, analyze	TPH-d

Sample ID	Type/location/management	Lab Analyses
G-1	Soil, first driveway trench bottom, advance deeper if odor or color, analyze	TPH-d
G-2	Soil, second trench bottom, hold for analysis pending results of first sample.	TPH-d
H-1	Soil, first driveway trench bottom, advance deeper if odor or color, analyze	TPH-d
H-2	Soil, second driveway trench bottom, hold for analysis pending results of first sample.	TPH-d
I-1	Soil, first driveway trench bottom, advance deeper if odor or color, analyze	TPH-d
I-2	Soil, second driveway trench bottom, hold for analysis pending results of first sample.	TPH-d
GW-1	Groundwater, assumed local downgradient from main release area.	TPH-d, BTEX, naphthalene
GW-2	Groundwater, assumed downgradient (based on nearest site data) from main release area, adjacent to main release area.	TPH-d, BTEX, naphthalene

Soil samples will be collected by hand using a hand auger and slide hammer with brass sampling tubes.

The groundwater samples will be collected using a direct push rig. Additional groundwater samples may be collected if time permits, and will be analyzed in series if the primary sample shows diesel contamination.

The samples will be sealed (Teflon tape and plastic caps for the soil tubes, glass and plastic containers for the water samples), and preserved for delivery to the Analytical laboratory by cooling to 4°C with ice. Samples will be transported to the lab in a cooler under a chain of custody.

The sampling equipment will be decontaminated between sample points and at the end of the event by washing with lab soap and water and rinsing with deionized water. Wash water and soil cuttings will be managed together in sealed plastic bags stored onsite pending disposal of expected additional excavated soil. The bags will be labeled as investigation waste, diesel contaminated soil, and stored in the generator building. Ultimate disposal is expected to Altamont Landfill.

A site specific health and safety plan, focusing primarily on trench safety, will be prepared prior to soil sampling.

8.0 SCHEDULE

Upon approval of this work plan, Marcor will schedule a licensed driller to perform the direct push sampling activity. Environmental Health will be notified as soon as the field work day is scheduled. Notification has already been made to Zone 7 of the planned investigation and the permit submitted. We anticipate that the field work can be scheduled within the next 3 weeks

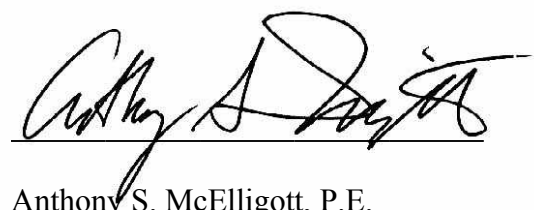
(by late September), and with a laboratory turn around time of one week, the results of this investigation will be available for discussion by mid October. A final report will be issued within 3 weeks of receipt of the lab reports.

9.0 REPORTING

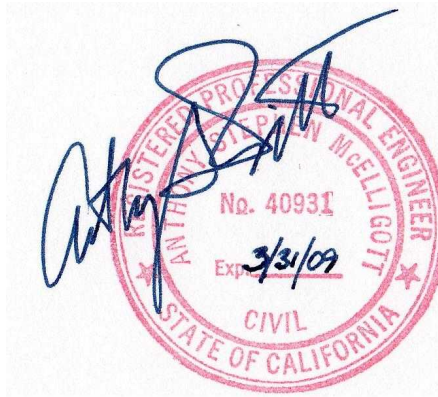
A final report will be issued within 3 weeks of receipt of the lab reports. The report will include the results of the field investigation, the laboratory reports, an updated Site Conceptual Model, and proposed next steps.

10.0 RESPONSIBLE PROFESSIONAL

This Preliminary Site Assessment Phase Workplan was prepared by:



Anthony S. McElligott, P.E.
(C040931 exp 3/31/09)
Principal
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August 18, 2008
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Tab 1
FIGURES



Figure 1: FCI Dublin location Map (Google Satellite)



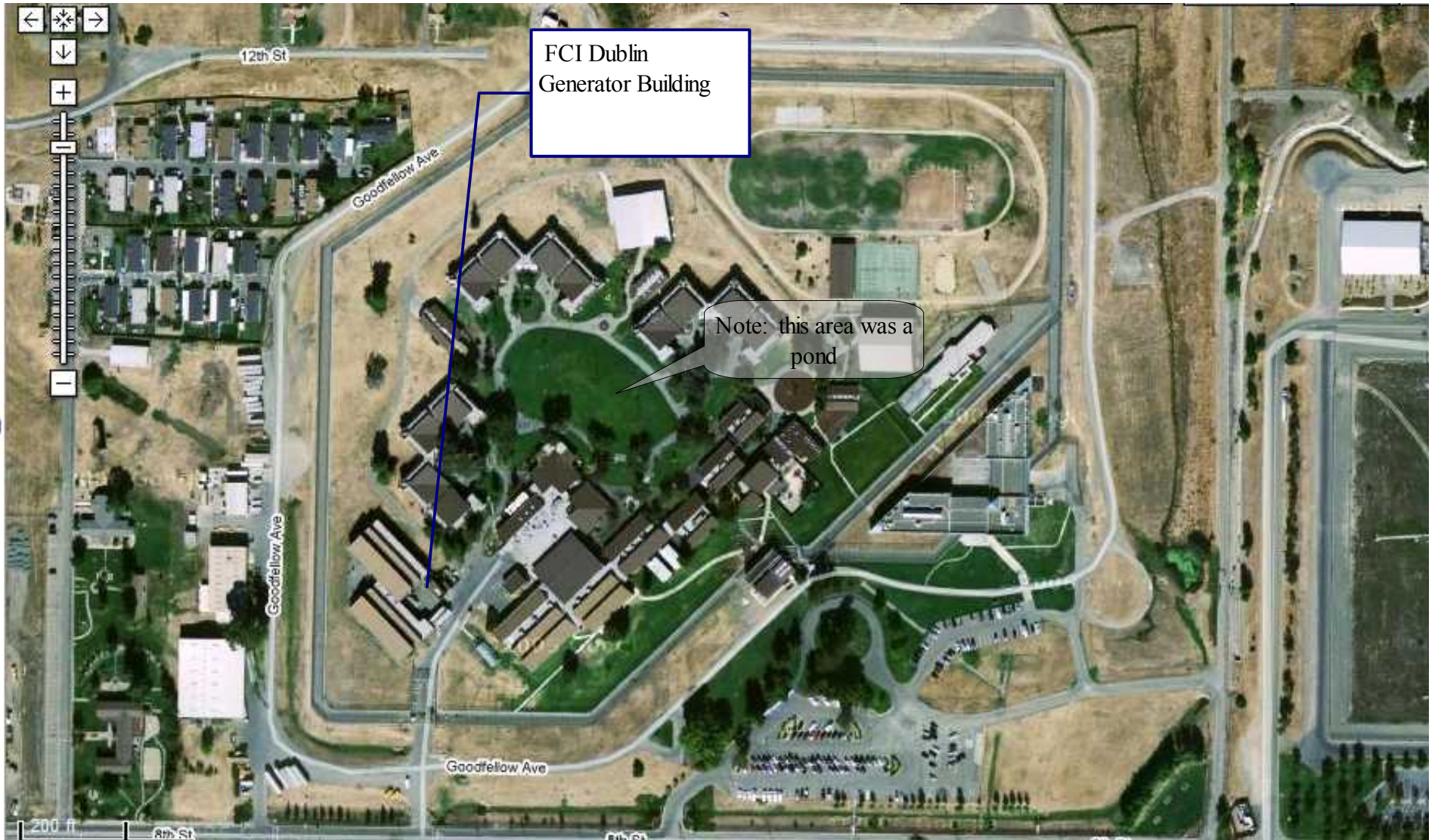


Figure 2: Facility Map, FCI Dublin

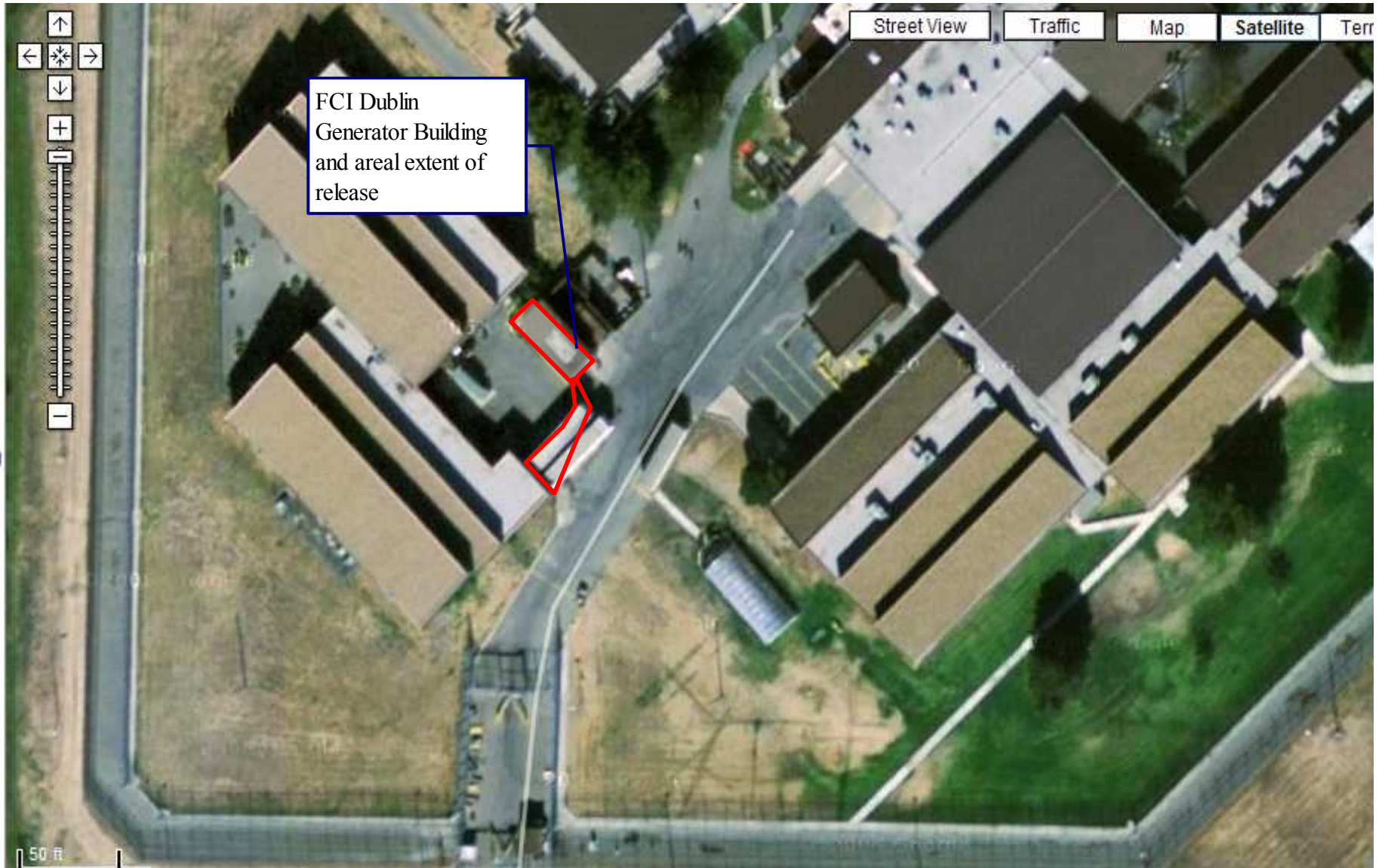


Figure 3: Site of Release, Generator Building, FCI Dublin

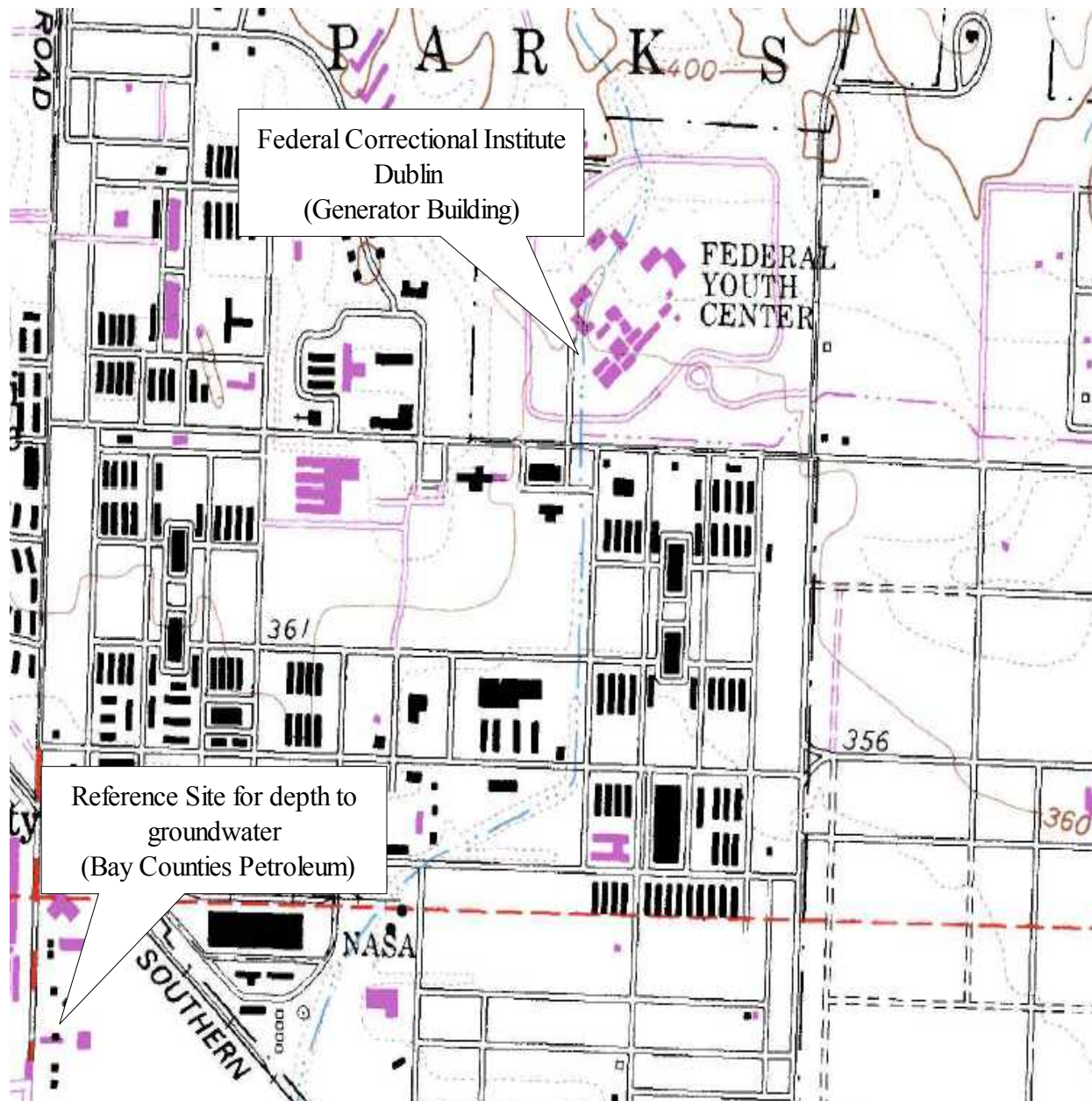
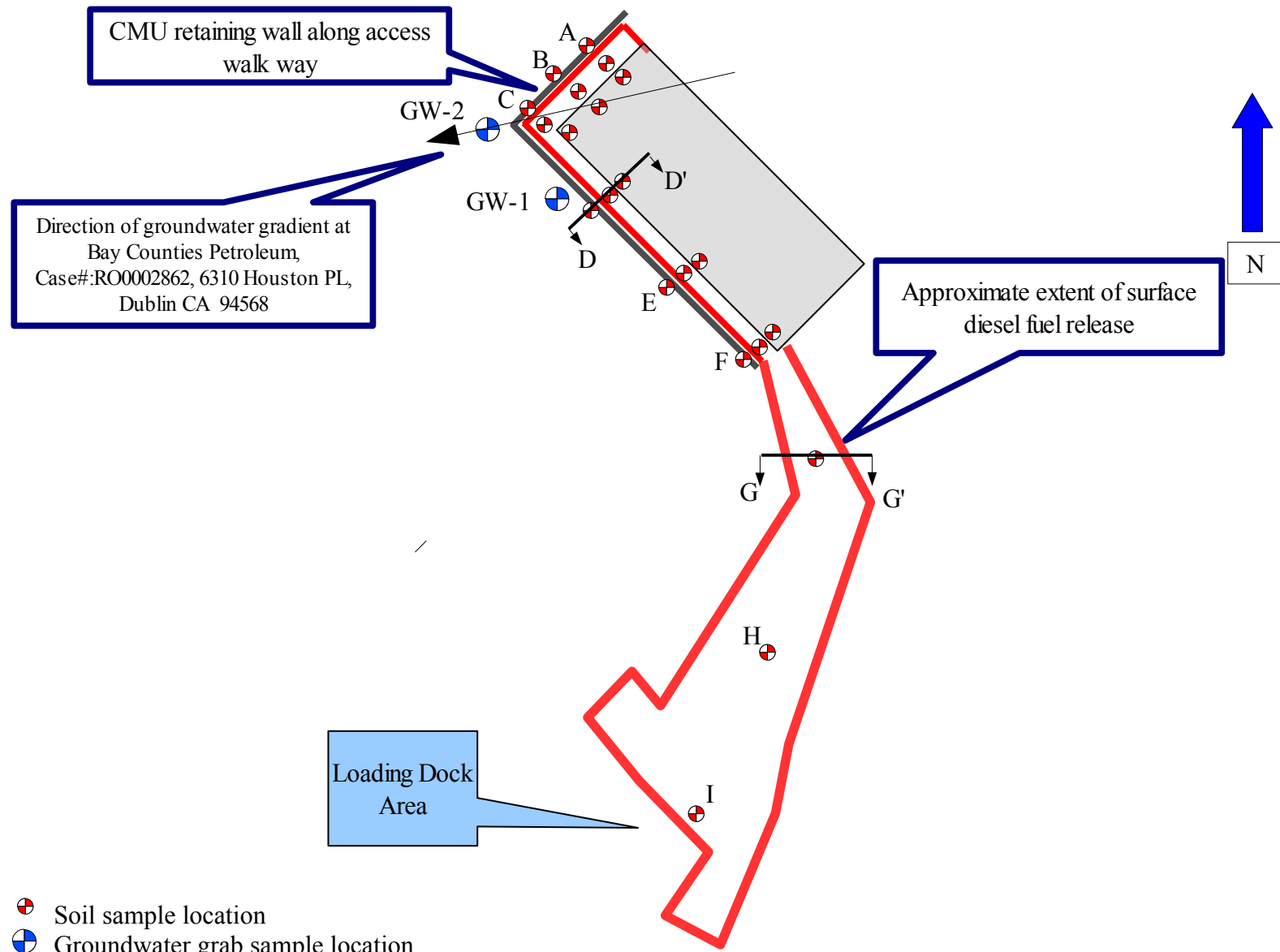




Figure 4: Topographic Map Detail, FCI Dublin and closest groundwater reference site. Release site is at approximately 360 ft amsl.



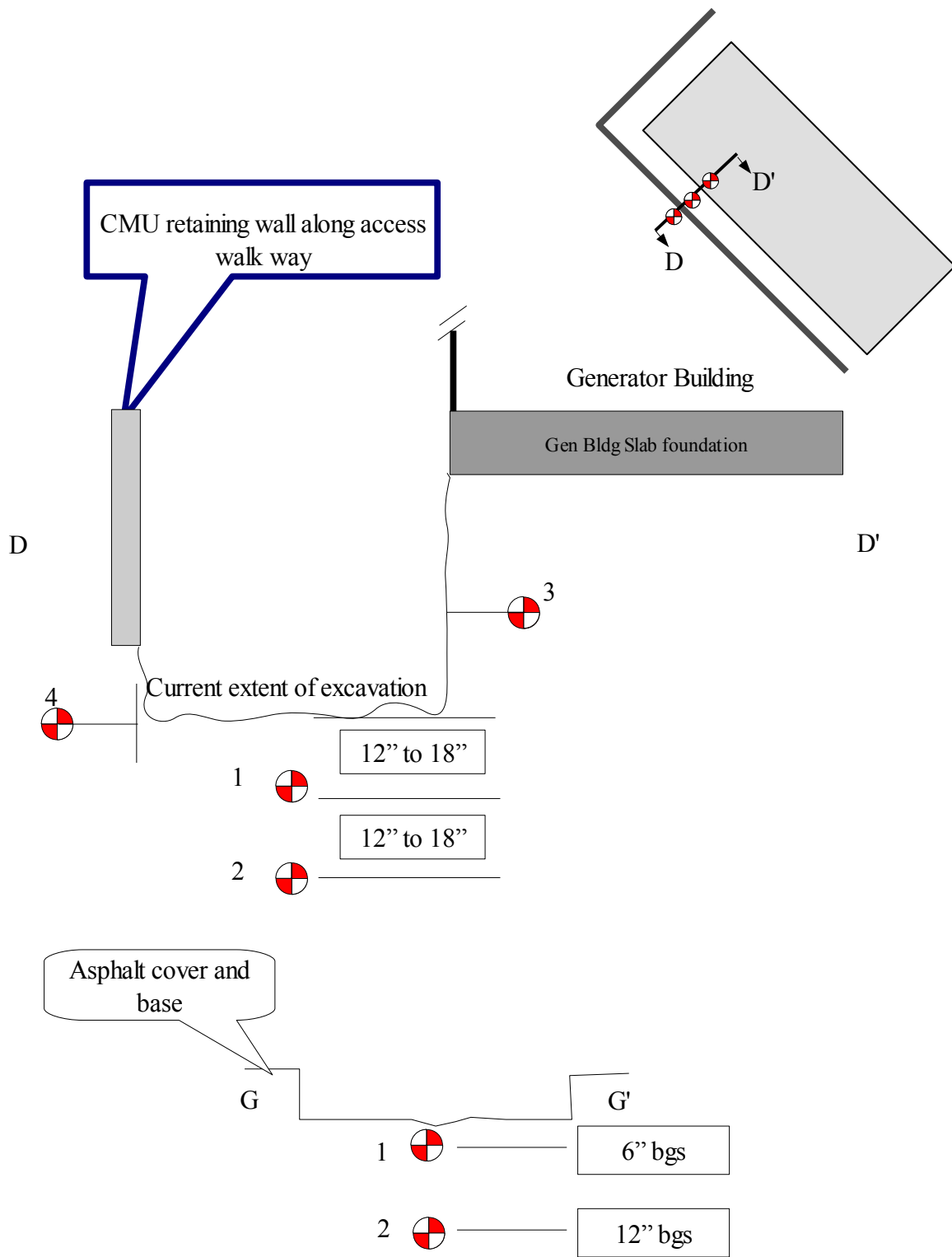
Key:

-  Soil sample location
-  Groundwater grab sample location

See Figure 6 for section A-A'

Figure 5: Detail sketch of area of release – Rev. 1. Generator building (including storage tank) is 26 ft wide by 40 ft long
 Approximate Scale: 1" = 20'





- Not to scale -

Key:  Soil sample location

Figure 6: Detail of section A-A'. Typical cross section of sample locations.

Tab – 2

Rationale for Groundwater sample location

Rationale for Groundwater sample location

Nearest site with groundwater data is (LOP Findings) [BAY COUNTIES PETROLEUM](#) , Case#:RO0002862
 6310 HOUSTON PL, DUBLIN CA 94568
 Ground surface at 335
 GW at 327



FCI Dublin at 360 ft amsl, 25 ft higher (ground surface elevation)

4,907 ft away to the northeast, Groundwater flow direction is N 102.7°W, backsite from FCI Dublin to BCP is N139°W, cross gradient is then 36°.

Local gradient is 0.0024 ft/ft gradient (at Bay Counties Petroleum site), if constant between sites would put ground water elevation 11.8 ft higher, or about 339 ft. Estimated depth to gw is then 360-339 = 21 ft

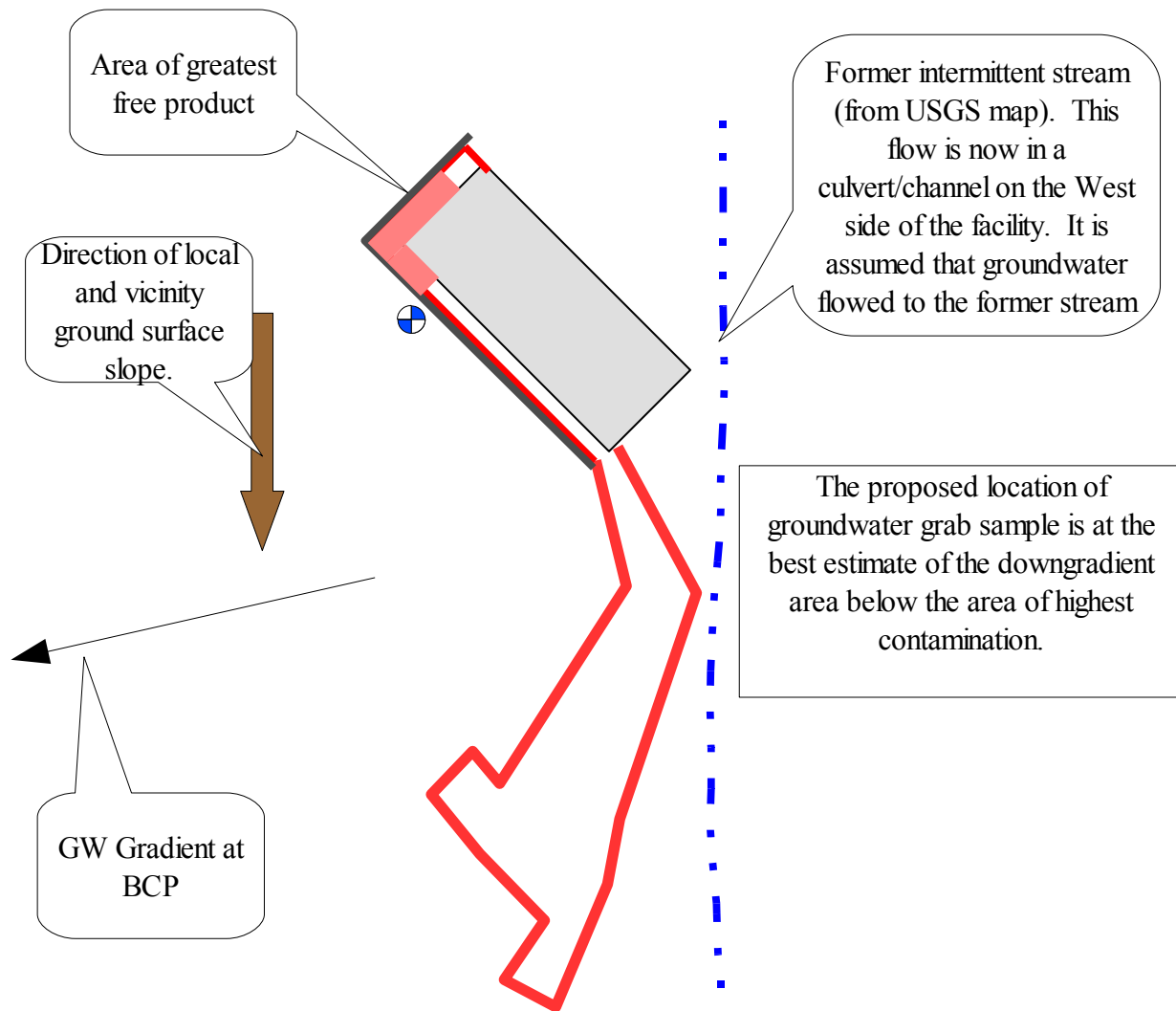


Figure 7 – Primary contamination area and groundwater sample location logic