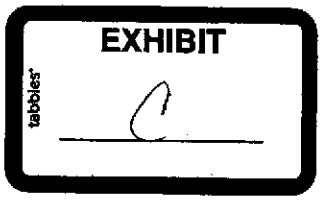

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

1 CONGRESS STREET - SUITE 1100

BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT NO: **MA0000833**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

ExxonMobil Oil Corporation
3225 Gallow Road
Fairfax, VA 22937

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

ExxonMobil Everett Terminal
52 Beacham Street
Everett, MA 02149

RECEIVING WATER: **Island End River/Mystic River Watershed (MA71)**

CLASSIFICATION: **SB**

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1.0 PROPOSED ACTION, TYPE OF FACILITY AND DISCHARGE LOCATION

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for the re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge storm water, groundwater, steam condensate, tank bottoms, and potable water (used for garage floor washing, hydrostatic testing, truck washing, fire testing, landscape watering, and safety showers) through outfall 001 (formerly known as outfall 001A) into the Island End River following treatment in an oil/water separator (OWS). The permit was issued to the Everett Terminal of Exxon Company on March 6, 2000 (the current permit) and expired on March 6, 2005. EPA received a permit renewal application dated September 14, 2004, from ExxonMobil. Since the permit renewal application was deemed both timely and complete by EPA, the permit has been administratively continued. The current permit also authorizes the direct discharge of the same discharges without treatment during heavy rain events through outfall 001B.

The ExxonMobil Everett Terminal, which is located in Everett, Massachusetts, is engaged in the receipt, storage, and distribution of petroleum products. The spectrum of fuels handled by this facility consists of gasoline, low sulfur diesel, jet fuel, heavy oil, and fuel additives. Petroleum products are received in bulk quantities at the terminal's marine vessel dock. Product is then transferred, via aboveground piping, to aboveground storage tanks located within the facility's tank farm areas. Final distribution of product is conducted at the facility's truck loading racks.

The ExxonMobil Everett Terminal operations also include the collection and discharge of storm water from Sprague Energy, an asphalt storage and distribution facility located on property formerly owned by ExxonMobil.

All of the water discharged is collected by the facility's storm water collection system which drains to a treatment works near the eastern edge of the North Tank Farm. Discharge to the Island End River is by means of a 6-foot diameter, 1500 foot long culvert that carries water from ExxonMobil to the river. The Everett Terminal has no river frontage. The downstream end of the culvert is regularly submerged due to the tidal influences of the river. The outfall location is shown on the site locus map, Figure 1.

2.0 DESCRIPTION OF DISCHARGE

The draft permit authorizes the discharge of storm water, groundwater, steam condensate, and potable water used for hydrostatic testing, truck washing, fire testing, landscape watering, and safety showers through outfall 001. All contributions to outfall 001 are collected in the facility's storm drains system and treated in an OWS prior to discharge. The discharges of tank bottoms and maintenance garage floor wash water (authorized in the current permit) are prohibited in the draft permit.

A more detailed description of each contribution to the facility discharge is provided in Section 6.0.

2.1 Summary of Monitoring Data

A quantitative description of the discharge in terms of significant effluent parameters based on discharge monitoring reports (DMRs) submitted for the ExxonMobil Everett Terminal during the time period of 2002 through 2006, is included in Attachment A. This data was collected and submitted in compliance with the Current Permit

Under Section 308(a) of the Clean Water Act (CWA), EPA requested additional sampling and analysis of non-storm water flows to Outfall 001 in a letter to ExxonMobil dated April 14, 2006. This included sampling of dry weather flows (primarily groundwater infiltration) for priority pollutants, gasoline

additives and iron. Dry weather flows were sampled on July 18th, 2006.

Historical groundwater data was also considered for this permit.

3.0 RECEIVING WATER DESCRIPTION

The receiving water, Island End River (Boston Harbor/Mystic River Watershed/Segment MA71-03), is a small tributary to the Mystic River. The entire river is less than one-half mile long, and about 500 feet across at its widest point. The Island End River flows into the Mystic River, approximately half a mile west of the Mystic River's end in Boston Harbor. The Island End River is designated as a Class SB water body by the Commonwealth of Massachusetts.

Under Section 303(d) of the CWA, states are required to develop information on the quality of their water resources and report this information to the EPA, the U. S. Congress, and the public. In Massachusetts, the responsibility for monitoring the waters within the State, identifying those waters that are impaired, and developing a plan to bring them into compliance with the Massachusetts Water Quality Standards (314 CMR 4.0), resides with the Massachusetts Department of Environmental Protection (MassDEP). The MassDEP evaluated and developed a comprehensive list of the assessed waters and the most recent list was published in the *Massachusetts Year 2004 Integrated List of Waters* (MassDEP, April 2005). The list identifies the lower reach of the Mystic River (including Island End River) as one of the waterways within Massachusetts that is impaired. The impairment, as identified by the MassDEP, is related to the presence of the following pollutants, which were not considered to be present due to natural causes: priority organics, metals and other inorganics, unionized ammonia, organic enrichment/low dissolved oxygen, pathogens, oil and grease, taste, odor, and color.

The MassDEP is required, under the CWA, to develop a Total Maximum Daily Load (TMDL) for a water body once it is identified as impaired. A TMDL is essentially a pollutant budget designed to restore the health of a water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body, while maintaining water quality standards for designated uses, and outlines a plan to meet the goal. A TMDL has not yet been developed for the Island End River. In the interim, EPA has developed the conditions for this permit to ensure that the discharges will not cause or contribute to a violation of the Massachusetts water quality standards (discussed further below). Should a TMDL be developed in the future, and if that TMDL establishes a waste load allocation that would require more stringent effluent limitations for this facility, then the permit may be re-opened.

Island End River was included in the investigation of sediment quality in the Mystic River drainage basins summarized in *Sediment Quality of Lakes, Rivers, and Estuaries in the Mystic River Basin, Eastern Massachusetts, 2001 – 03* (Breault, et al., 2005). Priority pollutant polycyclic aromatic hydrocarbons (PAHs), priority pollutant metals, pesticides and PCBs were measured in sediments from 5 locations in the Island End River. Elevated PAH concentrations measured for this study were identified in sediments from Island End River and attributed to residual waste discharges from a coal gasification and coal tar processing activities on the shores of the Island End River between the 1890's and the late 1950's.

3.1 Island End River Sediment Cleanup

In March of 2006, in-water construction work commenced on a major cleanup action to address coal tar contamination in sediments in the Island End River adjacent to the former coal tar processing facility site in Everett. The former coal tar processing facility site is located on the western bank of the Island End River and is currently home to the Distrigas LNG terminal, the Prolerized scrap metal yard, the

ExxonMobil oil terminal and docks, and numerous commercial warehousing and trucking operations. From the late 1800's until around 1960, the site was the home to a large coal gasification plant and coal tar processing facility. MassDEP identified three large corporations – currently Keyspan Energy (former Eastern Enterprises), Honeywell, Inc. (former Allied Chemical), and Beazer East (former Koppers Co.) – as Potentially Responsible Parties (PRPs) for the site, and eventually entered into an Administrative Consent Order with all three corporations in 1989 to compel them to clean up the site in accordance with the requirements of M.G.L. c. 21E and the Massachusetts Contingency Plan (MCP). (Roberson, 2006) The MassDEP Release Tracking Number (RTN) for the former coal tar processing facility site is 3-0309.

The remedial actions in the river, which have been planned, executed, and have nearly been completed over the course of the last five years or so, consist of three elements:

1. construction of a Confined Disposal Facility (CDF) extending outward from the west bank of the Island End River, enclosing an area of approximately 1.9 acres of the most heavily contaminated river-bottom sediments;
2. dredging of approximately 72,000 cubic yards of contaminated sediments from outside of the CDF, stabilization of the sediments by mixing them with Portland cement, and depositing most of the stabilized sediments within the CDF (with a smaller portion transported off-site for disposal at a licensed facility), and capping the CDF; and
3. implementation of a wetlands mitigation project to make up for the lost water sheet within the Island End River.

The cleanup work in the Island End River has been completed as a Remedial Abatement Measure under the MCP and will be evaluated for effectiveness by continued monitoring. The wetland mitigation plan is still in the discussion and design stage. (Roberson, 2006)

4.0 PERMIT LIMITATIONS AND CONDITIONS

The effluent limitations, monitoring requirements, and any implementation schedule, if required, may be found in Part I (Effluent Limitations and Monitoring Requirements) of the draft NPDES permit (draft permit).

5.0 PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

5.1 General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable state regulations. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the current/existing permit. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. The general conditions (Part II) of the draft permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

5.1.1 Technology-Based Requirements

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR Part 125 Subpart A) to meet best practicable control technology currently available (BPT), best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA can not be authorized by a NPDES permit.

EPA has not promulgated technology-based National Effluent Guidelines for storm water or other non-sanitary discharges from petroleum bulk stations and terminals (Standard Industrial Code 5171). In the absence of technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgment (BPJ).

5.1.2 Water Quality-Based Requirements

Water quality-based criteria are required in NPDES permits when EPA determines that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b) (1)(C) of the CWA). Water quality standards consist of three (3) parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards (WQS), found at 314 CMR 4.00, include these elements. The WQS limit or prohibit discharges of pollutants to surface waters and thereby assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA recommended water quality criteria, established pursuant to Section 304(a) of the CWA, be used unless a site-specific criterion is established. The Massachusetts WQS also generally prohibit toxic pollutants in toxic amounts [See Massachusetts 314 CMR 4.05(5)(e)]. EPA regulations pertaining to permit limits based upon water quality standards and state requirements include the provisions at 40 CFR §122.44(d). The effluent limits established in the draft permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained.

5.1.3 Anti-Backsliding

Section 402(o) of the CWA provides, generally, that the effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. Unless certain limited exceptions are met, backsliding from effluent limitations contained in previously issued permits is prohibited. EPA has also promulgated anti-backsliding regulations, which are found at 40 CFR 122.44(l). Unless statutory and regulatory backsliding requirements are met, the limits in the reissued permit must be at least as stringent as those in the previous permit. Since none of these

requirements apply to this facility, the effluent limits in the draft permit must be at least as stringent as those in the Current Permit.

5.1.4 Anti-Degradation

The Massachusetts Surface Water Quality Standards (314 CMR 4.00, February, 1996)[1] establish designated uses of the State's waters, criteria to protect those uses, and an anti-degradation provision to ensure that existing uses and high quality waters are protected and maintained. They also include requirements for the regulation and control of toxic constituents and specify that EPA's recommended water quality criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site-specific criterion is established.

Section 401(a)(1) of the CWA forbids the issuance of a federal license for a discharge to waters of the United States unless the state where the discharge originates, in this case Massachusetts, either certifies that the discharge will comply with, among other things, state water quality standards, or waives certification. EPA's regulations at 40 CFR § 122.44(d)(3), §124.53 and §124.55 describe the manner in which NPDES permits must conform to conditions contained in state certifications.

The Mystic River and Island End River are classified as Class SB water bodies by the State of Massachusetts and as such, are designated as habitat for fish, other aquatic life and wildlife and for primary (e.g., wading and swimming) and secondary (e.g., fishing and boating) contact recreation. Class SB waters may also be suitable for shellfish harvesting but there are no areas within the Island End or Mystic River currently approved by the State for such use.

This draft permit is being reissued with allowable effluent limits as stringent, or more stringent, than the Current Permit and accordingly will continue to protect the existing uses of the Island End River and Mystic River.

6.0 EXPLANATION OF EFFLUENT LIMITATIONS

6.1 Facility Information

The ExxonMobil Everett Terminal is a petroleum products distribution and bulk storage terminal. The facility, which comprises approximately 110 acres (including Sprague Energy), consists of a marine bulk product receiving and shipping facility, known as the Marine Facility, a light fuel (gasoline, diesel and jet fuel) storage area known as the North Tank Farm, and a heavy fuel oil and asphalt storage area known as the South Tank Farm. Figures 2 and 3 show the layouts of the North and South Tank Farms.

Sprague Energy is co-located in the South Tank Farm. ExxonMobil is responsible for storm water and any other discharges from Sprague Energy into ExxonMobil's storm water collection system. All discharges generated in the Marine Facility, the South Tank Farm, and the North Tank Farm flow to the terminal's storm drain system and collect at the treatment works located in the North Tank Farm. The treatment works includes flow distribution, oil/water separation and transfer pumping equipment, as described in section 6.2.9.

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1 The Massachusetts Surface Water Quality Standards ("Massachusetts WQS") referenced in this Fact Sheet are those adopted in 1996. Massachusetts recently adopted revisions to its Standards in January 2007 and has submitted them to EPA for approval. As the revisions are not yet approved, with the exception of certain copper criteria, the 1996 version is applicable to this permit.

6.1.1 Marine Facility

The Marine Facility is located at the confluence of the Island End River and the Mystic River. Petroleum product is delivered by ship or barge at the Marine Facility and transferred via aboveground piping to the storage tanks at the North and South Tank Farms. Marine vessels arrive at the three berths on the Mystic River. One of the berths (Berth #4), is currently idle. Berth #1 is a 440-foot long barge berth and Berth #3 is a tanker berth. Berths #1 and 3 are used to transfer product from marine vessels to the storage tanks in the North and South Tank Farms and to transfer product from the North and South Tank Farms to marine vessels.

At the Marine Facility, each berth is equipped with two containment areas for transfer piping and hoses. These containment areas are cleaned out by vac truck during or after rain events. The storm water is discharged at the head of the treatment works.

6.1.2 South Tank Farm

ExxonMobil

The South Tank Farm includes 18 bunkered concrete tanks. The bunkered tanks include four tanks in active service (Tanks 221-224); one tank in fire water service (Tank 207); and thirteen tanks (Tanks 201 – 206 and 208 – 214) that are out of service. The bunkered concrete tanks in active service are partially buried concrete tanks that are internally lined with steel floors and walls and are covered with flat concrete roofs. They are surrounded by mounded soil. These tanks are used to store #6 fuel oil which is sold, exclusively, to the nearby Mystic Power electric generating facility as backup fuel. The transfer piping to the power plant is owned and operated by Mystic Power,

The South Tank Farm includes two field-erected aboveground storage tanks (ASTs) in dikes. One tank (Tank 147) is used to store diesel fuel. The second tank (Tank 146) is currently idle.

A diesel powered emergency generator with an auxiliary diesel tank is located near Tank 210. Distillate transfers for Everett Terminal use are conducted from tank trucks to the emergency generator fuel tank. Transformers and electrical starters are also located throughout the South Tank Farm.

Sprague Energy

The asphalt storage and distribution area within the South Tank Farm is owned and operated by Sprague Energy. This area includes aboveground storage tanks (ASTs), and asphalt loading rack and other operational equipment. Although this area was formerly part of the Exxon facility and later sold to Sprague Energy, ExxonMobil maintains responsibility for Sprague storm water and any other discharges into ExxonMobil's storm water collection system.

6.1.3 North Tank Farm

The North Tank Farm is used to store light petroleum product, ethanol and fuel additives in aboveground storage tanks (ASTs), load product onto tanker trucks at a covered loading rack, store and maintain ExxonMobil's truck fleet, collect treat and discharge wastewater, and house administration offices. Product stored in the North Tank Farm consists of gasoline, distillates (heating oil, kerosene, and diesel) and additives. The North Tank Farm includes 26 product storage tanks and 7 additive tanks with a total nominal capacity of 1,785,000 barrels (75,000,000 gallons). Products stored in the North Tank Farm are

delivered to company owned and customer tank trucks via a 12-bay loading rack, with access to and from Beacham Street.

The North Tank Farm also includes a vapor recovery system (buried knockout tank and an aboveground vapor recovery unit) for emission controls on the loading rack. Transformers and electrical starters are located throughout the North Tank Farm. Satellite and central drum storage areas are located in areas of containment within the North Tank Farm. These areas store waste oils, lube oils, additives and distillates. Portable motor oil and a used oil container are located in the garage for vehicle maintenance. Used motor oil is collected in a storage tank on the north side of the garage. The North Tank Farm also includes two buried tanks; one tank for Everett Terminal heating oil and a second tank for product recovery.

Numerous transfer activities occur in the North Tank Farm. Additive transfers from tank trucks to the additive tanks occur adjacent to the additive tank dike area. Truck fueling occurs in the parking lot adjacent to the fuel dispensers. Vacuum trucks transfer oily water mixtures from tank water draw offs, to Tank 136, and transfer product from equipment drain downs back to storage tanks. Transfers of distillate used by the Everett Terminal are conducted from tank trucks to the buried heating oil tank.

6.2 Contributions to Outfall 001 in Draft Permit

All water collecting in storm drains and sumps around the Everett Terminal is collected at the facility's treatment works and then is discharged through Outfall 001. The various contributions, and the treatment works itself, are described in the following paragraphs. Table 1 summarizes the various contributions authorized in the draft permit and their flow volume, as estimated by ExxonMobil.

Table 1 – Discharges to Outfall 001 Authorized in Draft Permit

Contribution to Outfall 001	Average Flow (MGD)	Components
Storm Water	6.6	Rain water containing suspended solids, residual petroleum hydrocarbons from miscellaneous drips and spills of currently stored fuels
Groundwater infiltration	0.28	Groundwater containing residual contamination from current and historical releases of oil and hazardous materials
Former Effluent Pond	0.072	Groundwater containing residual contamination from historical releases of oil and hazardous materials, rainwater
Maintenance Activities	0.003	Potable water used for fire testing, landscape watering, and safety showers
Steam Condensate	0.0001	water
Truck Wash Water	0.0002	Potable water containing suspended solids, oil and grease
Hydrostatic Testing of Tanks and Piping	0.286 (intermittent)	Potable water
Marine Dock Drip Pans	0.004	Same as storm water

6.2.1 Storm Water from the North and South Tank Farms

Storm water is collected from unpaved diked areas around product storage tanks. Each diked area contains a below-grade sump with lift pump to transfer collected storm water to the gravity storm sewers that lead to the treatment works. The sump pumps are manually activated after an ExxonMobil operator has inspected the storm water. If there is no product sheen visible on the storm water, the sump pump is activated. If floating product is visible, it is removed prior to transfer. The sump pumps automatically shut down on low level but do not automatically restart. Due to the large volumes of storm water collecting at the treatment works, storm water typically remains in the diked areas for two to four days following a rain event.

Storm water falling in open paved areas, building roofs, and tank roofs on the North and South Tank Farms flows by gravity to the treatment works.

The loading racks in the North and South Tanks Farms are covered with a roof. However, there are no gutters on the roof, so rainwater falling on the roof falls onto the loading rack pads. Loading rack pad catch basins drain into the storm water collection system and to the treatment works on the South Tank Farm.

6.2.2 Groundwater

The flow of groundwater from Outfall 001 has been estimated by ExxonMobil at 280,000 gallons per day. This includes approximately 107,000 gallons per day (gpd) of groundwater during dry weather as estimated by the permittee based on 2005 flow records. No information is available, to date, indicating whether groundwater infiltration occurs via small leaks throughout the system or through larger, localized breaches in the storm drains.

The ExxonMobil facility has reported numerous releases of oil and hazardous materials (OHM) over many years and is currently a MassDEP listed remediation site (Release Tracking Number #3-0310) being remediated under the direction of a Licensed Site Professional (LSP). Although no permanent solution to site cleanup has been implemented, a Class C Response Action Outcome (RAO) was submitted to MassDEP on October 27, 2004. A January 2007 status report (#5) to ExxonMobil listed 8 areas of concern (AOCs) that remain on the site. Of these, three AOCs (#s 1, 4 and 8a) were described as containing light non-aqueous phase liquid (LNAPL). AOC #4 was described as "LNAPL at Miscellaneous Areas – North and South Tank Farm". AOC #s 1 and 8a were identified as the loading rack area and the area around the Mass Pipeline (MPL), respectively, in the North Tank Farm. So far, LNAPL removal has been limited to passive removal of LNAPL from wells in these AOCs.

Contaminated groundwater infiltration into the collection system contributes a constant flow of oil to the treatment works. Oil is skimmed off of the oil/water separator at least daily. In this sense, the storm drains and treatment works are operating as a de facto groundwater collection and treatment system. The site assessment for the facility conducted under the Massachusetts Contingency Plan (MCP) and dated November 12, 1996 credits the storm water collection system with creating "low spots in the water table" which cause oil and hazardous materials (OHM) dissolved in groundwater to migrate to the central portion of the site towards the sumps thereby preventing off site migration through the soil column. This same Site Assessment reported that "OHM dissolved in groundwater is likely not migrating off this site while the facility pumping is maintained". During a March 2006 site visit to ExxonMobil, LSP John A. Thomson reiterated that the hydraulic influence of the storm water collection sumps creates a groundwater gradient away from the property lines and towards the sumps. ExxonMobil has taken no action to date to mitigate the resulting infiltration of contaminated groundwater into the storm drains and ultimate discharge to Island End River. EPA finds, based on this information, that, although not initially

constructed for this use, the storm water collection and discharge system is being utilized as a critical component of the remedial action to prevent off-site migration.

Given the information available, including the results of recent dry weather flow sampling and observations of oil accumulation during both dry and wet weather, EPA believes the groundwater to be generally contaminated. Specific contaminants are discussed in section 6.3.

6.2.3 Former Effluent Pond

A small body of water known as the Effluent Pond, located between the treatment works and Outfall 001, was once used for storm water detention and is now a source of intermittent flows. Although the Effluent Pond currently serves no purpose, it does collect groundwater and rainwater. When the elevation of the Effluent Pond becomes close to overflowing, operators manually activate a drawdown pump. Water from the Effluent Pond is discharged to the head of the treatment works.

6.2.4 Maintenance Activities

Maintenance activities at ExxonMobil generate discharges of potable water that are discharged to the terminal storm drains. These include potable water used to wash floors, for landscape maintenance, and for safety showers.

6.2.5 Steam Condensate

ExxonMobil heats the facility's office and maintenance buildings and No. 6 fuel oil transfer piping with steam generated in an on-site boiler. The steam condensate resulting from this operation is discharged to outfall 001.

6.2.6 Truck Wash Water

The ExxonMobil Everett Terminal includes a paved truck wash area located outside of the maintenance garage. Water used to wash the truck drains to a storm water catch basin.

6.2.7 Hydrostatic Test Water

There has been one hydrostatic test water discharge reported at the facility since the issuance of the Current Permit. Discharge monitoring and reporting were conducted for this testing event in accordance with the procedures described in Part I.A.9 of the Current Permit. Potable water from the local municipal water supply was used as the source of water for this test. Results from the analysis of the hydrostatic test water shows conformance with the requirements and conditions identified in Part I.A.9 of the Current Permit.

6.2.8 Marine Dock Residual Product and Storm Water

The marine vessel dock has a steel drip pan located beneath each of the manifold areas to recover any potentially spilled product. Storm water as well as any residual product accumulating in the drip pan is pumped, as needed, into tank trucks and discharged into the head of the treatment works.

6.2.9 Treatment Works

The treatment works are used to treat all flows to outfall 001. The treatment system consists of a former oil-water separator, which is now used as a distribution chamber known as the separation flume, an oil water separator (OWS) (built in the late 1980's), a two-chamber wet well with a total of 5 submersible pumps, and a 1.45 million gallon above ground storage tank, known as Tank 140. Figure 4 shows a schematic of the current flows through the treatment works.

Flows from the terminal collect in the separation flume. A submerged pipe in the separation flume transfers flow by gravity into the OWS. The transfer rate may be controlled by a gate valve in the pipe between the separation flume and the OWS. The design flow for the OWS is 3,000 gallons per minute (gpm). However, ExxonMobil has acknowledged that flow through the OWS is frequently greater than 3,000 gpm. Flows which exceed the hydraulic transfer capacity of the separation flume and the OWS bypass the OWS and overflow from the separation flume to the first chamber of the wetwell.

The OWS is equipped with coalescing media and manually operated rotary skimmers to remove oil from the surface of the separator. The treatment works are checked at least twice per day and oily water is typically skimmed off twice per day. The skimmed oil is transferred to a below ground oil storage tank and allowed to separate further. Subnatant (water that has separated from the oil and sunk to the bottom) from the oil storage tank is pumped back to the separation flume to further concentrate the oil in the storage tank. The contents of the oil storage tank are periodically emptied and disposed of by a licensed oil disposal contractor. Effluent from the OWS flows into the first chamber of the wet well.

The wet well is divided into two chambers by a baffle to prevent oil captured in the first chamber from flowing into the second chamber. The two chambers are hydraulically connected at the bottom of the wet well. The first chamber contains two 750 gpm pumps and one 3,000 gpm pump. The system operates in lead/lag fashion with the two 750 gpm pumps leading the 3,000 gpm pump. The pumps in the first chamber transfer water treated in the OWS and bypass water to Tank 140.

The second wet well chamber contains two 10,000 gpm pumps. These are used during very heavy rainfall when the flow to the treatment works exceeds the 4,500 gpm capacity of the pumps in the first chamber of the wet well. By pass flows have been monitored by event sampling and reported as outfall 001B. Discharge monitoring data for outfall 001B is summarized in Attachment A. The bypass pumps are manually activated and shut down automatically on low level. Since bypasses have been prohibited in the draft permit, outfall 001B will no longer exist after new permit conditions take effect. (see Section 6.3.3.1)

Tank 140 is used as a secondary settling tank. Water from the first chamber of the wet well is transferred to Tank 140 and then overflows to discharge at Outfall 001. The sampling port on the discharge from Tank 140 has been used for discharge monitoring. The water level in Tank 140 remains constant at approximately 1.45 million gallons. There is no cover on Tank 140. Operators periodically climb to the top of the tank to inspect the surface and remove accumulated oil if necessary.

Flow from areas of the site that are not within the containment areas are collected, pumped to the treatment works and treated through the OWS during and immediately after each rain event. To minimize overflow and bypasses of the treatment works, storm water collected inside the containment areas is stored within those containment areas, for as long as 7 days, prior to being pumped to the collection system and the treatment works. In spite of this, bypasses of the treatment works and Tank 140 have occurred as frequently as 4 times a year since 2002.

6.3 Proposed Permit Effluent Limitations and Monitoring Requirements

The Draft Permit is conditioned to: (1) better regulate non-storm water discharges (e.g., wash water, hydrostatic test water and groundwater) alone or in combination with storm water runoff to Island End River, and (2) to better regulate ancillary operations that have the potential to contact storm water (e.g., materials storage, facility site-runoff, product blending, and product loading and unloading).

Storm water discharges from activities associated with petroleum bulk stations and terminals must satisfy practicable control technology currently available (BPT), best conventional technology (BCT) and best available technology (BAT) requirements and must comply with more stringent water quality based limits

if BCT and BAT requirements are not adequate. On September 25, 1992, EPA issued its General Permit for Storm Water Discharge Associated with Industrial Activity, and determined that the minimum BAT/BCT requirement for storm water discharges associated with industrial activity is a Storm Water Pollution Prevention Plan (SWPPP) [57 FR, 44438]. This general permit was reissued on October 30, 2000 (65 FR 64801) as NPDES Multi-Sector General Permits for Storm Water Discharges Associated With Industrial Activities and is known as the Multi-Sector General Permit (MSGP). Although petroleum bulk storage facilities are included as an industrial activity eligible for coverage by the MSGP, the Everett Terminal is not eligible for coverage under the MSGP partly because it already has an individual permit which contains numeric water-quality based limitations. In addition, the terminal's contaminated groundwater discharge is not among the "allowable non-storm water discharges" authorized under the MSGP (as defined in section 1.2.2.2 of the MSGP). However, EPA has included requirements in the draft permit to the extent possible and consistent with the intent of the MSGP. These requirements include, for example, the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and the prohibition against discharging wash waters where detergents have been used.

Similarly, contaminated groundwater discharges must also satisfy technology and water quality based requirements and must comply with more stringent water quality standards if technology requirements are not adequate. EPA Region 1 has established technology based effluent limits using BPJ for contaminants in the groundwater based on a review of commonly available and utilized groundwater treatment technologies at remediation sites. EPA requested, under Section 308(a) of the Clean Water Act, dry weather sampling in an effort identify priority pollutants which may be infiltrating into the storm drains with contaminated groundwater due to current or past uses of the site.

The effluent limits and permit requirements included in the Draft Permit are discussed in greater detail below.

6.3.1 Flow

Although there are numerous contributions to outfall 001, storm water contributes the overwhelming flow volume during heavy rain events and is the controlling contributor to the consideration of effluent flow limits in the following paragraphs.

Typical treatment technology employed by petroleum bulk storage terminals for storm water runoff is an OWS. This device uses gravity to separate lower and higher density contaminants from water, resulting in an oil phase above the oil/water interface and a heavier particulate phase (settleable solids) on the bottom of the separator. Accordingly, the sizing of OWSs is based on the following design parameters: water-flow rate, relative density of the contaminants to be separated, desired percentage removal of oil, and the operating temperature range.

To ensure proper operation of installed OWSs such that the oil and/or particulate contaminants are not passed through to the river, it is important that the flow through the separator be maintained at or below the maximum design flow rate of the separator. ExxonMobil has identified that the maximum design flow rating for the OWS currently at the facility is 3,000 gpm. The draft permit requires the permittee to retrofit the OWS inlet to ensure that the design capacity of the OWS is not exceeded and that all discharges are treated through it.

EPA acknowledges that flow from storm events is difficult to control entirely, given the varying nature of storms. There will, inevitably, be occasions of unusual weather. Consistent with effluent limit guidelines for point source storm water discharges from other industries (e.g., 40 CFR Part 423 steam electric power generating and 40 CFR Part 436 Mineral Mining and Processing), no monitoring or effluent limits have been set for treatment system overflow, as long as the collection and treatment facilities are designed and

operated to accommodate the peak flow and total volume of storm water and groundwater which would result from a 10-year, 24-hour frequency storm event. The draft permit requires that the date and volume of the system overflow be documented and reported to EPA and MassDEP with the monthly discharge monitoring reports. In addition, no operational discharges, such as fire testing, hydrostatic testing or truck wash water, are permitted until the potential for overflow has ended.

The standard conditions in Part II (paragraph B.4) of the draft permit (attached to all Massachusetts NPDES permits) allow for emergency bypasses of the OWS.

6.3.1.1 Bypasses

The current permit prohibits bypasses of the OWS through outfall 001B "except during naturally occurring precipitation from severe weather incidents like a hurricane". From 2002 through 2006 there were 12 bypass events including 4 events in 2006 (in May, June, July and November). There are effluent limits for these bypass discharges in the current permit. These effluent limits were exceeded (for total suspended solids) on four occasions in the last five years (see Attachment A).

EPA has eliminated outfall 001B bypass discharges and prohibited any bypasses of the OWS in the draft permit except as described in the General Conditions (Part II.B.4) of the draft permit. In lieu of a permitted bypass outfall, EPA has established design criteria for ExxonMobil's collection and treatment system in the draft permit intended to prevent frequent discharges of untreated storm water and groundwater, as described above. The prohibition against treatment system bypasses is consistent with EPA Region 1 requirements at other petroleum bulk storage facilities in the Boston Harbor area.

6.3.2 Total Suspended Solids (TSS)

Total suspended solids (TSS) include all particles suspended in water which will not pass through a filter. Storm water, carrying silt, dirt and eroded soil is often a source of suspended solids. Polynuclear aromatic hydrocarbons are readily adsorbed onto particulate matter and the release of these compounds can be, to an extent, controlled by regulating the amount of suspended solids released into the environment.

The Draft Permit limit for TSS remains unchanged at 30 mg/l and 100 mg/l for the average monthly and maximum daily values, respectively. The monitoring frequency for this parameter will remain monthly. The TSS limits in the Draft Permit are based upon the limits established in the Current Permit in accordance with the anti-backsliding requirements found in 40 CFR §122.44(l).

The ExxonMobil Everett Terminal was able to consistently meet its TSS limits at outfall 001 over the last permit cycle. At outfall 001B, the daily maximum limit of 100 mg/l TSS was exceeded one time and the monthly average limit of 30 mg/l TSS was exceeded four times during the last five years.

6.3.3 Oil and Grease

The current permit includes an oil and grease limit of 15 mg/l for the maximum daily value. This is a typical effluent limit for storm water at petroleum bulk storage facilities and reflects the capabilities of the oil/water separator to remove product in the event of an equipment leak or spill of petroleum into the storm water collection system. It is expected that with the best management practices in place at the facility, there will not be any oil accumulation at the treatment works. However, at this facility, groundwater infiltration into the collection system contributes a constant flow of oil to the treatment works. Oil is skimmed off of the oil/water separator at least daily. In this sense, the treatment works is operating as a de facto groundwater treatment system, removing residual oil from the site subsurface.

In establishing the technology-based effluent limit for oil and grease based on best professional judgement (BPJ), EPA reviewed a number of sources, including the substantial monitoring data being submitted pursuant to approved site remediation projects, reviewed a number of other EPA and state issued general permits and related effluent guidelines developed by EPA. Site remediation projects in Massachusetts and New Hampshire have consistently required an effluent limit maximum value for total petroleum hydrocarbons of 5 mg/l (USEPA, 2005). Since there are not expected to be any oil and grease constituents in the discharge except for petroleum hydrocarbons, the draft permit includes a groundwater treatment technology-based limit for oil and grease of 5 mg/l.

Review of monitoring data for outfall 001 from 2002 to 2006 indicates that only one of the monthly oil and grease samples exceeded 5 mg/l or the detection limit, which ranged from 4.2 to 5.3 mg/l. The detected oil and grease result greater than 5 mg/l was 7.2 mg/l in September of 2004. It is expected that with improved flow controls (see Section 6.3.1), ExxonMobil will be able to meet the new oil and grease effluent limit. EPA also believes that this limit will ensure that discharges from the facility do not contribute to the further impairment of the Island End and Mystic Rivers.

As noted in Section 3.0 of this Fact Sheet, oil and grease is one of the pollutants identified by the State of Massachusetts as having contributed to the impairment of the Mystic River (including Island End River). The MassDEP uses a narrative description (e.g., waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water) rather than a numeric threshold to identify whether this pollutant is an issue for a water body. The draft permit accordingly imposes a "no visible sheen" requirement.

In the future, should ExxonMobil remove the contaminated groundwater from the discharge or isolate it in such a way that it could be treated and discharged via an upstream internal outfall, a less stringent effluent limit for oil and grease in storm water at Outfall 001 could be considered as this would constitute a substantial and material change to the circumstances on which the effluent limit is based, in accordance with the anti-backsliding requirements of 40 C.F.R. § 122.44 (l).

6.3.4 pH

Massachusetts State Surface Water Quality Standards require the pH of Class SB waters to be within the range of 6.5 to 8.5 standard units (S.U.). The pH permit range of 6.5 to 8.5, which is to be monitored on a monthly basis, has been established in accordance with the State Surface Water Quality Standards. The discharge shall not exceed this pH range unless due to natural causes. In addition, there shall be no change from background conditions that would impair any uses assigned to the receiving water class. A summary of the discharge monitoring data submitted by the facility during the time period of November 2003 to March 2006 is included as Attachment A to this Fact Sheet. The pH limits in the draft permit are also retained in accordance with anti-backsliding provisions.

ExxonMobil has demonstrated its ability to meet the pH conditions in the current permit and those conditions are continued in the draft permit.

6.3.5 Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are a group of chemicals that are formed during the incomplete burning of coal, oil, gas, wood, garbage, or other organic substances, such as tobacco and charbroiled meat. There are more than 100 different PAHs. PAHs generally occur as complex mixtures (for example, as part of combustion products such as soot), not as single compounds. A few PAHs are used in medicines and to make dyes, plastics, and pesticides. Others are contained in asphalt used in road construction. They can also be found in substances such as crude oil, coal, coal tar pitch, creosote, and roofing tar. They are found throughout the

environment in the air, water, and soil. They can occur in the air, either attached to dust particles or as solids in soil or sediment. (ATSDR, 1995)

PAHs can enter surface water through discharges from industrial plants and waste water treatment plants, and they can be released to soils at hazardous waste sites if they escape from storage containers. The movement of PAHs in the environment depends on properties such as how easily they dissolve in water, and how easily they evaporate into the air. PAHs in general do not easily dissolve in water. They are present in air as vapors or adhered to the surfaces of small solid particles. Some PAHs evaporate into the atmosphere from surface waters, but most stick to solid particles and settle to the bottoms of rivers or lakes. PAHs can also bio-accumulate in fish and shellfish. (ATSDR, 1995) As discussed in Section 3, Island End River sediments have been contaminated with coal tar residues (which are rich in PAHs) due to historic industrial activities and cleanup of these sediments is ongoing.

There are sixteen (16) PAH compounds identified as priority pollutants under the CWA (See 40 CFR Part 423 - Appendix A). Group I PAHs are seven well known carcinogens. They are: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Group II PAHs are the nine priority pollutant PAHs not considered carcinogenic alone, but which can enhance or inhibit the response of the carcinogenic PAHs. They are: acenaphthene, acenaphthylene, anthracene, benzo(ghi)perylene, fluoranthene, fluorine, naphthalene, phenanthrene, and pyrene. Typically, exposure would be to a mixture of PAHs rather than to an individual PAH.

To prevent further PAH contamination of Island End River sediments, EPA established effluent limits for each priority pollutant PAH of 0.0311 µg/L and 0.0311 µg/L for the sum of all 16 PAHs based upon the EPA human health criterion for contaminated fish consumption in ExxonMobil's 1991 NPDES permit. At the time, the practical quantitative limit (PQL) for PAHs ranged from 5 to10 µg/L; orders of magnitude greater than the effluent limit. Therefore, EPA set a compliance/non-compliance threshold based on the PQL of 10 µg/L for each of the 16 PAHs and 50 µg/L for the sum of any of the 16 PAH compounds detected. These effluent limits and compliance thresholds were continued in ExxonMobil's NPDES permit when it was reissued in 2000.

The EPA's National Recommended Water Quality Criteria (WQC) were revised and reissued in 2004. The sixteen priority pollutants are identified individually in the current criteria, rather than as a group, as was done earlier. WQC to protect human health for the consumption of aquatic organisms have been lowered to 0.018 µg/L for each seven of the Group I PAHs. WQC for the Group II PAHs have been raised or eliminated.

Since 1991, analytical methods used to measure PAHs in water have improved. PQLs for EPA approved methods (identified in 40 C.F.R Part 136) now range from 0.05 to 5 µg/L for the 16 priority pollutant PAHs. Discharge monitoring report (DMR) data submitted by ExxonMobil during the past five years (See Attachment A) shows that while PAHs from outfall 001 were consistently below the compliance/non-compliance limit of 10 µg/L, they were often above the effluent limit of 0.0311 µg/L. During the last three sampling events of 2006, all sixteen priority pollutant PAHs were detected in effluent samples from Outfall 001.

Due to the potential to add to PAH contamination in Island End River sediments and to comply with the anti-backsliding requirements of the Clean Water Act (see Section 5.1.3), EPA has continued the water quality based effluent limits for the Group II PAHs in the draft permit. The effluent limits for Group I PAHs have been reduced to the current WQC for those compounds. Due to the availability of more sensitive analytical methods, EPA has also reduced the compliance/non-compliance thresholds to PQLs that are reflective of current analytical standards for EPA approved methods. The compliance/non-compliance thresholds in the draft permit are as follows.

Benzo(a)anthracene	<0.05 µg/L
Benzo(a)pyrene	<2.0 µg/L
Benzo(b)fluoranthene	<0.1 µg/L
Benzo(k)fluoranthene	<2.0 µg/L
Chrysene	<5.0 µg/L
Dibenzo(a,h)anthracene	<0.1 µg/L
Indeno(1,2,3-cd)pyrene	<0.15 µg/L
Acenaphthene	<0.5 µg/L
Acenaphthylene	<0.2 µg/L
Anthracene	<2.0 µg/L
benzo(ghi)perylene	<0.1 µg/L
Fluoranthene	<0.5 µg/L
Fluorine	<0.1 µg/L
Naphthalene	<0.2 µg/L
Phenanthrene	<0.05 µg/L
Pyrene	<0.05 µg/L

EPA believes that PAH effluent limits proposed in the draft permit ExxonMobil Everett Terminal will ensure that the discharges from the facility do not contribute to the further impairment of the Island End and Mystic Rivers or violations of water quality standards.

6.3.6 Volatile Organic Compounds

6.3.6.1 Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)

Refined petroleum products contain numerous types of hydrocarbons. Individual hydrocarbon constituents partition to environmental media on the basis of their physical/chemical properties (e.g., solubility, vapor pressure). Rather than attempt to establish effluent limits for every compound found in a petroleum release, limits are typically established for the compounds that would be the most difficult to remove as well as demonstrate the greatest degree of toxicity. Generally, the higher the solubility of a volatile organic compound (VOC) in water, the more difficult it is to remove.

VOCs such as benzene, toluene, ethylbenzene, and the three xylene compounds (BTEX) are normally found at relatively high concentrations in gasoline and light distillate products (e.g., diesel fuel). BTEX concentrations typically decrease in the heavier grades of petroleum distillate products (e.g., fuel oils). Since many petroleum spills involve gasoline or diesel fuel, a traditional approach for such spills has been to place limits on the individual BTEX components and/or the sum of total BTEX compounds.

Of these four compounds, benzene has one of the highest solubilities, it is one of the most toxic constituents, and it is found at relatively high concentrations in gasoline and diesel fuel. The concentration of benzene in gasoline is approximately 20,000 parts per million (Potter and Simmons, 1998). Because of the reasons mentioned above, benzene can be considered one of the most important limiting pollutant parameters found in gasoline or diesel fuel. Building on this premise, benzene can be used as an indicator-parameter for regulatory as well as characterization purposes of water which comes in contact with gasoline and diesel fuel. The primary advantage of using an indicator-parameter is that it can streamline monitoring efforts while simultaneously maintaining an effective level of environmental protection.

In 1991, EPA established a water quality based effluent limit of 40 µg/L benzene for discharges from the terminal based upon EPA recommended human health criterion for contaminated fish consumption at that time. The 1991 Permit also required monitoring of toluene, ethyl benzene, and xylenes. These BTEX requirements were also included in the Current Permit (2000). Since 1991, the human health criterion for contaminated fish consumption has been raised to 51 µg/L for benzene. However, in this draft permit, the technology-based limit for benzene is more stringent (see below) and therefore becomes the controlling limit.

The Everett Terminal treatment works is operating as a de facto groundwater treatment system, removing residual contaminants from the site subsurface. Ground water in contact with spilled petroleum product for an extended period of time has the potential to be contaminated with compounds found in that product. Groundwater sampling data submitted by the permittee indicated elevated levels of benzene as high as 0.3 to 2 mg/L in some wells.

Consistent with individual permit effluent limits for contaminated groundwater discharges and combined (contaminated groundwater and storm water) discharges at similar facilities in Massachusetts, EPA has, based on BPJ, established technology-based effluent limits for benzene and total BTEX at 5µg/l and 100µg/l, respectively. The technology limits are based on treatability using liquid phase carbon adsorption, a proven technology capable of removing benzene and other petroleum hydrocarbons from water to non-detectable levels.

As noted in Section 3.0 of this Fact Sheet, priority organics have been identified by Massachusetts as having contributed to the impairment of the Mystic River (including Island End River). EPA believes that limits proposed in the draft permit for BTEX compounds will ensure that the discharges from the facility do not contribute to the further impairment of the Island End and Mystic Rivers and do not contribute to violations of water quality standards.

In the future, should ExxonMobil remove the contaminated groundwater from the discharge or isolate it in such a way that it could be treated and discharged via an upstream internal outfall, a less stringent effluent limit for BTEX in storm water at Outfall 001, such as the 40 µg/L water quality based limit in the current permit, could be considered as this would constitute a substantial and material change to the circumstances on which the effluent limit is based, in accordance with the anti-backsliding requirements of 40 C.F.R. § 122.44 (l).

6.3.6.2 Methyl-Tertiary-Butyl-Ether (MTBE)

A potential contaminant of concern found in gasoline is methyl tertiary-butyl ether (MTBE). MTBE is a synthetic compound used as a blending component in gasoline. Since 1979 it has been used at low levels in gasoline to enhance octane levels and in some gasoline since 1992 to fulfill the oxygenate requirements established by the 1990 Clean Air Act Amendments. Due to its small molecular size and solubility in water, MTBE moves rapidly into the ground water, faster than do other constituents of gasoline. Because of these physical properties, MTBE has been detected in ground water in a growing number of studies conducted throughout the country. In some instances, these contaminated waters are a source of drinking water. As a result of its toxicity and its ability to rapidly migrate away from contaminant sources areas, EPA has for some time limited MTBE in discharges from remediation projects.

Since the terminal no longer stores or dispenses MTBE on site, EPA anticipates that storm water alone will not contain MTBE. However, since the facility's treatment works operates as a de facto groundwater treatment system, removing residual contaminants from the site subsurface, the discharge of MTBE through outfall 001 continues. Historic groundwater samples from monitoring wells on the property indicate elevated levels of MTBE in the groundwater. The August 2006 dry weather flow sample, taken

prior to treatment in the treatment works, indicated 381 µg/L of MTBE.

Monitoring reports from gasoline remediation sites in New England demonstrate that using best available technology (e.g. air stripping and/or carbon adsorption) a MTBE limit of 70 µg/L can be consistently met by a properly designed and maintained treatment system (EPA 2005). Therefore, EPA has established a technology-based effluent limit for MTBE of 70 µg/l for Outfall 001 in this Draft Permit. The facility is required to monitor and report MTBE concentrations on a monthly basis beginning on the effective date of the permit.

In the future, should ExxonMobil remove the contaminated groundwater from the discharge or isolate it in such a way that it could be treated and discharged via an upstream internal outfall, a less stringent effluent limit for MTBE in storm water at Outfall 001 could be considered as this would constitute a substantial and material change to the circumstances on which the effluent limit is based, in accordance with the anti-backsliding requirements of 40 C.F.R. § 122.44 (l).

6.3.6.3 Ethanol

Ethanol is a fuel additive increasingly blended with gasoline to replace MTBE as the gasoline oxygenate. Ethanol has replaced MTBE as an additive in Massachusetts at most gasoline distribution facilities and has been stored at the ExxonMobil Everett Terminal since early 2006.

Ethanol is a clear, colorless liquid, miscible with water and many organic solvents. When released from water, it will volatilize or biodegrade and is not expected of adsorb to sediment or bioconcentrate in fish. The use of ethanol as a fuel additive could lead to exposures from water that has been contaminated with ethanol from leaking storage facilities or accidental spills. The draft permit includes a requirement for monthly monitoring of ethanol.

6.3.6.4 Cyanide

Compounds containing the cyanide group (CN) are used and readily formed in many industrial processes and can be found in a variety of effluents, such as those from steel, petroleum, plastics, synthetic fibers, metal plating, and chemical industries. Cyanide occurs in water in many forms, including: hydrocyanic acid (HCN), the cyanide ion (CN^-), simple cyanides, metallocyanide complexes, and as organic compounds. "Free Cyanide" is defined as the sum of the cyanide present as HCN and CN^-. The relative concentrations of these forms depend mainly on pH and temperature. Currently, EPA approved analytical methods are available for "total" cyanide and "available" cyanide in water. "Total" cyanide includes all the forms of cyanide. "Available" cyanide includes free cyanide plus those cyanide forms that can readily disassociate to release free cyanide.

Both HCN and CN^- are toxic to aquatic life. However, the vast majority of free cyanide usually exists as the more toxic HCN. And, since CN^- readily converts to HCN at pH values that commonly exist in surface waters, EPA's cyanide criteria are stated in terms of free cyanide expressed as CN^-. Free cyanide is a more reliable index of toxicity to aquatic life than total cyanide because total cyanides can include nitriles (organic cyanides) and relatively stable metallocyanide complexes.

Historically, cyanide has not been a monitored parameter at ExxonMobil. However, the August 2006 dry weather flow sample, taken prior to treatment in the Treatment System, indicated 81 µg/l of total cyanide. This level is above EPA's National Water Quality Criteria guidance recommendations for available cyanide in salt water of 1 µg/l. However, it is unknown as to how much of the total cyanide was free or available.

EPA finds that there is not enough monitoring data to make a determination that there is reasonable

potential that the discharge from outfall 001 will cause or contribute to a violation of water quality standards for cyanide. EPA has included a requirement to monitor available cyanide levels in discharges from outfall 001 on a monthly basis and may modify the permit in the future if monitoring data indicates that such a reasonable potential exists.

6.3.7 Mercury

As far as EPA is aware, mercury has not been a monitored parameter at ExxonMobil. However, a relatively low concentration (0.31 µg/L) of mercury was detected in the dry weather flow sample collected at the facility in August 2006. The EPA chronic and acute water quality criteria for mercury in salt water are 0.94 µg/L and 1.8 µg/L, respectively. Since the Mystic River and Island End River are impaired for metals and due to mercury's potential to bio-accumulate in aquatic life, the draft permit includes a requirement to monitor mercury on a monthly basis.

EPA finds that there is not enough monitoring data to make a determination that there is reasonable potential that the discharge from outfall 001 will cause or contribute to a violation of water quality standards for mercury. EPA has included a requirement to monitor available mercury levels in discharges from outfall 001 on a monthly basis and may modify the permit in the future if monitoring data indicate that such a reasonable potential exists.

6.3.8 Whole Effluent Toxicity

Toxic pollutants in toxic amounts are prohibited by the Massachusetts Water Quality Standards which state, in part, that "all surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife". The NPDES regulations under 40 CFR § 122.44(d)(l)(v) require whole effluent toxicity (WET) limits in a permit when a discharge has a "reasonable potential" to cause or contribute to an excursion above the State's narrative criterion for toxicity.

The Current Permit for ExxonMobil includes an effluent limit for LC_{50} as measured by the WET test using Mysid Shrimp as the test organism. The LC_{50} is the concentration of effluent which causes mortality in 50% or fewer organisms. The effluent limit in the Current Permit requires that a sample comprised of 50% or more of effluent (the remainder being dilution water) cause mortality in 50% or fewer organisms. The results of semi-annual WET testing since 2000 have indicated that even without dilution, effluent samples caused mortality in 50% or fewer organisms (see Attachment A). The Draft Permit continues the WET limit and testing requirement on a semi-annual basis to meet the anti-backsliding requirements of the Clean Water Act.

6.4 Proposed Permit Conditions

6.4.1 Tank Bottom Wastewater

The bottom of many petroleum product storage tanks may contain a layer of water that has separated from the stored petroleum product due to the density difference between the product and water. As this water coalesces and then settles to the bottom of the tank, compounds including BTEX and PAHs found in the product above it are able to partition and dissolve into the water. The partitioning and dissolution allows the concentrations of some of the more soluble and denser petroleum components to reach toxic levels. Facility operators drain this layer of water to prevent transfer with the finished product as well as to free up valuable storage space.

Whereas storm water contacts only those hydrocarbons spilled on the ground and then only for short periods of time, tank bottom wastewater remains in intimate proximity with petroleum derivatives for prolonged periods of time, allowing toxic pollutants to dissolve into the aqueous phase. ExxonMobil has

not discharged any tank bottom wastewater through outfall 001 since the last permit was issued. Consistent with NPDES permits at other petroleum bulk storage facilities in the Boston Harbor area, the draft permit prohibits the discharge of tank bottom wastewater alone or in combination with storm water or other wastewater.

6.4.2 Maintenance Garage Floor Washings

Currently the floor drains in the maintenance garage discharge to the storm water collection system. While other non-storm water discharges at the Everett terminal are related to exterior uses of potable water or contain very low levels of contamination (such as steam condensate), the floor drains in the maintenance garage may contain spills and drips of petroleum products and other fluids used in vehicle maintenance and detergents used in floor washing. The draft permit prohibits the discharge of detergent laden floor washings to outfall 001 from inside the terminal's maintenance garage. EPA recommends that ExxonMobil apply to the Massachusetts Water Resources Authority (MWRA) for discharge of this process wastewater to the MWRA sewers. As an alternative, EPA would consider permitting the discharge of maintenance garage water in the future if it were collected, treated and discharged through an internal outfall prior to discharge into the storm water collection system.

6.4.3 Hydrostatic Test Water Discharges

Occasionally repairs are made at the facility to the tanks and the piping used for the storage and conveyance of petroleum products. To ensure safe working conditions during this maintenance work, storage tanks and/or pipe networks are rigorously cleaned (e.g., "Poly Brushed", "Squeegee Pigged") and certified as being "gas-free." After completing certain maintenance work, the vessels and/or pipe networks may require hydrostatic testing (e.g., to be filled with water and monitored for changes in water levels) before product replacement. ExxonMobil uses potable water as a source of test water and as a result there may be some residual chlorine present in the discharge. As a precaution, the hydrostatic test water shall be monitored and treated through the treatment works and monitored prior to being discharged to the Island End River. In addition, the flow of hydrostatic test water into the treatment works shall be controlled to prevent it from exceeding the maximum design flow rate of the separator.

6.4.4 Storm Water Pollution Prevention

This facility engages in activities which could result in the discharge of pollutants to waters of the United States either directly or indirectly through storm water runoff. These operations include at least one of the following in an area potentially exposed to precipitation or storm water: material storage, in-facility transfer, material processing, material handling, or loading and unloading. To control the activities/operations, which could contribute pollutants to waters of the United States, potentially violating the State's Water Quality Standards, the draft permit requires the facility to develop, implement, and maintain a Storm Water Pollution Prevention Plan (SWPPP) containing best management practices (BMPs) appropriate for this specific facility (See Sections 304(e) and 402(a)(1) of the CWA and 40 CFR §125.103(b)). Specifically, at this facility, gasoline and fuel oil storage tanks and loading dock are examples of material storage, processing and handling operations that shall continue to be included in the SWPPP.

The goal of the SWPPP is to reduce, or prevent, the discharge of pollutants through the storm water system. The SWPPP requirements in the draft permit are intended to provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to

affect the quality of storm water discharges associated with industrial activity from the facility. The SWPPP, upon implementation, becomes a supporting element to any numerical effluent limitations in the draft permit. Consequently, the SWPPP is as equally enforceable as the numerical limits.

This process involves the following four main steps:

(1) Forming a team of qualified facility personnel who will be responsible for developing and updating the SWPPP and assisting the plant manager in its implementation;

(2) Assessing the potential storm water pollution sources;

(3) Selecting and implementing appropriate management practices and controls for these potential pollution sources; and

(4) Reevaluating, periodically, the effectiveness of the SWPPP in preventing storm water contamination and in complying with the various terms and conditions of the Draft Permit.

ExxonMobil's current permit required the facility to develop a SWPPP (referred to as a Best Management Practices Plan in the current permit) with site-specific best management practices (BMPs). ExxonMobil has certified to EPA that a SWPPP (or BMP Plan) was developed and implemented for this facility in accordance with the requirements identified in the current permit. The draft permit continues to ensure that the SWPPP is kept current and adhered to, by requiring the permittee to maintain and update the SWPPP as changes occur at, or affect, the facility, including changes made as a result of new permit requirements.

7.0 ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the list of federal endangered or threatened species of fish, wildlife, or plants to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. The review has focused primarily on marine species and anadromous fish since the discharge is to the Island End River (Mystic River Watershed) which ultimately flows into Boston Harbor. There are no listed marine species or critical habitat present in this area. Furthermore, effluent limitations and other permit conditions which are in place in this Draft Permit should preclude any adverse effects should there be any incidental contact with listed species either in Island End/Mystic River or Boston Harbor. A copy of the draft permit has been provided to NMFS for review and comment as part of an informal Section 7 consultation.

8.0 ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may

adversely impact any essential fish habitat" (EFH). The Amendments define EFH as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," (16 U.S.C. § 1802 (10)). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b) (1) (A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

A review of the relevant essential fish habitat information provided by NMFS indicates that essential fish habitat has been designated for 15 managed species within the NMFS boundaries encompassing the outfall location. A copy of the managed species within the EFH is included in Attachment B to this Fact Sheet. EPA has concluded that the permitted discharge will not likely adversely impact the EFH and the managed species identified for this general location. This conclusion is based on the amount and frequency of the discharge, as well as effluent limitations and other permit requirements that are identified in this Fact Sheet. These factors are designed to be protective of all aquatic species, including those with EFH designations.

EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely impact the EFH. If adverse impacts are detected as a result of this permit action, NFMS will be notified and an EFH consultation will promptly be initiated.

9.0 STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the MassDEP either certifies that the effluent limitations contained in this permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards or waives its right to such certification. EPA has requested that MassDEP certify the permit. Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located which determines that all water quality standards, in accordance with Section 301(b)(1)(C) of the CWA, will be satisfied. Regulations governing state certification are set forth in 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d). EPA expects that the permit will be certified.

10.0 PUBLIC COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to: Ms. Ellen Weitzler, NPDES Industrial Permit Branch, U.S. Environmental Protection Agency, One Congress Street, Suite 1100 (Mail Code: CIP), Boston, Massachusetts 02114-2023. A public hearing will be held after at least thirty (30) days public notice. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA-New England's Boston office.

Following the close of the comment period, and after the public hearing, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted

written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

11.0 EPA & MASSDEP CONTACTS

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

Ellen Weitzler, EPA New England - Region I
1 Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023
Telephone: (617) 918-1582 FAX: (617) 918-1505
email: weitzler.ellen@epa.gov

or

Paul Hogan, Massachusetts Department of Environmental Protection
Division of Watershed Management, Surface Water Discharge Permit Program
627 Main Street, 2nd Floor Worcester, Massachusetts 01608
Telephone: (508) 767-2796 FAX: (508) 791-4131
email: paul.hogan@state.ma.us

_____ _____

Date

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

REFERENCES

Agency for Toxics Substances and Disease Registry (ATSDR), 1995, *Toxicological Profile for Polycyclic Aromatic Hydrocarbons* (PB/95/264370), August 1995.

Breault, Robert F., Durant, John L., and Robbat, Albert Jr., *Sediment Quality of Lakes, Rivers, and Estuaries in the Mystic River Basin, Eastern Massachusetts, 2001-2003,* U.S. Department of the Interior and U.S, Geological Survey, Scientific Investigations Report 2005-5191, 2005.

ES&T. 2002. *MTBE Ambient Water Quality Criteria Development: A Public/*

Private Partnership. Mancini, E.R., et al., Environmental Science & Technology, Vol. 36, No. 2. 2002.

ExxonMobil, July 24, 2006, *Table 1 Groundwater Elevations and LNAPL thickness*, pages 1 – 10.

Fluor Daniel GTI, Inc., November 12, 1996, *Massachusetts Contingency Plan, Phase II Report*, page ii.

MassDEP. 2002. *Boston Harbor 1999 Water Quality Assessment Report.* Massachusetts Department of Environmental Protection, Division of Watershed Management, Worcester, MA. October 2002 (70-AC-1)

MassDEP. 2006. *Massachusetts Year 2004 Integrated List of Waters, Part 2 - Final Listing of Individual Categories of Waters.* Commonwealth of Massachusetts Executive Office of Environmental Affairs, September, 2003 (CN:176.0)

Potter, Thomas L. and Kathleen E. Simmons, 1998. *Composition of Petroleum Mixtures, Volume 2.* Total Petroleum Hydrocarbon Criteria Working Group Series, May 1998.

Roberson, Stephen J., 2006, *MassDEP Internal Briefing Memorandum to Edward Kunce, Arleen O'Donnell, Philip Griffiths, Janine Commerford, and Edmund Coletta, regarding EVERETT – Former Coal Tar Processing Facility, Release Tracking No. 3-0309, Island End River Cleanup*, March 23, 2006

USEPA. 1982. *Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category.* United States Environmental Protection Agency, Office of Water and Waste Management, Washington, D.C. EPA-440/1-82/029, November 1982.

USEPA. 2005. *Fact Sheet, Proposed Remediation General Permit Under the National Pollutant Discharge Elimination System (NPDES) for Discharges in Massachusetts and New Hampshire, 2005.*

USEPA. 2004. *National Recommended Water Quality Criteria.* United States Environmental Protection Agency, Office of Water, Washington, D.C.(4304T).

Weisman, Wade, 1998. *Analysis of Hydrocarbons in Environmental Media, Volume 1.* Total Petroleum Hydrocarbon Criteria Working Group Series, March 1998.

USGS MAP BOSTON NORTH, MASSACHUSETTS

0 1000 2000 3000 METERS

0 2000 4000 6000 8000 10 000 12 000 FEET

AREA TOPOGRAPHIC MAP EXXONMOBIL TERMINAL EVERETT, MASSACHUSETTS	FIGURE 1

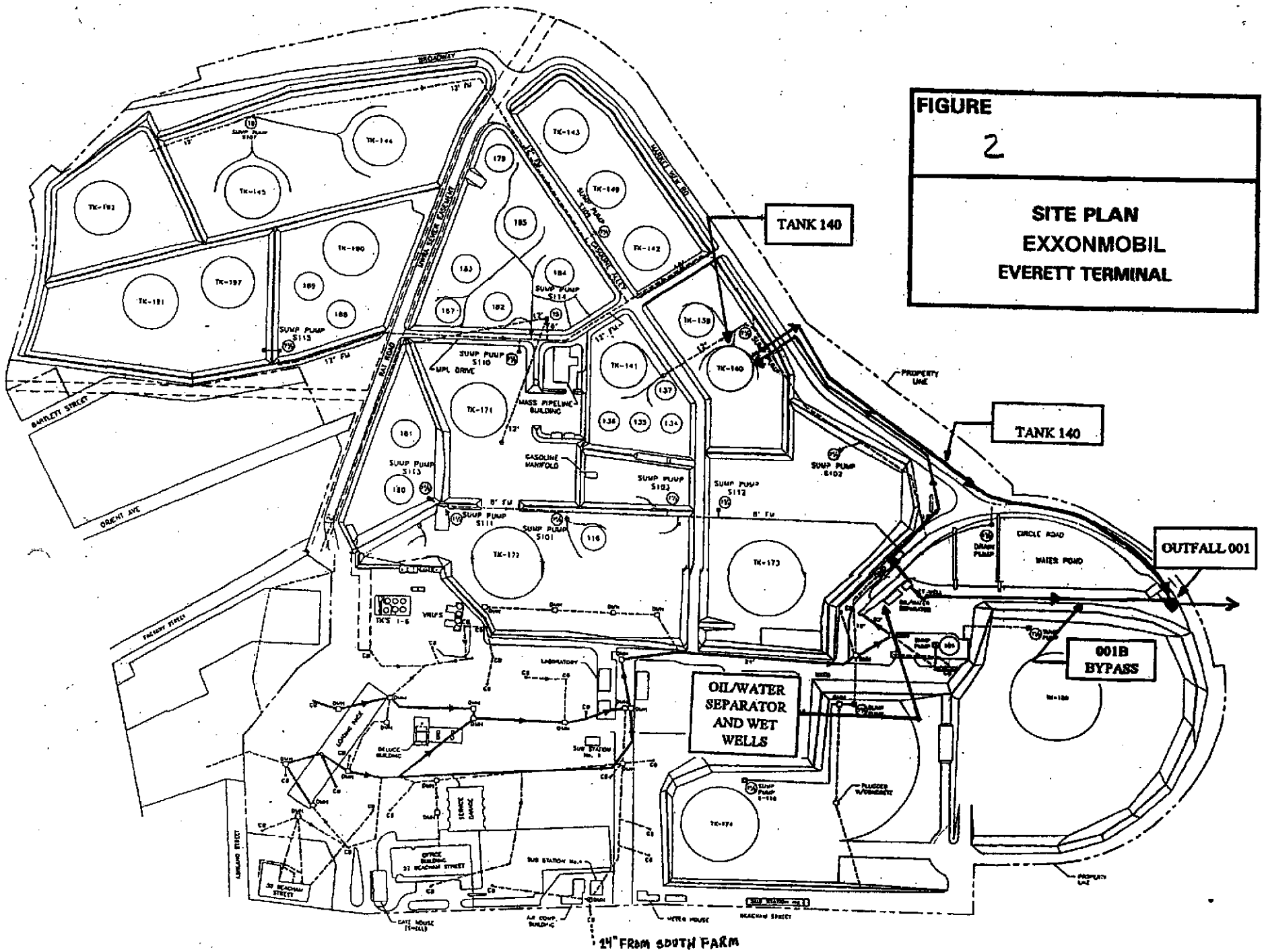
FIGURE
2
SITE PLAN
EXXONMOBIL
EVERETT TERMINAL
TANK 140
TANK 140
OUTFALL 001
001B
BYPASS
OIL/WATER
SEPARATOR
AND WET
WELLS
14" FROM SOUTH FARM

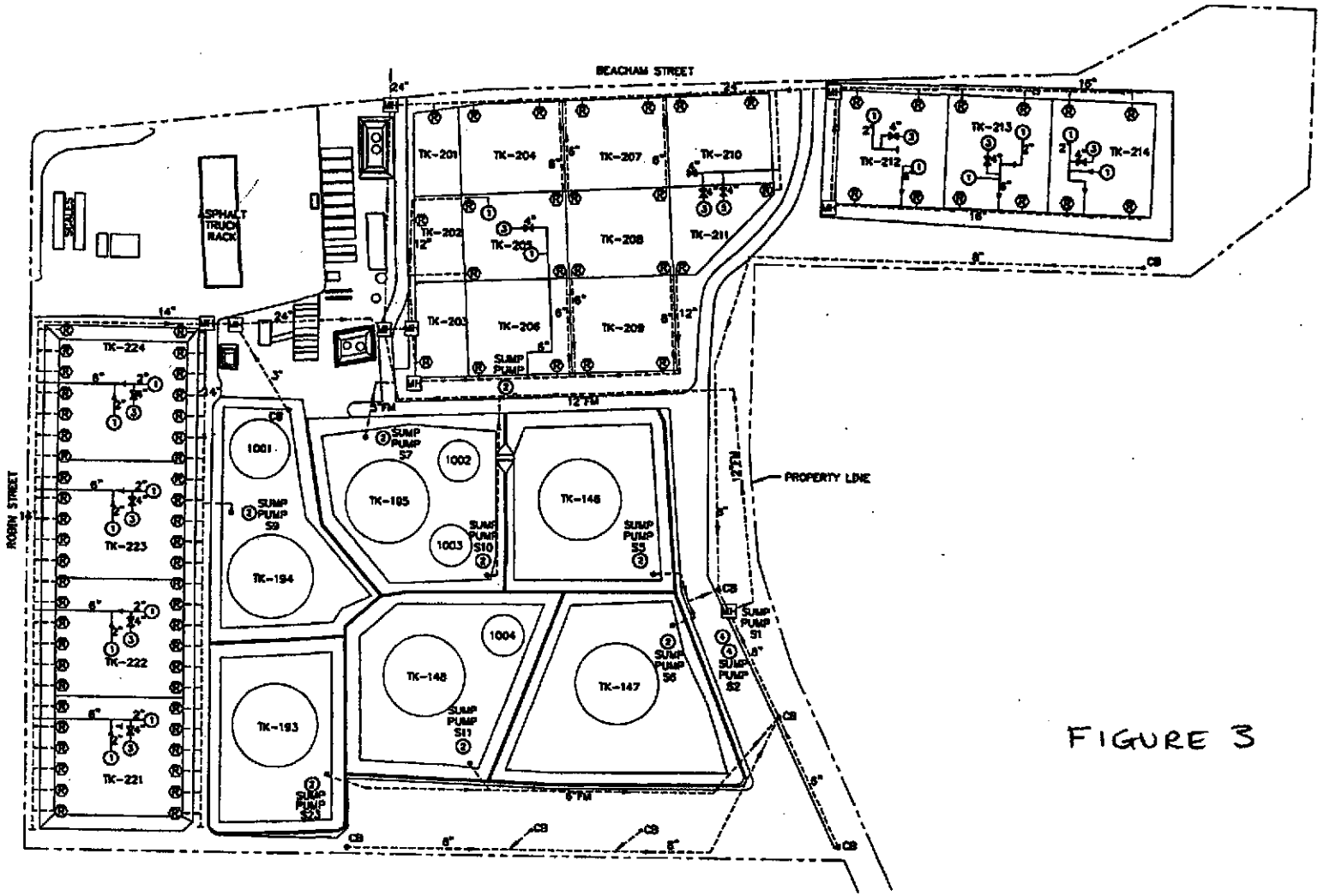

FIGURE 3

LEGEND

- UNDERGROUND
- ABOVE GROUN
- ① INTANK SUMP
- ② 7.5 HP SUMP
- ③ BS&W PUMP
- ④ 15 HP SUMP P
- ④ MAIN PUMP
- MH DRAIN MANHO
- CB CATCH BASIN
- FM FORCED MAIN
- ⊗ 8" SCUPPER O

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