DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Exelon New Boston Generating Station (formerly Sithe New Boston Generating Station)

Facility Address: 776 Summer Street, South Boston, MA

Facility EPA ID #: Former # : 000845420 Current #: MAR000010702

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

X If yes – check here and continue with #2 below.

_____ If no – re-evaluate existing data, or

_____ If data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures of the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration/Applicability of EI Determination

EI Determination status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is groundwater known or reasonably suspected to be "contaminated"[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

____	If yes, continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
X	If no, skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."
____	If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

GENERAL

The Facility is an active electric power generating station. The geographic coordinates of the Facility are 42.339167 latitude and -71.035 longitude. The Facility is abutted to the north by the Boston Harbor Reserved Channel, to the west by Summer Street, to the south by East 1st Street, and to the east by an inlet of the Reserved Channel and a parcel belonging to the Massachusetts Bay Transportation Authority. A baseball field and a residential area are located to the south/southeast of the Facility, across East 1st Street. The Facility is situated on approximately 24.2 acres and includes a generation building that houses a working turbine, former electrical generating equipment, a guard shack, a former waste treatment building, a large gravel-covered area (former wastewater surface impoundments, three above-ground inactive bulk petroleum storage tanks, an outdoor electrical switchyard, and an office building. The Facility is surrounded by a chain-link fence topped with barbed wire, and access to the Facility is controlled by a security guard. The facility locus is shown on Figure 1.

The property has been utilized for electricity generation since the 1890's. Prior to the 1890's, the property was utilized for non-related commercial activities, including ship repair. The original generating station was built in circa 1892 and operated by the Boston Edison Company (BECo). Historically, electricity was generated using steam turbines powered by coal and/or No. 6 fuel oil boilers until the mid-1960's, at which time only No. 6 fuel oil was utilized to power two new horizontal turbine generators (Units 1 and 2) and a combustion jet turbine using No. 2 fuel oil. In the mid-1980s Units #1 and #2 were converted to run on natural gas, but with the capability to run on No. 6 fuel oil in emergency situations. In 1997, the Facility was purchased by Sithe New Boston, LLC. In 2003, Sithe New Boston, LLC was purchased by Exelon and the entity was renamed Exelon New Boston, LLC. Units 1 and 2 were retired in 2002 and 2007, respectively. Currently, the combustion jet turbine is operated to generate electricity during high demand periods.

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[1] "contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Drinking water is provided to the South Boston area, including the Facility, by the Massachusetts Water Resources Authority (MWRA) and is sourced from the Quabbin Reservoir located in western Massachusetts. Based on discussions with the City of Boston, and review of the MassGIS map for the area, there are no known public or private drinking water supply wells or industrial water supply wells located within one mile of the Facility. Therefore, exposure to contaminated groundwater at the Facility is limited to potential environmental impacts associated with groundwater discharge to surface water (i.e., the Reserved Channel). Additional information isprovided below indicating that groundwater is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels".

There are nine (9) known historical releases that have occurred at the Facility, all of which have been reported and addressed under Massachusetts General Laws 21E (Chapter 21E) and the accompanying regulations, 310 CMR 40.0000 et seq. (the Massachusetts Contingency Plan or MCP). Ten additional releases were reported to have occurred between approximately 1974 and 1986; they are herein referred to as "Releases of Unknown Location".

In connection with six (6) of the nine (9) historic releases, a Class A or B Response Action Outcome (RAO) has been filed with Mass. DEP, indicating that a level of No Significant Risk exists or has been achieved at the Facility. That is, a Class A or B RAO means, inter alia, that each source of oil and/or hazardous material (OHM) which is resulting in or is likely to result in an increase in concentration of OHM to groundwater, is eliminated or controlled. The three remaining historic releases are all associated with releases of #6 oil from Tank No. 3. Additional information is provided below.

Assessment activities have been conducted over a period of several decades. Additional information is provided relative to four areas: 1) Fuel Oil Tank No. 3; 2) Former Wastewater Treatment Impoundments and Former Accumulation Areas; 3) the Southwest Courtyard Area; and, 4) Releases of Unknown Location. Assessment activities and results are provided below relative to Groundwater, Indoor Air, Surface Soil, Surface Water, Subsurface Soil and Outdoor Air.

Supplemental evaluation of groundwater flow direction on a facility-wide basis was conducted in September 2011. The evaluation included the installation of monitoring wells, well elevation survey and gauging of total of eleven (11) existing and seven (7) newly installed wells, which are located as shown on Figure 2. Groundwater contours from the September 2011 gauging event are shown on Figure 3. Groundwater flow direction, including the Southwest Courtyard Area was found to be to the north-northwest. The groundwater gradient was highest in the easterly portion of the facility where topography drops from the area of the former Wastewater Treatment Impoundments to the area around Tanks No. 1 and No. 2. Minimal gradient was identified in vicinity of Tank No. 3.

Groundwater parameters were evaluated during the gauging event using a YSI 600 multi-parameter groundwater meter. The parameters measured included pH, dissolved oxygen (DO), oxidant-reduction potential (ORP), conductivity and temperature. pH ranged from 5.83 to 7.95 and averaged 6.6. DO ranged from 7.11 mg/l to 0.17 mg/l and averaged 1.7 mg/l. The levels of dissolved oxygen were generally highest in the upgradient (southerly) portion of the property and lowest in vicinity of Tank No. 3. Oxidation Reduction Potential (ORP) ranged from 199.7 millivolts (mV) to -153.8 mV. Lowest ORP readings were generally obtained in monitoring wells with lowest dissolved oxygen. Conductivity ranged from 171 micro Siemens per centimeter (µS/cm) to 12,560 µS/cm. A table of groundwater geochemical parameters is attached. The highest conductivity readings were obtained in monitoring wells located in proximity to the Reserved Channel, which is indicative of tidal influence and resultant saline conditions. Exelon will conduct site-wide groundwater gauging events and will measure groundwater parameters on an annual basis. Temperature ranged from 54°F to 67°F and was related to depth to groundwater with lower temperatures measured in wells with the higher depth to groundwater. A table summarizing these data is attached.

Tank No. 3:

According to available records, five historic releases of No. 6 Fuel Oil from Tank No. 3 at the Facility (see Site Plan, attached hereto) has been reported between 1989 and 1994. These releases were addressed under Massachusetts General Laws Chapter 21E (Chapter 21E) and accompanying regulations, 310 CMR 40.000 et seq. (the Massachusetts Contingency Plan or MCP) under the Release Tracking Number (RTN) 3-4519.

In 1994, ABB Environmental Services, Inc. prepared a report entitled "Hydrogeology Assessment Boston Edison Company New Boston Station". The Hydrogeology Assessment identified tidal influences of up to one foot (in proximity to the Reserved Channel) that diminished to no influence south of Tank No. 1. Given the tidal influence identified by ABB, it is likely that groundwater in the tidal zone is saline and not suitable for human consumption. ABB determined that the hydraulic gradient varied from 0.0045 feet per feet during high groundwater conditions to 0.0023 feet per feet during low groundwater conditions. ABB calculated the migration rate of #6 oil in the environment to be from 0.006 feet per year to 0.06 feet per year. Given the low hydraulic gradient and groundwater velocity coupled with tidal influencesin the vicinity of Tank No. 3, the amount of groundwater originating in upland areas of the Subject Property discharging to the Reserve Channel is expected to be minimal.

Groundwater analyses conducted by GZA did not identify dissolved petroleum constituents at concentrations at or above applicable groundwater standards under the MCP. SeeGZA Phase II – Comprehensive Site Assessment Report for Fuel Oil Tank No. 3, SITHE New Boston LLC dated August 9, 1999 and GZA Periodic Evaluation of the Temporary Solution Fuel Oil Tank No. 3, 776 Summer Street, Boston, MA dated November 2004. Accordingly, a Class C RAO was filed with Mass. DEP in connection with RTN 3-4519 in August 1999. SeeGZA Class C Response Action Outcome Report for Fuel Oil Tank No. 3, SITHE New Boston LLC dated August 9, 1999. The Class C RAO indicates that a temporary solution has been achieved, ensuring the

elimination of any substantial hazard and the identification, characterization and, to the extent feasible, elimination, control or mitigation of any source of OHM. The Class C RAO recommends no further action other than periodic monitoring. SeeGZA Class C Response Action Outcome Report for Fuel Oil Tank No. 3, SITHE New Boston LLC.

The GZA Periodic Evaluation of the Temporary Solution Fuel Oil Tank No. 3, 776 Summer Street, Boston, MA dated November 2004 provides groundwater sampling analytical data collected in 2002 and 2004; the samples were collected from four monitoring wells (GZ-1, GZ-2, GZ-3, and GZ-7) and analyzed for Extractable Petroleum Hydrocarbons (EPH). The analytical results did not indicate the presence of EPH in any of the samples. The Periodic Evaluation report also indicates that site conditions have not substantially changed since the initial RAO was submitted in 1999 and continues to recommend no further action other than periodic monitoring.

On December 11, 2007, Exelon New Boston, LLC, and its LSP, OHI Engineering, received a petition from ten (10) South Boston residents. The petition requested that Exelon New Boston, LLC's Tank No. 3 Release Site (RTN 3-4519) be designated as a Public Involvement Plan (PIP) Site under the MCP in accordance with 310 CMR 40.1404. On December 19, 2007, OHI submitted a reply to the petitioners confirming that the Tank No. 3 Release Site was eligible for, and was designated as, a PIP Site in accordance with the MCP. Interviews and meetings were held with the public during development of a Draft Public Involvement Plan. The Draft PIP was presented at a public meeting held at the South Boston Public Library and comments were received from the public. The Final PIP was prepared and submitted to the MassDEP on April 17, 2008. See FINAL PUBLIC INVOLVEMENT PLANTank No. 3 Release Site, DEP RTN 3-4519 dated April 17, 2008 prepared by CLF Ventures and OHI Engineering. Since that time, semi-annual public meetings have been held at the Tynan Community Center in South Boston. The purpose of these meetings has been to update the public regarding the Tank No. 3 Release Site and the status of the Exelon New Boston Facility, in general.

Groundwater sampling and laboratory analysis has been conducted annually in the area around Tank No.3 from 2008 to the present. Samples are obtained using EPA/MassDEP typical methods and submitted to an independent analytical laboratory for analysis of Extractable Petroleum Hydrocarbons (EPH). The EPH analysis tests for three specific carbon ranges: C_9-C_{18} aliphatic hydrocarbons, C_{19}-C_{36} aliphatic hydrocarbons and for C_{11}-C_{22} aromatic hydrocarbons. The MCP Method 1 GW-3 standards for these carbon ranges are 50,000 micrograms per liter (µg/l), 50,000 µg/l and 5,000 µg/l, respectively.

EPH analytical data collected in December 2008 did not identify dissolved petroleum concentration at or above applicable MCP standards in groundwater monitoring wells downgradient of Tank No. 3. Concentrations of C_{11}-C_{22} Aromatics (petroleum hydrocarbons) were detected in one groundwater monitoring well, MW-105, located upgradient of Tank No. 3. Concentrations of these Aromatics were 8,400 µg/L, which exceeded the MCP Method 1 GW-3

groundwater standard of 5,000 µg/L. See OHI Engineering, Inc. Post Class-C RAO Status Report, March 2009.

Recent groundwater analytical data from sampling events in August 2009, August 2010 and August 2011 did not identify EPH, including C_{11}-C_{22} Aromatics, at or above the MCP Method 1 GW-3 standards in groundwater monitoring wells located upgradient and downgradient of Tank No. 3. Maximum concentrations of detected between 2009 and 2011 for the C_9-C_{18} aliphaticEPH carbon range was 1,800 µg/l, C_{19}-C_{36}aliphaticswas 5,900 µg/l, and C_{11}-C_{22} aromatic was4,400 µg/l;all of which are below the MCP Method 1 GW-3 standards. This data has been submitted to DEP in the Post Class C RAO Status Reports dated September 2009, September 2010 and September 2011. SeeOHI Engineering, Inc. (OHI) Post Class C RAO Status Reports, September 2009, September 2010 and September 2011.

The OHI Engineering, Inc. Final Periodic Evaluation of the Temporary Solution dated November 2009 indicates that site conditions have not substantially changed since the initial RAO was submitted in 1999 and recommend no further action other than periodic groundwater gauging and annual groundwater sampling and analysis. A Draft Periodic Evaluation of the Temporary Solution was discussed at a Public Meeting in October 2009 and comments were received and addressed.

Groundwater is at a depth of approximately 9.5 to 10 feet below surface grade and subsurface utilities are present at shallower depths above the water table surface. As indicated in the GZA Phase II Report, there are no known public or private drinking water wells at or within 500 feet of the Site. Based on Site activities and uses it is unlikely that an exposure pathway will result from groundwater contamination. See GZA Phase II – Comprehensive Site Assessment Report for Fuel Oil Tank No. 3, SITHE New Boston LLC.

The absence of NAPL and the presence of dissolved petroleum constituents below applicable MCP standards at downgradient locations indicate that groundwater in vicinity of Tank No. 3 is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels".

Former Wastewater Treatment Impoundments and Former Accumulation Areas:

Mr. Jack Hughes, Exelon's Facility Manager, was interviewed regarding the former wastewater treatment impoundments and former coal ash, metal hydroxide sludge, and fly and bottom ash accumulation areas. Mr. Hughes worked at the facility as an employee of Stone and Webster starting in 1999 and became an employee of Sithe in 2000. Sithe was subsequently acquired by Exelon and in 2004, he was assignedto New Boston Station by Exelon as the Technical Manager at the Facility. He was responsible for all remediation activities, engineering issues and project management. In 2007, Mr. Hughes was the Project Manager for decommissioning and retirement of Unit 1 and Unit 2 including the wastewater treatment system.

According to Mr. Hughes, the former wastewater treatment impoundments had been constructed in 1980 and the equalization tanks were constructed in the late 1980s/early 1990s. It is Mr. Hughes' understanding from his review of historic drawings and through discussions with past engineering consultants that the wastewater treatment impoundments and tanks were constructed in the same location as the former bottom and fly ash, metal hydroxide sludge, and coal ash accumulation areas.

The wastewater treatment impoundments were closed commencing in 1989, see ECJordan, Clean Closure – Soils, 1990. Closure of the impoundments included 74 soil samples, installation of 8 groundwater monitoring wells (Wells OW-101 through OW-108), groundwater sampling and analysis, removal of impacted/stained soil beneath the liners of the impoundments, and submittal of closure documents to the MassDEP; see ECJordan, Clean Closure – Soils, 1990. On December 17, 1991, the MassDEP approved the clean closure of the impoundments for both soils and groundwater.

Groundwater monitoring studies were conducted in the easterly portion of the property (and approximate location of the referenced accumulation areas) and in downgradient areas; see Addendum No. 1 to Groundwater Closure Performance Report, ABB, 1997. As noted above, the referenced report was submitted to the MassDEP as part of Clean Closure of the impoundments. Groundwater samples were collected by BECo and analyzed for metals and volatile organics. Concentrations of Arsenic, Lead, Selenium and Nickel were detected by BECo at concentrations in excess of the Massachusetts Maximum Contaminant Level (MMCL); i.e., the drinking water standards. Additional samples were collected for metals analysis by an independent laboratory and by the MassDEP. The samples were analyzed using Atomic Absorption (AA) and Inductively Coupled Plasma (ICP) techniques. Re-analysis provided more accurate and reliable data and determined that no metals were present in groundwater at concentrations above the MMCL (see page 9 and page 10 of Addendum #1). Further, groundwater samples obtained from three monitoring wells installed by GZA to evaluate conditions at the #2 fuel oil storage tanks (AOC 2), downgradient of the former coal ash accumulation area, were analyzed for PAHs; see Response Action Outcome Report RTN 3-17596, GZA, 2000. No PAHs were detected in groundwater at concentrations above the method detection limit. GZA also collected groundwater samples in the vicinity of Tank No. 3 (AOC 7), which is also downgradient of the former accumulation areas. A total of nine groundwater samples were analyzed for PAHs, which were not detected in any of the samples; see Phase II Comprehensive Site Assessment Report for Fuel Oil Tank No. 3, GZA, 1999. Therefore, specific impacts to groundwater arising from the surface impoundments, or from the presence of coal ash in fill material, have not been identified.

Mr. Hughes was familiar with the operational history of the waste water treatment system through daily operational meetings, discussions with treatment plant operators, and review of compliance of documents. He was not aware of significant operational issues or non-conformances regarding discharges from the system to the environment. According to Mr. Hughes, the wastewater treatment system was decommissioned in 2007. During

decommissioning of the treatment system, all tanks, pits and piping were drained, liquids and sediments were removed and disposed of off-site, and all components were pressure washed.

Supplemental evaluation of groundwater flow directions was conducted in 2011. The evaluation included the installation of monitoring wells, well elevation survey and gauging of existing and newly installed wells. Groundwater flow direction was found to be to the north-northwest. The groundwater flow direction places the monitoring wells previously installed by GZA in a downgradient position relative to the former accumulation area and, therefore, are properly located to detect any impacts to groundwater. Previous assessment of groundwater samples collected from the GZA monitoring wells found no indications of impacts from the accumulation areas at concentrations in excess of regulatory standards.

Given the completeness and thoroughness of the closure process, it is highly unlikely that any significant contamination related to the former accumulation areas and wastewater treatment system would have gone unidentified or unaddressed. Therefore, we conclude that groundwater in vicinity of the Former Wastewater Treatment Impoundments and Former Accumulation Areas is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels".

Southwest Courtyard Area:

This area previously contained #6 fuel oil tanks and a sulfuric acid tank. Previous releases of #6 fuel oil and sulfuric acid were reported, assessed, remediated and closed under the MCP. A release of #6 fuel oil was identified during response actions taken regarding a release of sulfuric acid. Monitoring wells were installed by RAM Environmental and by GZA, Inc.; see Final Phase I Initial Site Investigation Report RTN 3-13007, RAM Environmental, 1996 and the Phase II Comprehensive Site Assessment, RTN 3-13007, GZA, 1998.

Examination of the groundwater elevations provided in the Phase II Comprehensive Site Assessment Report prepared by GZA indicates that the flow direction is predominantly to the north/northwest towards the Reserved Channel. This flow direction is contraindicated only by the groundwater elevation in monitoring well MW-3. It should be noted that MW-3 is located at the northerly end of the release area and is located closer to the building than the other monitoring wells. Soil borings do not provide indication of change in soil strata that could affect groundwater elevations in the monitoring wells. Petroleum concentrations attenuate in wells from the south (GZA-3) to the north (MW-1, GZA-2 and MW-3) lending further credence that groundwater flows to the north towards the Reserved Channel. Petroleum concentrations in the northerly wells (MW-1, MW-3 and GZA-1) are well below the MCP Method 1 GW-3 standards. Given that the site is approximately 800 feet from the Reserved Channel, groundwater concentrations would be expected to attenuate by an approximate 10-fold factor (see Table 4.4, MassDEP Policy #WSC-02-411) between the release area and the Reserved Channel. The calculated dilution factor further supports a finding that migration of contaminated groundwater is under control.

Groundwater flow direction in the Southwest Courtyard area was re-evaluated by installation of a new monitoring well (OHI-201) in the southerly portion of the Courtyard and by site-wide groundwater gauging in September 2011. Groundwater flow direction was found to be to the north towards the Reserved Channel and, therefore, confirming that groundwater migration in the Southwest Courtyard area is under control.

Furthermore, Exelon recently received a letter entitled "Notice of Audit Findings AUL Audit Inspection and Technical/Compliance Screening Audits" from the MassDEP dated August 4, 2010 (see attached). The letter states the following:

> *"Based on the technical screening audit of the RAO, MassDEP is not directing you to undertake further response actions at this time in regard to the RAO."*

Therefore, we conclude that this area has been properly assessed and addressed and meets all applicable standards under M.G.L. Chapter 21E and the MCP such that it poses no significant risk to human health or the environment. Groundwater flow direction is predominantly to the north/northwest towards the Reserved Channel (based on regional groundwater flow characteristics). Further, #6 oil has limited solubility and mobility in the environment, and concentrations would be significantly diluted between the release site and the Reserved Channel. As noted above, there are no known public or private drinking water supply wells, or industrial supply wells located within one mile of the Facility and potential exposure to groundwater in the Southwest Courtyard area would be limited to the environment (i.e., the Reserved Channel)..Given these factors, we conclude that groundwater in vicinity of the Southwest Courtyard Area is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels".

Releases of Unknown Location:

A total of 10 releases of unknown location have been identified at the Facility, nine of which involved either #2 oil or #6 oil; see Draft RCRA Facility Assessment, Mabbett and Associates, Inc. 2009. The remaining release involved approximately 600 gallons of magnesium. Fuel oil storage has occurred in three areas on the property: the #6 oil bulk storage tanks in the northeasterly corner, the #2 fuel oil tanks in the northcentral portion of the property, and former USTs in the southwestern portion of the property. The most likely locations for the fuel oil releases are in these areas of the property, all of which have been assessed. Magnesium storage occurred in the southwest courtyard area.

Throughout this time period, there is a history of the Facility proactively and responsibly identifying, reporting, assessing and addressing all environmental issues at the Facility in accordance with applicable environmental laws and regulations. The monitoring wells and soil borings installed on the property have evaluated soil and groundwater quality throughout the Facility over at least the last 25 years. The soil borings and wells were predominantly installed

in areas of intensive industrial activities including the easterly portion of the property, the southwest courtyard area and in vicinity of the existing #6 fuel oil bulk storage tanks. Assessment and response actions have also been taken in the vicinity of the #2 fuel oil storage tanks servicing the "L Street Jet" and at former transformers.

In every case with the exception of Tank No. 3, the assessment and response actions taken have resulted in regulatory closure. In only one case have response actions taken for a release identified a previously unknown release and that release was subsequently assessed and closed under the Massachusetts Contingency Plan. Given these factors, we conclude that groundwater is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels" from releases of unknown location.

3. Has the migration of contaminated groundwater stabilized (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

   _____ If yes – continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[3]).

   _____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[4]) – skip to #8 and enter "NO" status code, after providing an explanation.

   _____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

[2] "Existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring.

[3] Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

[4]

4. Does "contaminated" groundwater discharge into surface water bodies?

_____ If yes – continue after identifying potentially affected surface water bodies.

_____ If no – skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s);

5. Is the discharge of "contaminated" groundwater into surface water likely to be "insignificant" (i.e., the maximum concentration[5] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

   _____ If yes – skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)" and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

   _____ If no – (the discharge of "contaminated" groundwater into surface water is potentially significant) – continue after documenting: 1) the maximum known or reasonably suspected concentration of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)" and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

   _____ If unknown – enter "IN" status code in #8.

Rationale and Reference(s):

[5] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the discharge of "contaminated" groundwater into surface water be shown to be "currently acceptable" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a remedy decision can be made and implemented[6])?

   _____ If yes – continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment[7] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessment(s), that the overseeing regulatory agency would deem appropriate for making the EI determination.

   _____ If no – (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") – skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

   _____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

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[6] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[7] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater monitoring/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes – continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically, identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically), as necessary) beyond the "existing area of groundwater contamination."

_____ If no – enter "NO" status code in #8.

_____ If unknown – enter "IN" status code in #8.

Rationale and Reference(s):

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (each appropriate supporting documentation as well as a map of the facility).

__X__ YE – Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Exelon New Boston LLC facility, EPA ID # MAR000010702,* located at 776 ummer Street. MA 02127. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO – Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN – More information is needed to make a determination.

Completed by: OHI Engineering, Inc.

(Signature) _____

Date 10 January 2012

(print) James Borrebach

(title) Principal

7/31/12

EPA (signature) _____

Date _____

(print) _____

(title) _____

(EPA Region or State) _____

Locations where References may be found: Massachusetts Department of Environmental Protection – Northeast Regional Office, Exelon New Boston facility, Exelon New Boston office in Medway, MA

- *GZA GeoEnvironmental, Inc. Phase II – Comprehensive Site Assessment Report for Fuel Oil Tank No. 3, SITHE New Boston LLC dated August 9, 1999*
- *GZA GeoEnvironmental, Inc. Class C Response Action Outcome Report for Fuel Oil Tank No. 3, SITHE New Boston LLCdated August 9, 1999*
- *GZA GeoEnvironmental, Inc., Risk Characterization, SITHE New Boston, LLC dated August 1999.*
- *GZA GeoEnvironmental ,Inc. Periodic Evaluation of the Temporary Solution Fuel Oil Tank No. 3, 776 Summer Street, Boston, MA dated November 2004*
- *GZA GeoEnvironmental, Phase II Comprehensive Site Assessment, RTN 3-13007, 1998.*
- *GZAGeoEnvironmental, Response Action Outcome Report RTN 3-17596, 2000*
- *OHI Engineering, Inc. Post Class C RAO Status Report, September 2008.*
- *OHI Engineering, Inc. Post Class C RAO Status Report, March 2009.*
- *OHI Engineering, Inc. Post Class C RAO Status Report, September 2009*

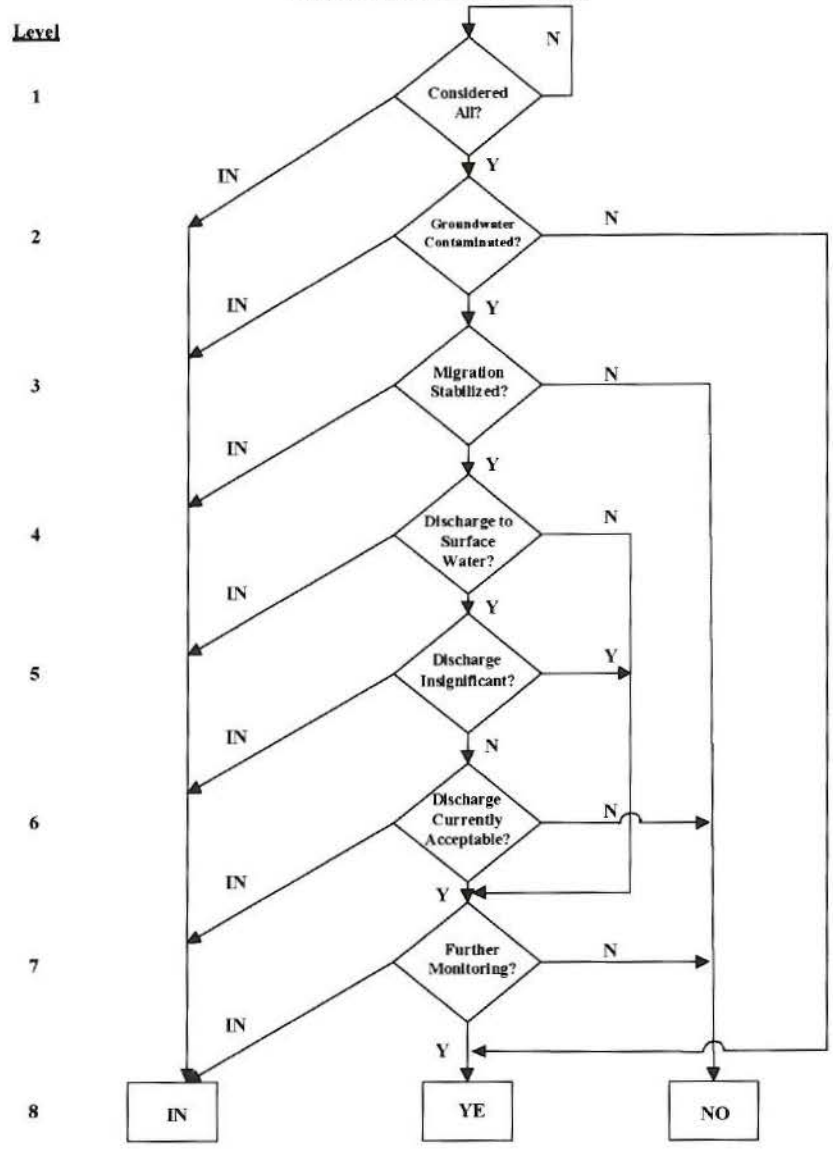
- *OHI Engineering, Inc. Final Periodic Evaluation of the Temporary Solution,November 2009*
- *OHI Engineering, Inc. Post Class C RAO Status Report, September 2010*
- *OHI Engineering, Inc., Soil Management Plan, October 2008*
- *E. C. Jordan, Inc., Clean Closure Report – Soils, 1990*
- *E.C. Jordan, Inc., Addendum No.1 Clean Closure Report – Soils, 1990*
- *RAM Environmental,Final Phase I Initial Site Investigation Report RTN 3-13007, 1996*
- *ABB,Addendum No. 1 to Groundwater Closure Performance Report, 1997*
- *Mabbett and Associates, Inc., Draft RCRA Facility Assessment, 2009*
- *Mass DEP, Notice of Audit Findings AUL Audit Inspection and Technical/Compliance Screening Audits, August 2010*

Contact telephone and e-mail numbers

For OHI (name) James R. Borrebach, P.E., L.S.P.
(phone) 508-339-3929
(e-mail) jborrebach@ohiengineering.com

Facility Name: _____
EPA ID#: _____
City/State: _____

MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)



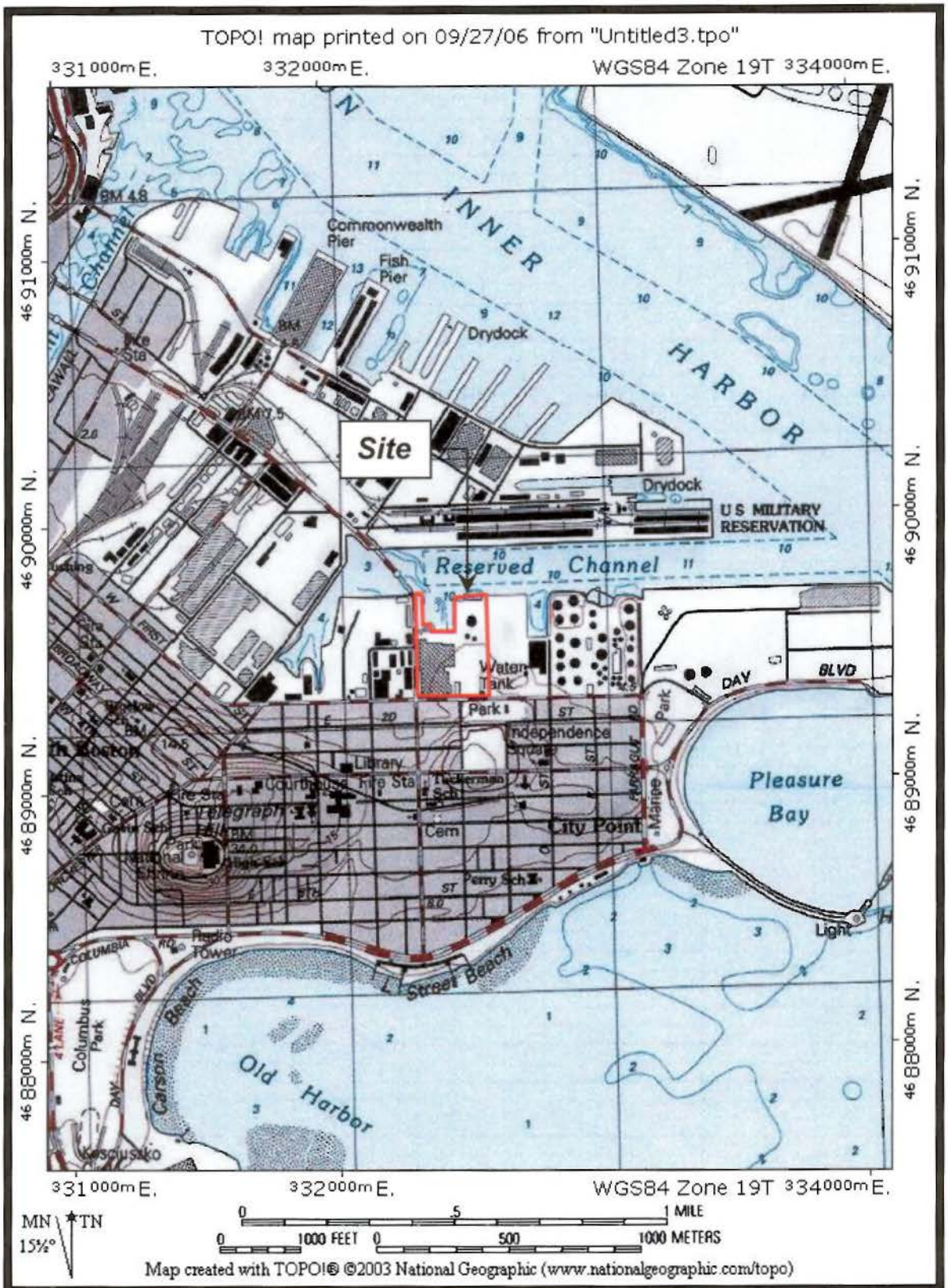
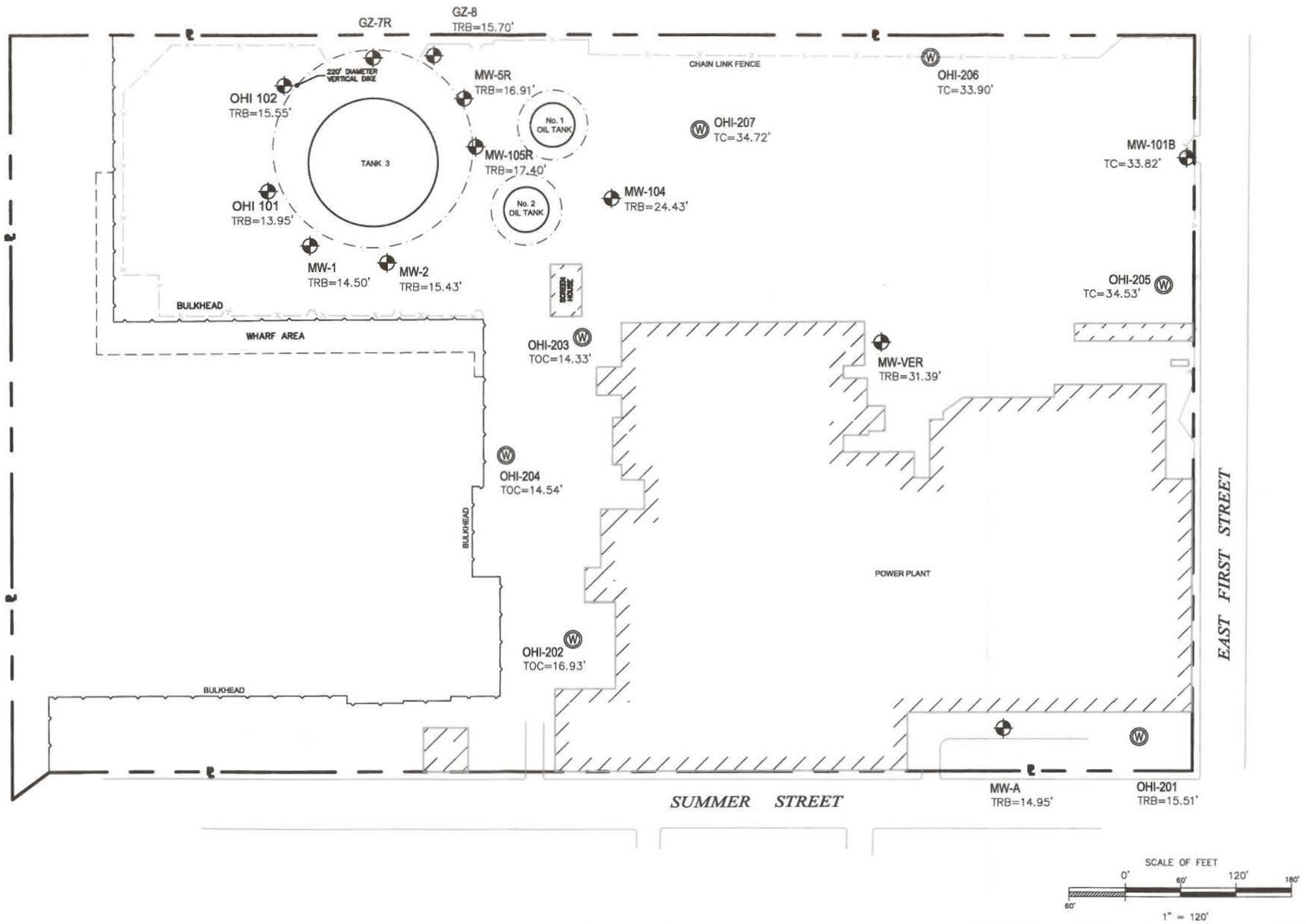


Figure 1. Site Locus
Exelon New Boston
776 Summer Street
Boston, MA

OHI
OHI Engineering, Inc.
Engineers and Environmental Scientists
44 Wood Avenue Mansfield, MA

N
W E
S



GENERAL NOTES:

1) SITE DETAIL DEPICTED HEREON HAS BEEN COMPILED FROM VARIOUS SOURCES AND IS NOT THE RESULT OF AN ON THE GROUND SURVEY WITH THE EXCEPTION OF MONITORING WELLS.

2) SEVEN MONITORING WELLS (OHI–201 THROUGH OHI–207 WERE INSTALLED DURING AUGUST 2011.

LEGEND

- (W) - NEWLY INSTALLED MONITORING WELL
- ⊕ - EXISTING MONITORING WELL
- TOC= - TOP OF CASING
- TRB= - TOP OF ROAD BOX
- ——— - BULKHEAD
- ——x——x—— - CHAIN LINK FENCE
- – – – – - WHARF

SCALE OF FEET
0' 60' 120' 180'
1" = 120'

44 WOOD AVE BLDG 1
MANSFIELD, MA 02048
(508) 339–3929

OHI Engineering, Inc.

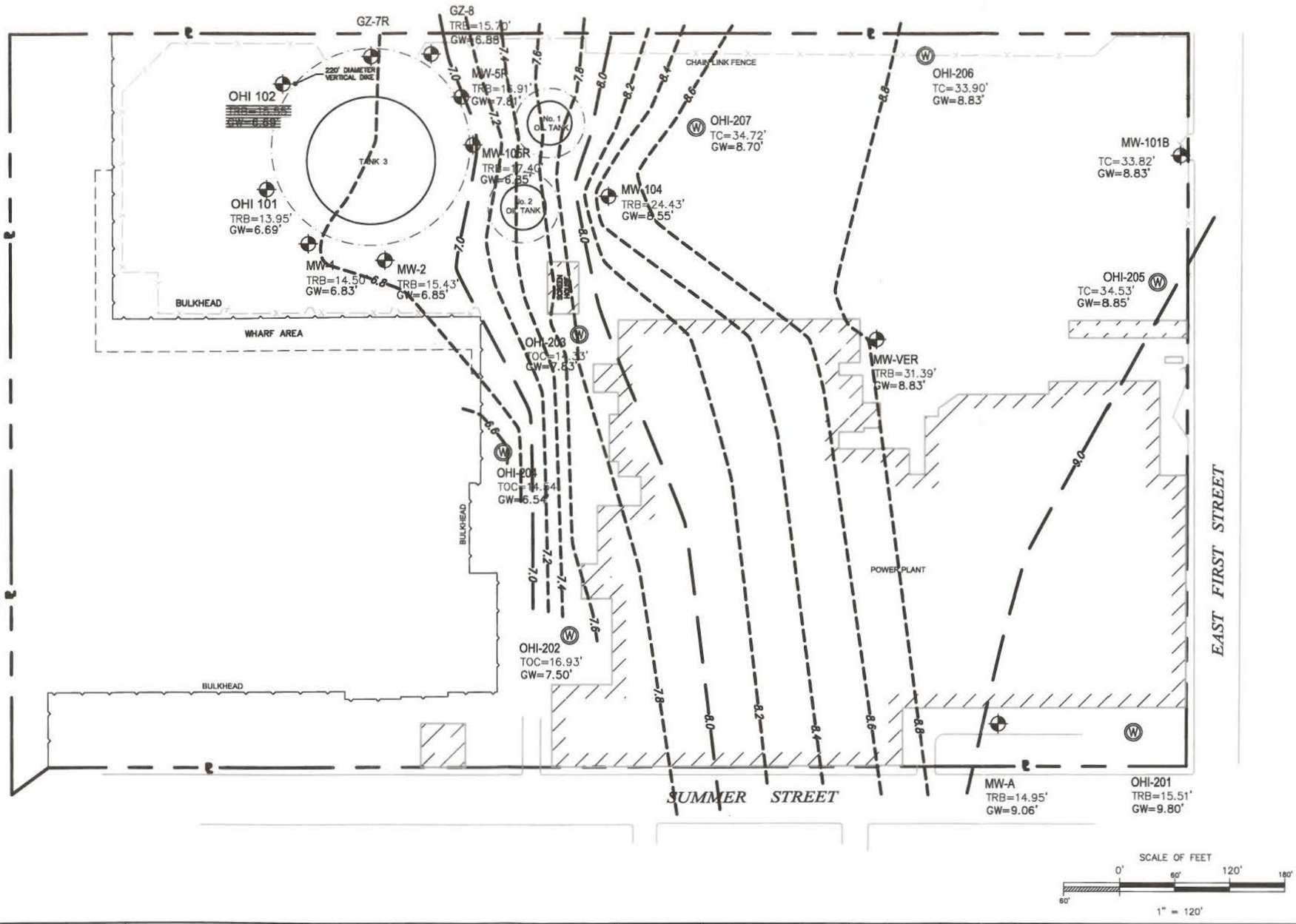
EXELON NEW BOSTON
NEW BOSTON STATION
SITE PLAN
776 SUMMER STREET – BOSTON, MA

REVISIONS		
NO.	DATE	DESCRIPTION
1.1	11/20/11	ADD WELLS

SHEET NO. 1 OF 1

DATE:	04/11/11
DESIGN BY:	SAM
DRAWN BY:	SAM
CHECKED BY:	DCM/JRB
JOB NO:	06–1113
DWG NO:	EXELON S BOSTON 04–06–11

FIGURE 2



GENERAL NOTES:

1) SITE DETAIL DEPICTED HEREON HAS BEEN COMPILED FROM VARIOUS SOURCES AND IS NOT THE RESULT OF AN ON THE GROUND SURVEY WITH THE EXCEPTION OF MONITORING WELLS.

2) GROUNDWATER ELEVATIONS ARE BASED ON SAMPLES TAKEN ON SEPTEMBER 30, 2011.

3) SEVEN MONITORING WELLS (OHI–201 THROUGH OHI–207 WERE INSTALLED DURING AUGUST 2011.

LEGEND

- (W) - NEWLY INSTALLED MONITORING WELL
- ⊕ - EXISTING MONITORING WELL
- TOC= - TOP OF CASING
- TRB= - TOP OF ROAD BOX
- BULKHEAD
- CHAIN LINK FENCE
- WHARF
- GW= - GROUNDWATER ELEVATION

44 WOOD AVE BLDG 1
MANSFIELD, MA 02048
(508) 339–3929

OHI Engineering, Inc.

EXELON NEW BOSTON

NEW BOSTON STATION

GROUND WATER CONTOUR MAP

776 SUMMER STREET – BOSTON, MA

REVISIONS		
NO.	DATE	DESCRIPTION
1.1	09/20/11	XXX

SHEET NO. 1 OF 1

DATE:	04/11/11
DESIGN BY:	SAM
DRAWN BY:	SAM
CHECKED BY:	DCM/JRB
JOB NO:	06–1113
DWG NO:	EXELON S BOSTON 04–06–11

FIGURE 3

Summary of Geo-Chemistry Field Measurements

Exelon
New Boston
Boston, MA

Well	Sample Date	Depth To Water (ft)	Dissolved Oxygen (mg/L or %)	Temperature (°F)	Conductivity (uS/cm)	pH	Oxidation Reduction Potential (mV)
MW-1							
	9/22/2011	7.67	NM	NM	NM	NM	NM
MW-2							
	9/22/2011	8.57	0.58	58.1	391	6.53	79.2
MW-101B							
	9/22/2011	24.99	3.15	54.6	1319	6.87	153.4
MW-104							
	9/22/2011	14.82	2.9	58.5	733	5.83	154.7
MW-105R							
	9/22/2011	10.55	NM	NM	NM	NM	NM
MW-Verizon							
	9/22/2011	22.46	6.68	54.2	478	7.95	74.2
O-MWA							
	9/22/2011	5.89	1.69	67.0	171	7.02	199.7
OHI-101							
	9/22/2011	7.26	0.17	60.5	983	6.18	70.5
OHI-102							
	9/22/2011	7.76	0.67	62.3	291	6.39	107.2
OHI-201							
	9/22/2011	5.71	7.11	65.5	199	7.34	175.7
OHI-202							
	9/22/2011	9.43	0.18	62.5	536	6.97	-72.8
OHI-203							
	9/22/2011	6.50	0.21	65.8	12560	6.62	14.9
OHI-204							
	9/22/2011	8.00	0.27	65.4	8796	7.62	-153.8
OHI-205							
	9/22/2011	DRY	NM	NM	NM	NM	NM
OHI-206							
	9/22/2011	24.98	0.31	54.7	1123	7.16	-93.4
OHI-207							
	9/22/2011	26.02	1.36	57.7	1151	6.21	2.9
GZ-7R							
	9/22/2011	9.10	0.29	62.5	1500	6.26	-4.1
GZ-8							
	9/22/2011	8.82	0.36	57.1	1576	6.26	-20.3

Notes:
mV is millivolts
mg/L is milligrams per liter
uS/cm is microSiemens per centimeter
°C is degrees centigrade
(ft) is feet
--- is not measured
Data collected prior to 2010 was collected by previous consultants and entered from previous reports

OHI
OHI Engineering, Inc.
Engineers and Environmental Scientists

44 Wood Avenue
Mansfield, MA 02048
Tel (508) 339 – 3929
Fax (508) 339 - 3140

January 10, 2012

Mr. Juan Perez
US EPA – Region 1
5 Post Office Square, Suite 100
Mail Code 0SRR07-3
Boston, MA 02109-3912

Re: Exelon New Boston, LLC; South Boston, MA
EPA ID# MAR000010702

Dear Mr. Perez:

Please find attached final signed copies of Environmental Indicator (EI) 750 *Documentation of Environmental Indicator Determination, Migration of Contaminated Groundwater Under Control*, which has been completed for the Exelon New Boston, LLC facility at 776 Summer Street in South Boston, MA. The document has been prepared by Exelon New Boston, LLC and OHI Engineering, Inc. and is provided to assist you in the RCRA Corrective Action Audit of the referenced facility.

As shown in the attached document, migration of contaminated groundwater is under control. Please do not hesitate to contact me should you have questions or comments regarding the attachments. We appreciate your consideration of this information and assistance in this matter.

Very truly yours,

OHI ENGINEERING, INC.

James R. Borrebach, P.E., L.S.P.
Principal

Attachments

Cc: Jack Hughes – Exelon New Boston, LLC
Lauren Liss, Esq. – Rubin and Rudman, LLP
James Chow – EPA
Frank Battaglia - EPA
Jeffrey Chorman – MassDEP