

**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

In the Matter of Remedial Action by:

CHEVRON TANK FARM PORT
WASHINGTON NARROWS

AGREED ORDER

No. DE-12TCPHQ-9509

TO: The City of Bremerton
Public Works Department
3027 Olympus Drive
Bremerton, Washington 98310

TABLE OF CONTENTS

I.	INTRODUCTION	4
II.	JURISDICTION	4
III.	PARTIES BOUND	5
IV.	DEFINITIONS.....	5
V.	FINDINGS OF FACT.....	5
VI.	ECOLOGY DETERMINATIONS	9
VII.	WORK TO BE PERFORMED	10
VIII.	TERMS AND CONDITIONS OF ORDER	11
A.	Public Notice.....	11
B.	Remedial Action Costs	11
C.	Implementation of Remedial Action.....	12
D.	Designated Project Coordinators	12
E.	Performance	13
F.	Access	14
G.	Sampling, Data Submittal, and Availability	14
H.	Public Participation.....	15
I.	Retention of Records.....	16

J.	Resolution of Disputes.....	17
K.	Extension of Schedule.....	17
L.	Amendment of Order	19
M.	Endangerment	19
N.	Reservation of Rights.....	20
O.	Transfer of Interest in Property	21
P.	Compliance with Applicable Laws	21
Q.	Land Use Restrictions	22
R.	Periodic Review	22
S.	Indemnification	23
IX.	SATISFACTION OF ORDER	23
X.	ENFORCEMENT	23
EXHIBIT-A	Site Diagram	
EXHIBIT-B	Scope of Work, Work Plan & Schedule	
EXHIBIT-C	Applicable, Relevant and Appropriate Requirements	
EXHIBIT-D	Policy 840 (Data Submittal Requirements)	
ATTACHMENT-1	January 2012 Draft Cleanup Action Plan	
ATTACHMENT-2	January 2012 Technical Memorandum Former Chevron Property Performance Groundwater Monitoring Results	
ATTACHMENT-3	September 2011 Remedial Investigation and Feasibility Study Report	
ATTACHMENT-4	August 2007 Site Investigation Report Evergreen Park/Formal Chevron Bulk Fuel Plant Bremerton, Washington	
ATTACHMENT-5	February 2006 Technical Memorandum: Chevron Property Sediment Characterization Study	
ATTACHMENT-6	June 2005, Due Diligence Investigation	
ATTACHMENT-7	Groundwater Monitoring Results (1988 through 2003)	
ATTACHMENT-8	March 1994, Supplemental Soil Investigation Results	

ATTACHMENT-9 November 1991, Soil Vapor Extraction System Results

ATTACHMENT-10 July 1991, Site Hazard Assessment Results

ATTACHMENT-11 March 1989, Soil investigation Results including some Product Recovery

ATTACHMENT-12 November 1988, Soil and Groundwater Investigation Results

I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and the City of Bremerton (the City) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the City to complete a final cleanup action plan for the site and to prepare, and submit to Ecology for review and approval, a draft and a final long-term groundwater monitoring plan for the site and a detailed outline of a future soil monitoring plan for the site. The two plans may be parts of a single site monitoring plan. The soil monitoring plan shall be used to demonstrate that soil remediation is complete and that soil use restrictions may be removed. The long-term groundwater monitoring plan and the soil monitoring plan will include a field sampling plan, a quality assurance plan, and a health and safety plan. The City shall prepare, and submit to Ecology for review and approval, a draft and a final institutional controls plan for the site. The institutional controls plan shall state what institutional controls or procedures the City has already established, what institutional controls or procedures the City will establish, and a specific timetable for their establishment. The institutional controls plan shall identify what entity will implement, maintain, and enforce each institutional control and how the protectiveness of each institutional control will be measured. As part of the institutional controls plan, the City shall prepare, and submit to Ecology for review and approval, a draft and a final environmental covenant to be attached to the property deed for the site. The City shall carry out and execute all plans approved by Ecology.

Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

This Agreed Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1).

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such party to comply with this Order. The City agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter the City's responsibility under this Order. The City shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in Chapter 70.105D RCW and Chapter 173-340 WAC shall control the meanings of the terms in this Order.

A. Site: The Site is referred to as Chevron Tank Farm Port Washington Narrows and is generally located at 1310 Highland Avenue in Bremerton, Washington 98310. The Site is defined by the extent of contamination caused by the release of hazardous substances at the Site. The Site is more particularly described in the Site diagram (Exhibit A). The Site constitutes a Facility under RCW 70.105D.020(5).

B. Parties: Refers to the State of Washington, Department of Ecology and the City of Bremerton.

C. Potentially Liable Person (PLP): Refers to the City of Bremerton.

D. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order. The terms "Agreed Order" or "Order" shall include all exhibits to this Order.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by the City:

A. The Chevron Tank Farm Port Washington Narrows site (the "Site") is located at 1310 Highland Avenue, Bremerton, Washington (the "Property") and consists of approximately 1.5-acres. The Property is bounded on the northeast by the Port Washington Narrows, on the northwest by a small inlet (Smith Cove), on the southeast by a residential area and on the southwest by a mixed residential and business area. (Exhibit-A). From approximately 1950 until 1988, Chevron operated a bulk storage and distribution center for petroleum products on the property, including a fuel distribution dock.

B. Currently the City of Bremerton owns the Property and it is a vacant piece of land. (Exhibit-A)

C. Three rounds of groundwater sampling were collected in 2010 and two rounds in 2011 as well as one round of groundwater sampling during the 2008 remedial investigation. All of these groundwater samples were analyzed for total petroleum hydrocarbons-gasoline (TPH-G), TPH-diesel (TPH-D), TPH-Oil (TPH-O), benzene, ethylbenzene, toluene, and xylenes (BETX), with selected samples being analyzed for total and dissolved lead, total and dissolved iron, and dissolved manganese. Results of the latest round of groundwater sampling (September 2011) showed elevated concentrations of TPH-G (2,100 µg/l), TPH-D (1,300 µg/l), and benzene (310 µg/l). TPH – Oil was not detectable in any of the samples. These concentrations exceed MTCA Method-A cleanup levels of 800 µg/l (TPH-G), 500 µg/l (TPH-D and TPH-O), and 5 µg/l (benzene).

In March of 2008, Parametrix conducted an interim action at the site. The interim action consisted of excavation of soil "hot spots" and in-situ chemical treatment of contaminated soil. Confirmational soil samples were collected six months following the in-situ soil treatment to determine the efficacy of the treatment. Twelve soil samples were collected from the treatment area and analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, xylenes, and polycyclic aromatic hydrocarbons. Exceedances for gasoline (1,000 mg/kg), benzene (5.4 mg/kg), ethylbenzene (20 mg/kg), total xylenes (94 mg/kg) and polycyclic aromatic hydrocarbons (2.7 mg/kg – toxicity equivalent method) were found. Ten new groundwater

monitoring wells were installed. Eleven groundwater samples collected from nine new wells and two existing wells. Exceedances of gasoline (2,100 µg/l, diesel (1,300 µg/l), and benzene (310 µg/l) were found.

D. In March of 2008, Parametrix conducted a remedial investigation and feasibility study at the site. Groundwater and soil samples were collected from four surface stations, nineteen push probes, and two new and ten existing groundwater monitoring wells. Bench and pilot studies of in-situ chemical treatment of the contaminated soil were also conducted. Following the bench and pilot studies, an interim action – consisting of excavation of contaminated soil “hotspots” and chemical treatment of the contaminated soil was carried out.

E. In February of 2006, Parametrix conducted a sediment characterization study. Sediment samples were collected from nineteen subtidal and intertidal locations. One location failed State of Washington sediment management standards for chemistry but successfully passed a followup bioassay test. In 2007, Ecology requested Hart-Crowser to conduct a similar sediment characterization study of thirteen sediment locations. All sediment samples successfully passed both chemical and bioassay tests.

F. In June 2005, Parametrix conducted a Due Diligence Investigation for the City of Bremerton to evaluate the then-current conditions at the Site. The evaluation included a comprehensive summary of site investigation, previous remediation efforts, data gaps, additional investigations, a number of potential remedial alternatives and recommendations for the property’s acquisition. (Attachment-6)

G. Eighteen groundwater monitoring wells were placed on the site; sixteen remain. From October 1988 to October 2003, a total of thirty-one rounds of quarterly, semiannual and/or annual groundwater sampling have been conducted at the site. All of these groundwater samples were analyzed for total petroleum hydrocarbons-gasoline (TPH-G), TPH-diesel (TPH-D), TPH-Oil (TPH-O), benzene, ethylbenzene, toluene, xylenes (BETX) and dissolved lead. Results of the latest round of groundwater sampling (October 2003) showed elevated concentrations of TPH-G (9,000 µg/l), TPH-D (32,000 µg/l), TPH-O (5,200 µg/l) and benzene (700 µg/l). These

concentrations exceed MTCA Method-A cleanup levels of 800 µg/l (TPH-G), 500 µg/l (TPH-D and TPH-O) and 5 µg/l (benzene). (Attachment-7).

H. In March 1994, Chevron Company conducted a Supplemental Site Assessment. As a part of this investigation, nine soil borings were drilled and six borings were converted into groundwater monitoring wells. A total of thirteen soil samples were selected and sent to an off-site laboratory for TPH-G, TPH-D, TPH-O, polycyclic aromatic hydrocarbon (PAHs) and total lead analysis. Some of the soil samples showed elevated concentrations of TPH-G (1,300 mg/kg), TPH-D (11,000 mg/kg) and PAH range of 1.2 mg/kg to 24 mg/kg. These concentrations exceed MTCA Method-A cleanup levels of 100 mg/kg, 2,000 mg/kg and 0.1 mg/kg (prorated to benzo(a)pyrene with toxicity equivalent factors). (Attachment-8).

I. In November of 1991, Hart Crowser (Chevron's consultant) installed a soil vapor extraction (SVE) system to remove the volatile organic compounds (VOCs) from the soils. The system included eleven dedicated extraction wells and five groundwater monitoring wells. The SVE system was operated from November 1991 through December 1994. Because of the low VOC recovery the system was turned off in December 1994. During this period a total of approximately 195,000 pounds of VOCs were extracted and the thickness of product was reduced in some of the groundwater monitoring wells. (Attachment-9).

J. In July 1991, Ecology conducted a site hazard assessment investigation. As a part of this investigation groundwater, sediment and shellfish samples were collected. These samples were analyzed for TPH-G, TPH-D, BTEX, semi-volatile organic compounds (SVOCs) and total lead. Groundwater results showed: total TPH (5,660 µg/l), benzene (2,420 µg/l), toluene (4,390 µg/l) and nitrobenzene (152 µg/l). Results of sediment samples (all compounds) were below their practical quantitation limits (PQL). Since PQLs were higher than the Sediment Management Standards, it does not preclude the presence of these compounds in the sediments exceeding the marine Sediment Management Standards. In addition, total TPH (100 mg/kg – 412 mg/kg), xylene (78 µg/kg – 103 µg/kg) and lead (11.3 mg/kg – 53.3 mg/kg) were also detected in sediment samples. (Attachment-10).

K. In May 1989, Chevron conducted soil investigation and Phase-I remediation (some product removal). Nine test pits were excavated and a total of eighteen (18) soil samples were collected for TPH-G, TPH-D and total hydrocarbon identification (HCID) analysis. Elevated levels of TPH-G (25,000 mg/kg) and TPH-D (5,800 mg/kg) were detected in soil samples. In addition, measurement of free phase hydrocarbon thickness revealed the presence of approximately 3 to 4 feet of free product at certain locations on the site. A total of 47 gallons of free product was removed during a period of one year. (Attachment-11).

L. In November 1988, Chevron conducted a soil and groundwater investigation. As a part of this investigation, twelve (12) exploratory borings and seven (7) test pits were installed and a total of seventeen (17) soil samples were collected for TPH-G, TPH-D and BTEX analysis. Elevated levels of TPH-G (4,300 mg/kg), TPH-D (17,000 mg/kg), benzene (3.4 mg/kg), toluene (15 mg/kg), ethylbenzene (3.1 mg/kg) and xylenes (12.4 mg/kg) were detected exceeding their MTCA Method-A cleanup levels of respectively, 30 mg/kg, 2,000 mg/kg, 0.03 mg/kg, 7 mg/kg, 6 mg/kg and 9 mg/kg. (Attachment-12).

Nine of the above-mentioned twelve borings were converted into groundwater monitoring wells and groundwater samples were collected for total petroleum hydrocarbon (TPH) and BTEX analysis. TPH, BTEX concentrations of 1,742 µg/l, 6,100 µg/l, 19,000 µg/l, 2,900 µg/l and 23,000 µg/l were detected respectively. These concentrations exceed MTCA Method-A cleanup levels of 800 µg/l (TPH), 5 µg/l (benzene), 1,000 µg/l (toluene and xylenes) and 700 µg/l (ethylbenzene) (Attachment-12).

VI. ECOLOGY DETERMINATIONS

A. The City is an "owner or operator" as defined in RCW 70.105D.020(17), of a "facility" as defined in RCW 70.105D.020(5) because it is the current owner of the Site.

B. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(25) and RCW 70.105D.020(10), respectively, has occurred at the Site.

C. Based upon credible evidence, Ecology issued a PLP status letter to the City dated October 25, 2006, pursuant to RCW 70.105D.040, -.020(21) and WAC 173-340-500. By letter dated October 27, 2006, the City voluntarily waived its rights to notice and comment and accepted Ecology's determination that the City is a PLP under RCW 70.105D.040.

D. Pursuant to RCW 70.105D.030(1) and -.050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that the City take the following remedial actions at the Site and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein:

A. The City shall conduct the remedial actions fully described in Exhibit B to this Agreed Order. Generally, the City shall develop a draft final cleanup action plan (dFCAP) for the Site and, the City shall develop a draft and draft final long-term groundwater monitoring plan, a draft and draft final soil monitoring plan, a draft and draft final sampling health and safety plan, a draft and a draft final institutional controls plan, and a draft and draft final environmental covenant to be placed on the property deed. As part of the dFCAP, the City shall carry out the following tasks:

- Installing one or more new groundwater monitoring wells;
- Collecting groundwater and soil samples to define the full nature and extent of remediation;

B. The City shall perform actions required by this Order according to the schedule included in Exhibit B.

C. Upon the approval of the draft cleanup action report, the City shall prepare a draft final CAP in accordance with WAC 173-340-380 that provides a proposed remedial action to

address the contamination at the site. In addition to a general description of the proposed remedial action, the dFCAP shall describe the results of contaminated soils excavation, the chemical oxidation pilot scale study, the application of enhanced bioremediation technologies, and studies of natural attenuation of residual groundwater contamination. The dFCAP shall also include: cleanup levels from the RI/FS together with the rationale for their selection; a schedule for implementation; description of any institutional controls proposed; and summary of applicable local, state and federal laws pertinent to the proposed cleanup action. It shall also contain a draft environmental covenant for the site.

D. If, at any time after the first exchange of comments on drafts, Ecology determines that insufficient progress is being made in the preparation of any of the deliverables required by Exhibit B, Ecology may complete and issue the final deliverable.

VIII. TERMS AND CONDITIONS OF ORDER

A. Public Notice

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that this Order is inadequate or improper in any respect.

B. Remedial Action Costs

The City shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under Chapter 70.105D RCW, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work performed both prior (retroactive to October 1, 2006) to and subsequent to the issuance of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Ecology has accumulated \$92,832.51 in remedial action costs related to this facility as of December 31, 2011. The City has paid this amount

following submittal of itemized statements by Ecology to the City. For all costs subsequent to December 31, 2011, the City shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70.105D.055, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs..

C. Implementation of Remedial Action

If Ecology determines that the City has failed without good cause to implement the remedial action, in whole or in part, Ecology may, after notice to the City, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of the remedial action because of the City's failure to comply with its obligations under this Order, the City shall reimburse Ecology for the costs of doing such work in accordance with Section VIII.B (Remedial Action Costs), provided that the City is not obligated under this Section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Order.

Except where necessary to abate an emergency situation, the City shall not perform any remedial actions at the Site outside those remedial actions required by this Order, unless Ecology concurs, in writing, with such additional remedial actions.

D. Designated Project Coordinators

The project coordinator for Ecology is:

Christopher Maurer
Toxics Cleanup Program
PO Box 47600, Olympia, WA 98504-7600
(360) 407-7223

E-mail: cm461@ecy.wa.gov

The project coordinator for the City is:

Thomas Knuckey
3027 Olympus Drive
Bremerton, Washington 98310
(360) 473-2376
E-Mail: thomas.knuckey@ci.bremerton.wa.us

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and the City, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

E. Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist licensed in the State of Washington or under the direct supervision of an engineer registered in the State of Washington, except as otherwise provided for by Chapters 18.220 and 18.43 RCW.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered in the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered in the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrologic or engineering work shall be under the seal of an appropriately licensed professional as required by Chapter 18.220 RCW or RCW 18.43.130.

The City shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

F. Access

Ecology or any Ecology authorized representative shall have the full authority to enter and freely move about all property at the Site that the City either owns, controls, or has access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the City's progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the City. The City shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by the City where remedial activities or investigations will be performed pursuant to this Order. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by the City unless an emergency prevents such notice. All persons who access the Site pursuant to this Section shall comply with any applicable Health and Safety Plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

G. Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, the City shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any

subsequent procedures specified by Ecology for data submittal. Attached as Exhibit D is Ecology Policy 840, Data Submittal Requirements.

If requested by Ecology, the City shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by the City pursuant to implementation of this Order. The City shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow the City and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section VIII.F (Access), Ecology shall notify the City prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under Chapter 173-50 WAC for the specific analyses to be conducted, unless otherwise approved by Ecology.

H. Public Participation

A Public Participation Plan is required for this Site. Ecology shall review any existing Public Participation Plan to determine its continued appropriateness and whether it requires amendment, or if no plan exists, Ecology shall develop a Public Participation Plan alone or in conjunction with the City.

Ecology shall maintain the responsibility for public participation at the Site. However, the City shall cooperate with Ecology, and shall:

1. If agreed to by Ecology, develop appropriate mailing list, prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

2. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify the City prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by the City that do not receive prior Ecology approval, the City shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

3. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.

4. When requested by Ecology, arrange and/or continue information repositories to be located at the following locations:

- a. Bremerton Public Library
612 5th Street North
Bremerton, Washington 98337
- b. Washington Department of Ecology
Headquarters Office
300 Desmond Drive
Lacey, WA 98503

At a minimum, copies of all public notices, fact sheets, and documents relating to public comment periods shall be promptly placed in these repositories. A copy of all documents related to this site shall be maintained in the repository at Ecology's Headquarters Office in Lacey, Washington.

I. Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of work performed pursuant to this Order, the City shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors. Upon request of Ecology, the City shall make all records available to Ecology and allow access for review within a reasonable time.

J. Resolution of Disputes

1. In the event a dispute arises as to an approval, disapproval, proposed change, or other decision or action by Ecology's project coordinator, or an itemized billing statement under Section VIII.B (Remedial Action Costs), the Parties shall utilize the dispute resolution procedure set forth below.

a. Upon receipt of Ecology's project coordinator's written decision or the itemized billing statement, the City has fourteen (14) days within which to notify Ecology's project coordinator in writing of its objection to the decision or itemized statement.

b. The Parties' project coordinators shall then confer in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) days, Ecology's project coordinator shall issue a written decision.

c. The City may then request regional management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Land & Aquatic Lands Cleanup Section Manager within seven (7) days of receipt of Ecology's project coordinator's written decision.

d. The Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute within thirty (30) days of the City's request for review. The Section Manager's decision shall be Ecology's final decision on the disputed matter.

2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

K. Extension of Schedule

1. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the

deadline for which the extension is requested, and good cause exists for granting the extension.

All extensions shall be requested in writing. The request shall specify:

- a. The deadline that is sought to be extended;
- b. The length of the extension sought;
- c. The reason(s) for the extension; and
- d. Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on the City to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

- a. Circumstances beyond the reasonable control and despite the due diligence of the City including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by the City;
- b. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or
- c. Endangerment as described in Section VIII.M (Endangerment).

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of the City.

3. Ecology shall act upon any written request for extension in a timely fashion. Ecology shall give the City written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.L (Amendment of Order) when a schedule extension is granted.

4. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of:

- a. Delays in the issuance of a necessary permit which was applied for in a timely manner;
- b. Other circumstances deemed exceptional or extraordinary by Ecology; or
- c. Endangerment as described in Section VIII.M (Endangerment).

L. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section VIII.N (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and the City. The City shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request for amendment is received. If the amendment to this Order represents a substantial change, Ecology will provide public notice and opportunity to comment. Reasons for the disapproval of a proposed amendment to this Order shall be stated in writing. If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.J (Resolution of Disputes).

M. Endangerment

In the event Ecology determines that any activity being performed at the Site is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct the City to cease such activities for such period of time as it deems necessary to abate the danger. The City shall immediately comply with such direction.

In the event the City determines that any activity being performed at the Site is creating or has the potential to create a danger to human health or the environment, the City may cease such activities. The City shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction the City shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with the City's cessation of activities, it may direct the City to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to Section VIII.M (Endangerment), the City's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section VIII.K (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances. Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

N. Reservation of Rights

This Order is not a settlement under Chapter 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against the City to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against the City regarding remedial actions required by this Order, provided the City complies with this Order.

Ecology nevertheless reserves its rights under Chapter 70.105D RCW, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss

of natural resources resulting from the release or threatened release of hazardous substances at the Site.

O. Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by the City without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to the City's transfer of any interest in all or any portion of the Site, and during the effective period of this Order, the City shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, the City shall notify Ecology of said transfer. Upon transfer of any interest, the City shall restrict uses and activities to those consistent with this Order and notify all transferees of the restrictions on the use of the property.

P. Compliance with Applicable Laws

1. All actions carried out by the City pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70.105D.090. The permits or specific federal, state or local requirements that the agency has determined are applicable and that are known at the time of entry of this Order have been identified in Exhibit C.

2. Pursuant to RCW 70.105D.090(1), the City is exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals. However, the City shall comply with the substantive requirements of such permits or approvals. The exempt permits or approvals and the applicable substantive requirements of those permits or approvals, as they are known at the time of entry of this Order, have been identified in Exhibit C.

The City has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial

action under this Order. In the event either Ecology or the City determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or the City shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the City shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by the City and on how the City must meet those requirements. Ecology shall inform the City in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The City shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

3. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the State to administer any federal law, the exemption shall not apply and the City shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

Q. Land Use Restrictions

The City shall record a restrictive covenant with the offices of the ^{Kitsap} ~~Island~~ County Auditor within ten (10) days of the completion of the remedial action. The Restrictive Covenant shall restrict future uses of the site. The City shall provide Ecology with a copy of the recorded Restrictive Covenant within thirty (30) days of the recording date.

R. Periodic Review

As remedial action, including groundwater monitoring, continues at the Site, the parties agree to review the progress of remedial action at the Site, and to review the data accumulated as

a result of monitoring the Site as often as is necessary and appropriate under the circumstances. At least every five (5) years after initiation of cleanup action at the Site the Parties shall meet to discuss the status of the Site and the need, if any, for further remedial action at the Site. At least ninety (90) days prior to each periodic review, the City shall submit a report to Ecology that documents whether human health and the environment are being protected based on the factors set forth in WAC 173-340-420(4). Ecology reserves the right to require further remedial action at the Site under appropriate circumstances. This provision shall remain in effect for the duration of this Order.

S. Indemnification

The City agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property to the extent arising from or on account of acts or omissions of the City, its officers, employees, agents, or contractors in entering into and implementing this Order. However, the City shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

IX. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon the City's receipt of written notification from Ecology that the City has completed the remedial activity required by this Order, as amended by any modifications, and that the City has complied with all other provisions of this Agreed Order.

X. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

C. In the event the City refuses, without sufficient cause, to comply with any term of this Order, the City will be liable for:

a. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply; and

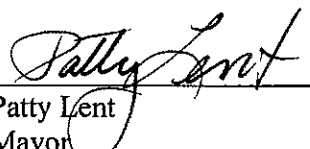
b. Civil penalties of up to twenty-five thousand dollars (\$25,000) per day for each day it refuses to comply.

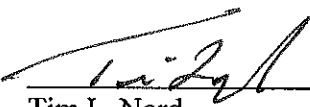
D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

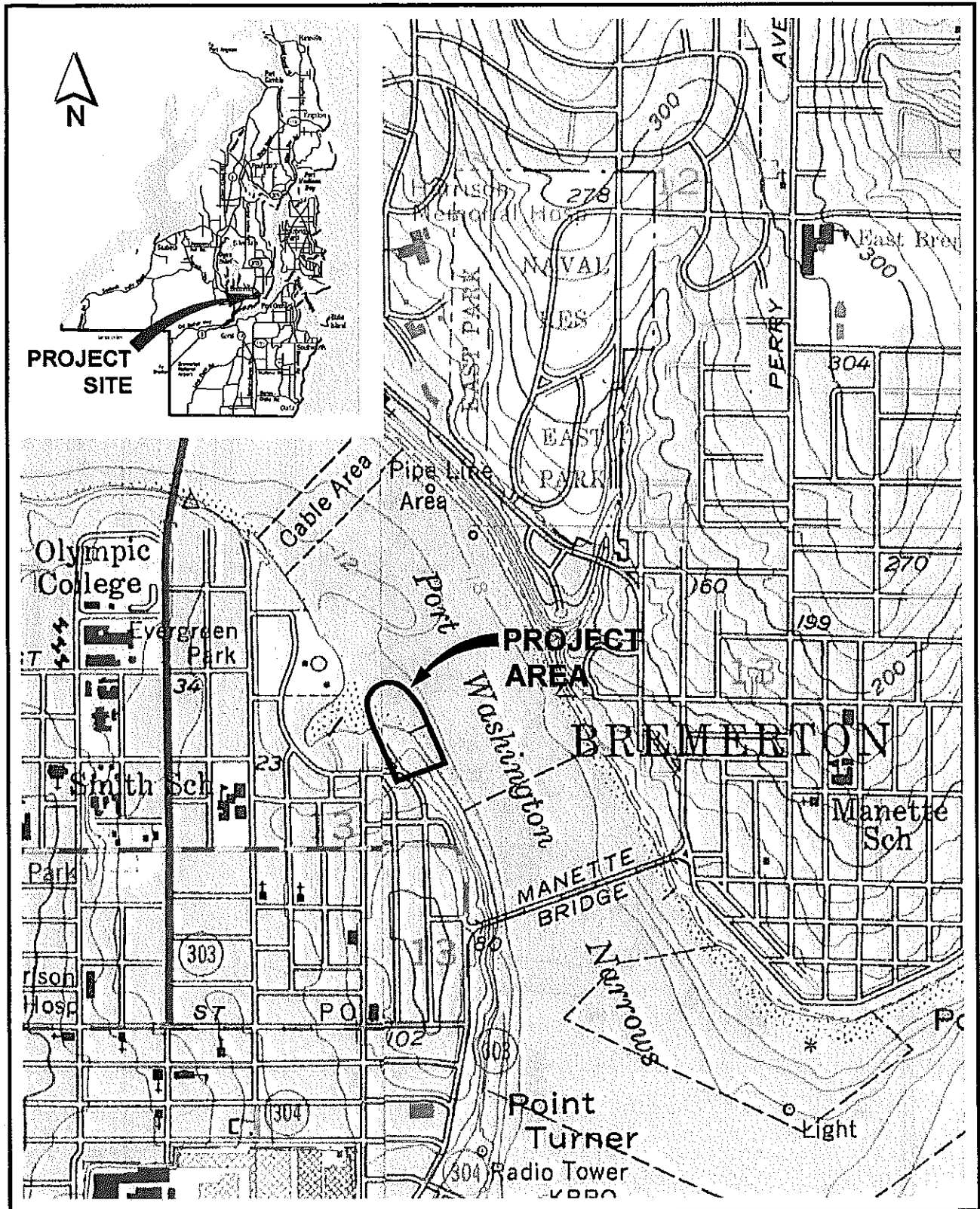
Effective date of this Order: 12/20/12

CITY OF BREMERTON

**STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY**

 12-12-12
Patty Lent
Mayor
The City of Bremerton
Bremerton, Washington
Telephone: (360) 473-5266


Tim L. Nord
Section Manager
Toxics Cleanup Program
Land & Aquatic Lands Cleanup Section
Telephone: (360) 407-7226



Parametrix DATE Mar 22, 2012 FILE BR1896063P0411304 089 F01

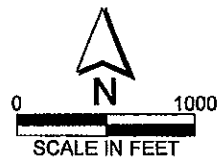
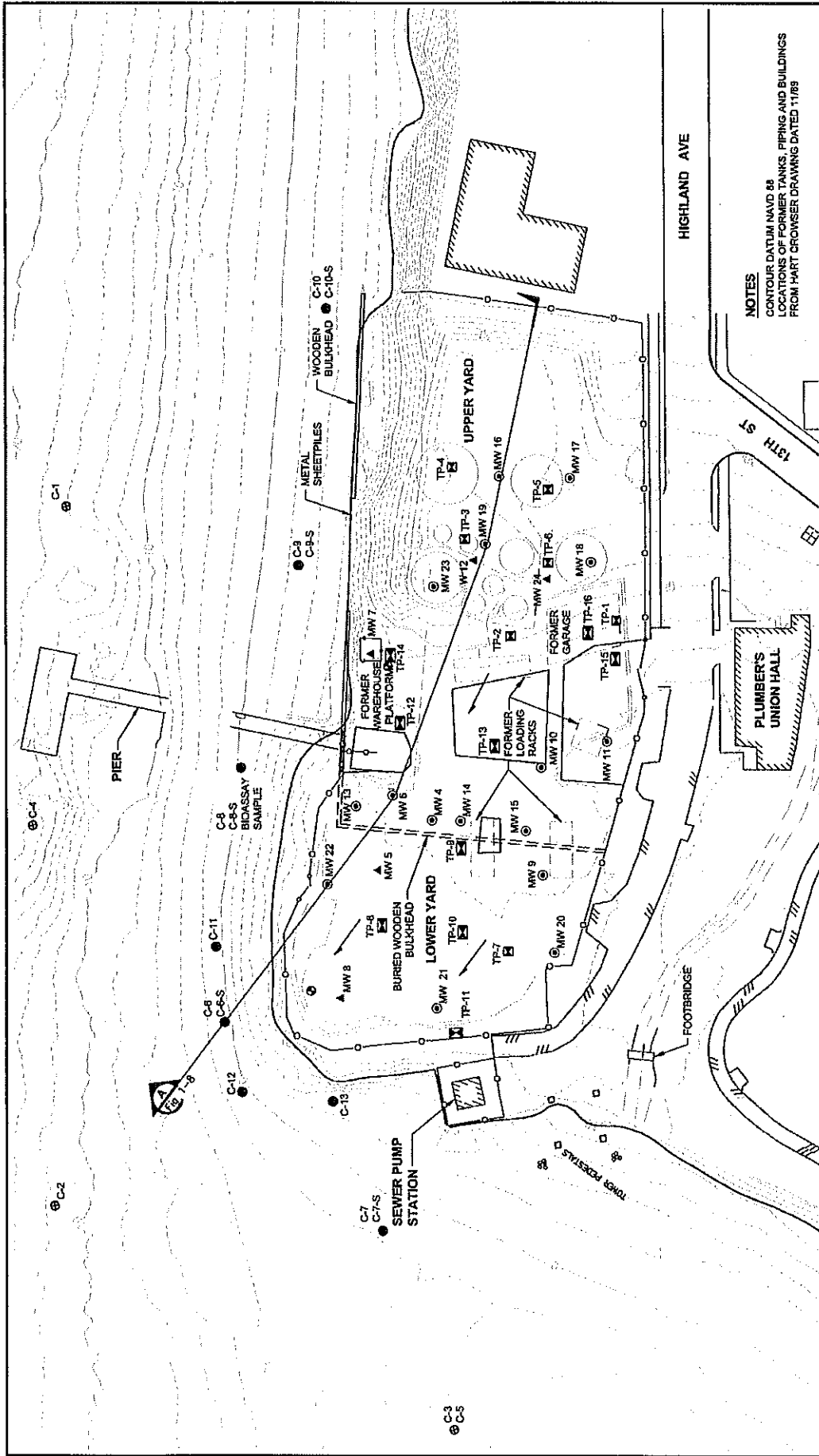


Figure 1
Former Chevron Property
Project Vicinity



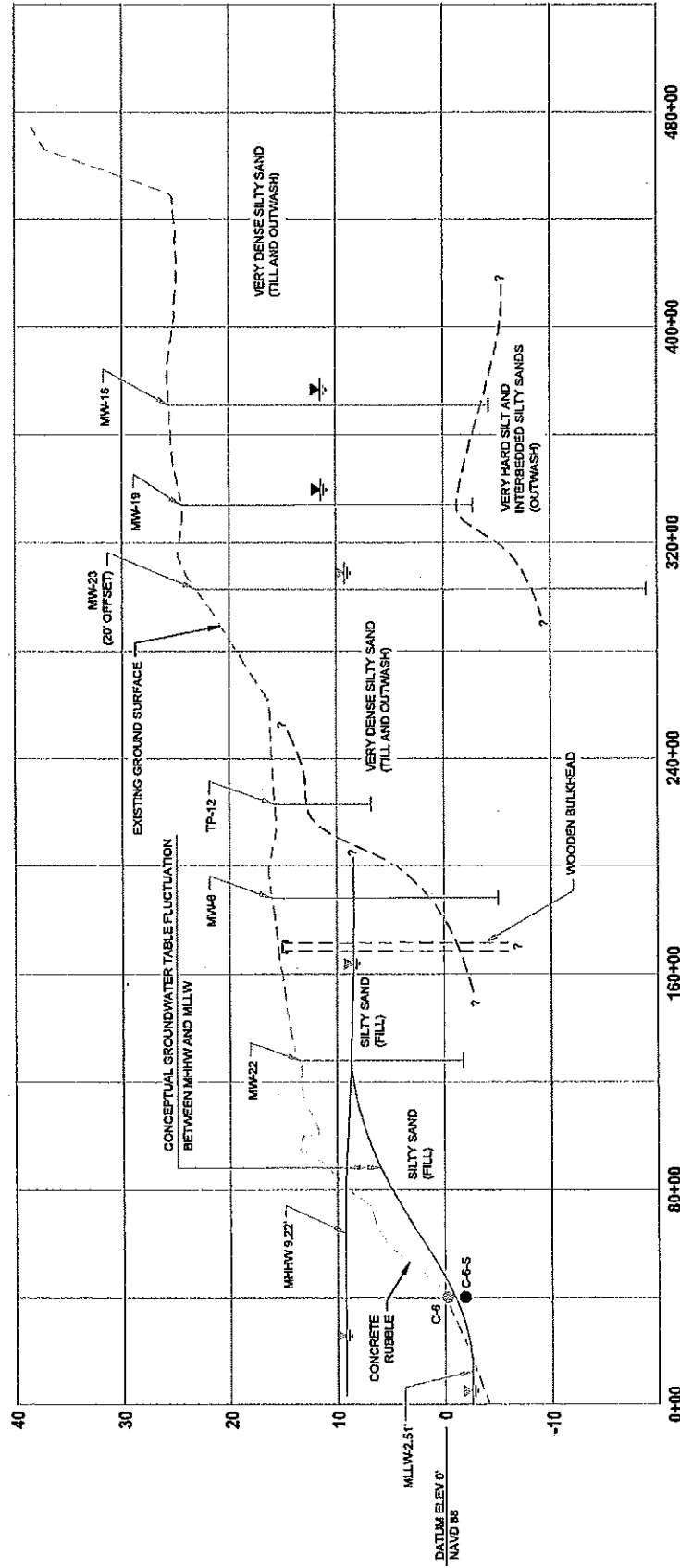
NOTES
 CONTOUR DATUM NAVD 88
 LOCATIONS OF FORMER TANKS, PIPING AND BUILDINGS
 FROM HART CROWSER DRAWING DATED 11/83

Figure 2
Former Chevron Property DCAP
Historical Site Features

- LEGEND**
- INTERTIDAL SEDIMENT SAMPLE
 - ⊙ SUBTIDAL SEDIMENT SAMPLE
 - ⊙ EXISTING MONITORING WELL
 - ⊙ TEST PIT, GEO ENGINEERS 1985
 - ⊙ TEST PIT, HART CROWSER 1989
 - ⊙ DESTROYED MONITORING WELL
 - ⊙ EXISTING CONCRETE PAD
 - EXISTING BUILDING
 - CHAIN LINK FENCE
 - DRAINAGE DITCH
 - FORMER PIPING/BUILDING/LOADING RACK
 - SURFACE SEDIMENT SAMPLE
 - SEDIMENT SAMPLE COLLECTED AT 2 FT DEPTH
 - FORMER ABOVEGROUND STORAGE TANK
 - GENERAL GROUNDWATER FLOW DIRECTION

Parametrix DATE: 10/27/2017 FILE: BIRMINGHAM-DCAP-001.dwg





SECTION A
 HORIZ: 1"=40'
 VERT: 1"=10'

Figure 3
 Former Chevron Property
 Section A

LEGEND
 ▽ GROUNDWATER TABLE ELEVATION
 MEASURED 10/24/08
 ● SEDIMENT SAMPLES

NOTES:
 MEAN HIGHER HIGH WATER (MHHW) AND MEAN LOWER LOW WATER (MLLW) ELEVATIONS
 OBTAINED FROM NOAA RECORDS FOR TIDAL STATION BREMERTON, VA, ID NO. 9445558

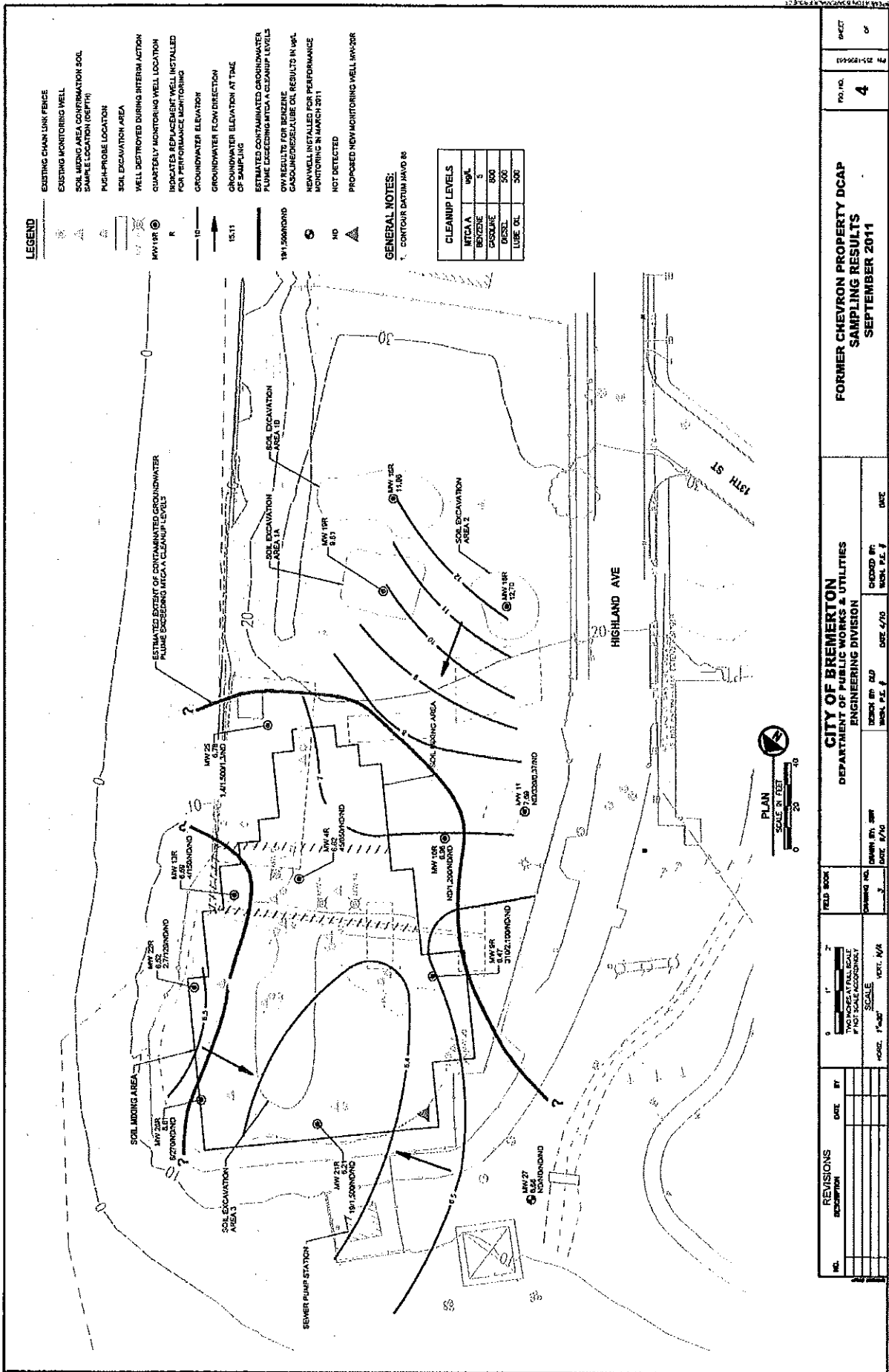
LEGEND

- EXISTING CHAIN LINK FENCE
- EXISTING MONITORING WELL
- SOIL MIXING AREA CONFIRMATION SOIL SAMPLE LOCATION (DEPTH)
- PUSH-PROBE LOCATOR
- SOIL EXCAVATION AREA
- WELL DESTROYED DURING INTERIM ACTION
- QUARTERLY MONITORING WELL LOCATION
- INDICATES REPLACEMENT WELL INSTALLED FOR PERFORMANCE MONITORING
- GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION AT TIME OF SAMPLING
- ESTIMATED EXTENT OF CONTAMINATED GROUNDWATER PLUME EXCEEDING MTCAA CLEANUP LEVELS
- MTCAA
- BENZENE
- DISCLOSE
- DESEAL
- LUBE OIL
- 500
- 500

GENERAL NOTES:

1. CONTOUR DATUM NAVD 83

CLEANUP LEVELS	
MTCAA	100
BENZENE	5
DISCLOSE	800
DESEAL	500
LUBE OIL	500



REVISIONS		DATE	BY
NO.	DESCRIPTION		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

CITY OF BREMERTON
DEPARTMENT OF PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

DESIGN BY: JLD
CHECKED BY: JLD
DATE: 4/10
WORK P.L. 1

FIELD BOOK
SHEET NO. 4
DATE: 4/10

FORMER CHEVRON PROPERTY DCAP
SAMPLING RESULTS
SEPTEMBER 2011

NO. 4
SHEET 4

Former Chevron Property Cleanup Action Work Plan

Prepared for

City of Bremerton
3037 Olympus Drive
Bremerton, WA 98310

Prepared by

Parametrix
4660 Kitsap Way, Suite A
Bremerton, WA 98312-2357
T. 360.377.0014 F. 360.479.5961
www.parametrix.com

CITATION

Parametrix. 2012. Former Chevron Property
Cleanup Action Work Plan. Prepared by Parametrix,
Bremerton, Washington. April 2012.

CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned.

Prepared by Lara Linde, LG

Checked by David Dinkuhn, P.E.

TABLE OF CONTENTS

1. INTRODUCTION.....	1-1
1.1 PURPOSE	1-1
2. SUMMARY OF SITE CONDITIONS	2-1
2.1 SITE DESCRIPTION AND HISTORY	2-1
2.2 SUMMARY OF ENVIRONMENTAL CONDITIONS	2-1
2.2.1 Existing Soil Conditions.....	2-1
2.2.2 Existing Groundwater Conditions	2-1
3. CLEANUP REQUIREMENTS	3-1
3.1 INDICATOR HAZARDOUS SUBSTANCES	3-1
3.2 CLEANUP LEVELS.....	3-1
4. SELECTED CLEANUP ACTION SCOPE OF WORK	4-1
4.1 LONG-TERM GROUNDWATER MONITORING PLAN	4-1
4.1.1 Summary of Plan	4-2
4.2 SOIL MONITORING PLAN	4-2
4.3 INSTITUTIONAL CONTROLS PLAN	4-2
4.3.1 Restrictive Covenant.....	4-3
4.4 SCHEDULE	4-3
5. REFERENCES	5-1

LIST OF FIGURES

- 1 Project Vicinity
- 2 1963 Aerial Photograph
- 3 Circa 2005 Aerial Photograph
- 4 Historical Site Features
- 5 RI/FS Subsurface Soil Sampling Locations
- 6 Interim Action Soil Mixing Area and Confirmation Sample Results
- 7 Well Location Plan and 6-Month Post Treatment Soil Result
- 8 RI/FS Groundwater Sampling Locations
- 9 Groundwater Contours September 2011

TABLE OF CONTENTS (CONTINUED)

LIST OF TABLES

- 1 Groundwater Results Summary, RI 1st through 4th Monitoring Events
(February, May, and August 2010, and April and September 2011)
- 2 Cleanup Levels
- 3 Proposed Initial Groundwater Sampling Program
- 4 Proposed Schedule

DRAFT

KEY TERMS AND ABBREVIATIONS

ASTs	aboveground storage tanks
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAP	Cleanup Action Plan
City	City of Bremerton
COCs	Contaminants of concern
DCAP	Draft Cleanup Action Plan
Ecology	Washington State Department of Ecology
HASP	Health and Safety Plan
IA	Interim Action
ICP	Institutional Controls Plan
LTGMP	Long-Term Groundwater Monitoring Plan
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
ORC	oxygen release compound
PAHs	Polycyclic aromatic hydrocarbons
RI/FS	Remedial Investigation/ Feasibility Study
Site	Former Chevron Property site
SMP	Soil Monitoring Plan
ug/L	Micrograms per liter
WAC	Washington Administrative Code

1. INTRODUCTION

This Work Plan has been prepared as part of the Cleanup Action to be performed at the Former Chevron Property site (Site) located at 1310 Highland Avenue in Bremerton, Washington (Figure 1). Preparation of this Work Plan is a requirement of the site's Agreed Order (DE-07TCPHQ-5024) established between the Washington State Department of Ecology (Ecology) and the City of Bremerton (City). To date, the City has performed a Remedial Investigation/ Feasibility Study (RI/FS) and Interim Action at the site in order to address soil and groundwater contamination related to historical releases of petroleum products (Parametrix 2011).

1.1 PURPOSE

This Work Plan was completed per the Agreed Order and Washington Administrative Code (WAC) 173-340-380, Model Toxics Control Act (Ecology 2007). The purpose of the Work Plan is to present tasks to be performed at the site as part of a Cleanup Action. This plan also includes a general description of the documents required as part of cleanup actions developed under the RI/FS (Parametrix 2011). The Work Plan includes:

- A brief summary of RI/FS and Interim Action (IA) activities performed at the site.
- Requirements for development of planning documents including a Long-Term Groundwater Monitoring Plan, Soil Monitoring Plan and an Institutional Controls Plan.
- Requirements for securing a restrictive or environmental covenant for the site.
- A schedule for implementation of the Cleanup Action.

2. SUMMARY OF SITE CONDITIONS

2.1 SITE DESCRIPTION AND HISTORY

The Former Chevron Property is a 1.4-acre waterfront property located adjacent to Evergreen Rotary Park on the Port Washington Narrows. The historical bulk fuel tank farm operated at the site from prior to 1946 until circa 1988 (Figure 2). Based on aerial photographs, the facility was expanded northward to its present boundaries between 1946 and 1963 (Figure 3) by the placement of fill in the intertidal zone. This filling created a relatively level "lower yard" area where commercial fueling operations were conducted. The site uplands or "upper yard" are the former location of the aboveground bulk fuel tanks (Figure 4). The majority of the site's shoreline is armored with concrete rubble or steel and wooden bulkheads.

Products handled at the tank farm consisted primarily of diesel and gasoline (Hart Crowser 1989). Fuel was offloaded from barges at a fueling pier in the Port Washington Narrows and pumped through piping to 12 aboveground storage tanks (ASTs) located in the upper yard. Fuel transfer likely occurred through underground piping as evidenced by observations made during the IA, when corroded steel piping was exposed in soil excavations conducted to remove hot spot soils in the lower yard. Leaks from this underground piping are the likely source of the majority of the subsurface contamination at the site. Fuel was loaded from the ASTs to tank trucks at four loading racks located in the lower yard. All aboveground structures were removed by the end of 1988 (GeoEngineers 1998).

Environmental work at the site began in 1988 following demolition of the bulk fuel facility (GeoEngineers 1988). Since this time, Parametrix has performed an Interim Action and an RI/FS report (Parametrix 2011).

2.2 SUMMARY OF ENVIRONMENTAL CONDITIONS

2.2.1 Existing Soil Conditions

Following the IA, residual contaminated soils with concentrations exceeding cleanup levels remain in some lower yard areas; however, residual concentrations are significantly reduced from pre-IA levels (Figures 5, 6, and 7). Contaminants that currently exceed cleanup levels in lower yard subsurface soils consist of:

- Gasoline (up to 1,000 milligrams per kilogram [mg/kg]).
- Benzene (up to 5.4 mg/kg).
- Ethylbenzene (up to 20 mg/kg).
- Total xylenes (up to 94 mg/kg).
- Polycyclic aromatic hydrocarbons (PAHs) (up to 2.7 mg/kg by toxicity equivalency method).

As described previously, all upper yard contaminated soils in excess of cleanup levels were removed during the IA.

2.2.2 Existing Groundwater Conditions

The approximate extent of groundwater contamination exceeding cleanup levels during remedial investigation sampling is shown on Figure 8. The most recent performance monitoring data is shown on Figure 9.

The performance monitoring shows a generally decreasing trend in concentrations with two exceptions: MW-09R and MW-21R exhibited increasing concentrations in the second through fourth performance monitoring sampling events. Concentrations then decreased following the supplemental oxygen release compound (ORC) injection. The increasing concentrations are apparently due to residual gasoline contamination present in the soils within the vicinity of the wells. As the oxygen released by the ORC declined with time, the associated aerobic biodegradation also declined. Once aerobic respiration was no longer occurring, concentrations in groundwater increased to equilibrium levels associated with anaerobic conditions.

Evidence that aerobic respiration has occurred in the wells is demonstrated by elevated alkalinity and decreasing dissolved oxygen concentrations following both injection events. Evidence that anaerobic biodegradation is occurring is provided by elevated dissolved methane concentrations with associated negative oxidation reduction potential values (Table 1).

Testing was conducted for both total and dissolved lead during the sampling events; the only results that exceeded cleanup levels were total lead results from wells MW-09R, MW-20, and MW-21R (Table 1). In general, corresponding dissolved results did not exceed cleanup levels, indicating that the total results were biased high by the presence of suspended sediment. An exception is a single dissolved lead result from well MW-09R in August 2010, which slightly exceeded the cleanup level.

3. CLEANUP REQUIREMENTS

3.1 INDICATOR HAZARDOUS SUBSTANCES

Contaminants of concern (COCs) at the site remaining in site soils consist of:

- Gasoline (up to 1,000 mg/kg).
- Benzene (up to 5.4 mg/kg).
- Ethylbenzene (up to 20 mg/kg).
- Total xylenes (up to 94 mg/kg).
- PAHs (up to 2.7 mg/kg by toxicity equivalency method).

COCs remaining in site groundwater consist of:

- Gasoline (up to 2,100 ug/L).
- Diesel (up to 1,300 ug/L).
- Benzene (up to 310 ug/L).

3.2 CLEANUP LEVELS

Applicable cleanup levels for the site were established in the RI/FS and IA work plan (Parametrix 2007) and consist of:

- Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Use (WAC 173-340, Table 740-1).
- MTCA Method A Cleanup Levels for Groundwater (WAC 173-340, Table 720-1).
- MTCA Method A cleanup levels are listed in Table 2.

4. SELECTED CLEANUP ACTION SCOPE OF WORK

IA activities performed at the site to date have resulted in a substantial reduction in contaminant mass. Natural attenuation is occurring at the site and should continue to reduce contaminant concentrations over time. Long-term groundwater monitoring will be performed to verify that natural attenuation is ongoing. It is anticipated that once groundwater concentrations reach cleanup levels at the point of compliance, groundwater monitoring will be discontinued. In addition to groundwater monitoring, institutional controls will be implemented to reduce exposure risk for contaminants remaining in site soil and groundwater.

The proposed future cleanup action scope of work for the site includes the following submittals:

- A Long-Term Groundwater Monitoring Plan (LTGMP) to monitor groundwater concentrations and to verify that natural attenuation is continuing to occur.
- Soil Monitoring Plan (SMP) should the City require removal of institutional controls to redevelop the site at a later date.
- An Institutional Controls Plan (ICP) to help ensure protection of human health and the environment.
- An environmental covenant to limit activities and land use of the site will be prepared as part of the ICP.

Each of these elements is described in further detail below.

4.1 LONG-TERM GROUNDWATER MONITORING PLAN

A detailed groundwater monitoring plan will be developed by the City and submitted to Ecology. A summary of the anticipated future groundwater monitoring plan is provided below. The monitoring plan shall include the following elements presented in WAC 173-340-820 (3):

- Purpose and objective(s).
- Organization and responsibilities.
- Identification and justification of location, frequency of sampling, and selected analytical parameters.
- Specific sampling and handling procedures including sample labeling and completion of chains-of-custody.
- Requirements for decontamination and investigation derived waste.
- Analytical requirements such as detection or quantitation limits and identification of selected analytical methods.
- Quality assurance plan.
- Data reporting and validation procedures.
- Site-specific health and safety plan.

A draft and final version of this plan will be submitted for Ecology review and approval before sampling begins.

4.1.1 Summary of Plan

A brief summary of the work activities under the Long-term Groundwater Monitoring Plan to be completed has been included for reference.

- **Additional Well Installation** – An additional well will be installed to replace former well MW-20 at the location shown on Figure 9. Well MW-20R will be included in long-term monitoring to provide more complete coverage of downgradient groundwater conditions.
- **Groundwater Monitoring** – Groundwater monitoring will be conducted on a semi-annual basis in all 11 lower yard wells (MW-4R, MW-9R, MW-10R, MW-11, MW-13R, MW-20R, MW-21R, MW-22R, MW-25, MW-26R, and MW-27) for an initial period of 4 years. The semi-annual events will occur in the spring and fall to assess both wet and dry weather conditions. The three upper yard wells (MW-16R, MW-18R, and MW-19R) will not be monitored since COCs were not detected above cleanup levels in these wells during four consecutive rounds of monitoring (Table 1). All samples will be analyzed for gasoline; benzene, toluene, ethylbenzene, and total xylenes (BTEX); diesel, lube oil, field parameters; and natural attenuation parameters (Table 3). In addition, MW-9R will be analyzed for total and dissolved lead. Four quarterly groundwater monitoring events will be conducted during the fifth year. At the completion of each sampling event, a technical memorandum will be prepared and submitted presenting the groundwater results. A 5-year summary monitoring report will be prepared at the end of the initial 5-year monitoring period, which will include recommendations for any follow on monitoring. Recommendations may include proposed changes to the monitoring program such as a reduction in the total number of wells sampled or a reduction in the number of analytes. A proposed monitoring schedule is provided in Table 4. An updated site specific Health and Safety Plan (HASP) will be developed as part of the field preparation for the long-term groundwater monitoring.

4.2 SOIL MONITORING PLAN

Although it is not anticipated, development of the site beyond what is currently planned could occur at a future date. Future development may require removal of proposed land use restrictions described in Section 4.3. Should this time come, the City will develop a Soil Monitoring Plan that will address cleanup of existing soil contamination and submit a draft and final plan for Ecology review and approval. The soil monitoring plan should include the following:

- Similar elements described in the Long Term Monitoring Plan in Section 4.1.
- Proposed site development requiring environmental restrictions to be removed.
- Proposed confirmation soil sampling methodology.
- Proposed reporting which supports removal of land use restrictions.

4.3 INSTITUTIONAL CONTROLS PLAN

WAC 173-340-360(2)(e) requires cleanup actions to use institutional controls to limit or prohibit activities that may interfere with the integrity of a cleanup action or that may result in exposure of hazardous substances at a site. They are required to ensure the continued protection of human health and the environment and the integrity of the cleanup. Institutional controls may include physical measures (such as fences), restrictions on the use of the property, maintenance requirements for engineering controls (e.g., maintenance of caps), education programs, and financial assurances.

An Institutional Controls Plan will be developed by the City which will address the following:

- Existing institutional controls for the site, if any.
- Institutional controls or procedures to be implemented on the site including restrictive or environmental covenant.
- Timetable for establishment of new institutional controls or procedures.
- Identification of entity responsible for implementation, maintenance, and enforcement of selected institutional controls.
- Details on how protectiveness will be measured for each implemented institutional control.

A draft and final version of the Institutional Control Plan will be submitted for Ecology review and approval.

4.3.1 Restrictive Covenant

Land use restrictions are proposed for the site in which a restrictive covenant (or Ecology-approved equivalent such as an environmental covenant) will be executed by the City and recorded with the register of deeds for Kitsap County. At a minimum, the restrictive covenant will describe procedures to be followed during any future site excavation activities that could result in worker exposure or the transfer of contaminated soils to the ground surface. Such procedures shall include worker health and safety training requirements and contaminated soil management procedures. Use of site groundwater for any purpose will be prohibited. Future sites use shall be restricted to that of an outdoor recreational park. The restrictive covenant will also require that Ecology be notified of the City's intent to convey any interest in the site or to change land use from an outdoor recreational park to some other use. Final requirements for the restrictive covenant (or equivalent) will be negotiated by Ecology and the City.

4.4 SCHEDULE

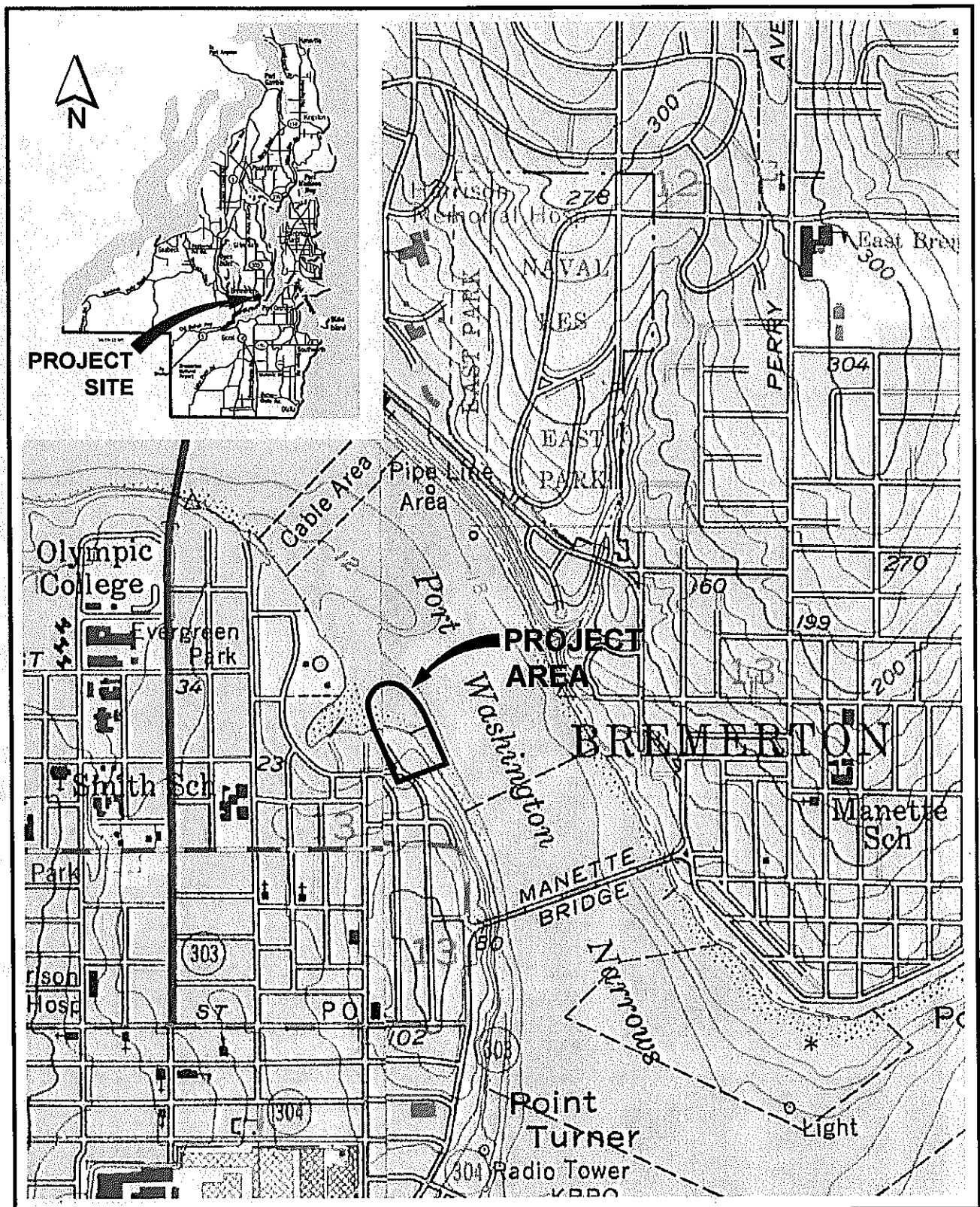
Implementation of the Work Plan will begin upon Ecology approval. It is anticipated that the first plan elements (development of a Long Term Groundwater Monitoring Plan and the first quarter groundwater monitoring event) will occur during the summer 2012. A proposed project schedule is provided in Table 4.

5. REFERENCES

- Ecology. 2007. Model toxics control act cleanup regulations. Washington Administrative Code (WAC) 173-340. November 2007.
- GeoEngineers. 1988. Report of geotechnical services, subsurface contamination study, Chevron Bulk Fuel Terminal, Bremerton, Washington. Prepared for Chevron U.S.A. November.
- Hart Crowser. 1989. Summary of work accomplished to date and pending, former Chevron Bremerton Bulk Plant, Bremerton, Washington. Prepared for Chevron U.S.A., Inc., Seattle, Washington. November.
- Parametrix. 2011. Former Chevron property remedial investigation/feasibility report. Prepared for The City of Bremerton. September.
- Parametrix. 2007. Work plan for remedial investigation/feasibility study, interim action, and shoreline restoration former Chevron property, Bremerton, Washington. Prepared for the City of Bremerton. September.

DRAFT

FIGURES



Parametrix DATE: Apr 13, 2012 FILE: BR1896063P04T1304 058 F01

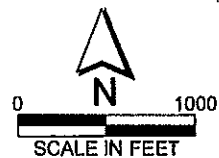
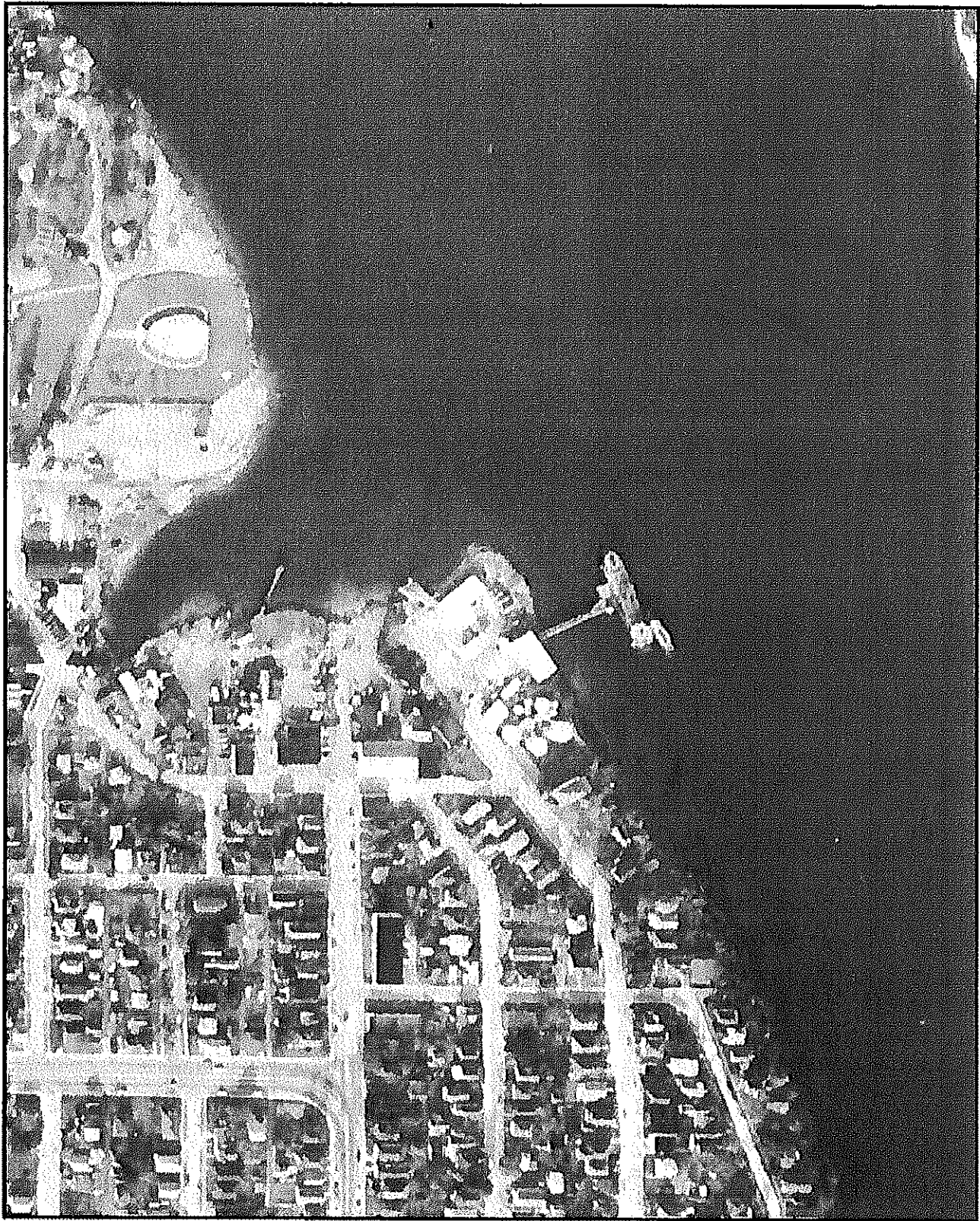


Figure 1
Former Chevron Property
Cleanup Action Work Plan
Project Vicinity



Parametrix DATE Apr 13, 2012 FILE BR1896063P04T1304 098 F02

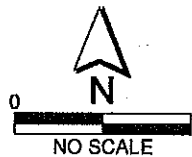


Figure 2
Former Chevron Property
Cleanup Action Work Plan
1963 Aerial Photograph



Parametrix DATE: Apr 13, 2012 FILE: BR1896063P04T1304 098 F02

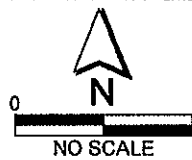
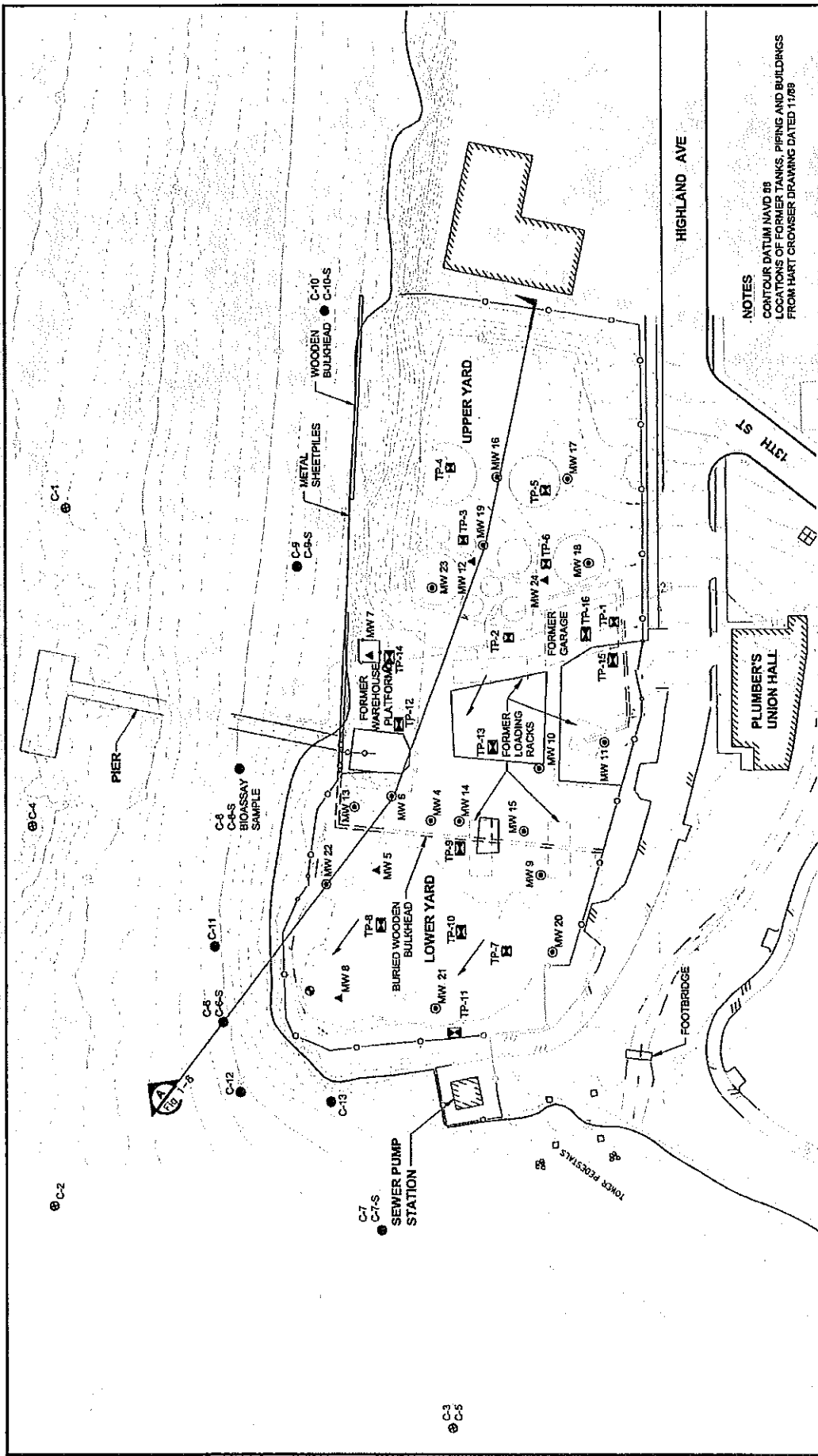


Figure 3
Former Chevron Property
Cleanup Action Work Plan
CIRCA 2005 Aerial Photograph



Parametrix DATE: 04/13/2017 FILE: D:\PROJECTS\2017\20170413\20170413_001.dwg

0 50
SCALE IN FEET

Figure 4
Former Chevron Property
Cleanup Action Work Plan
Historical Site Features

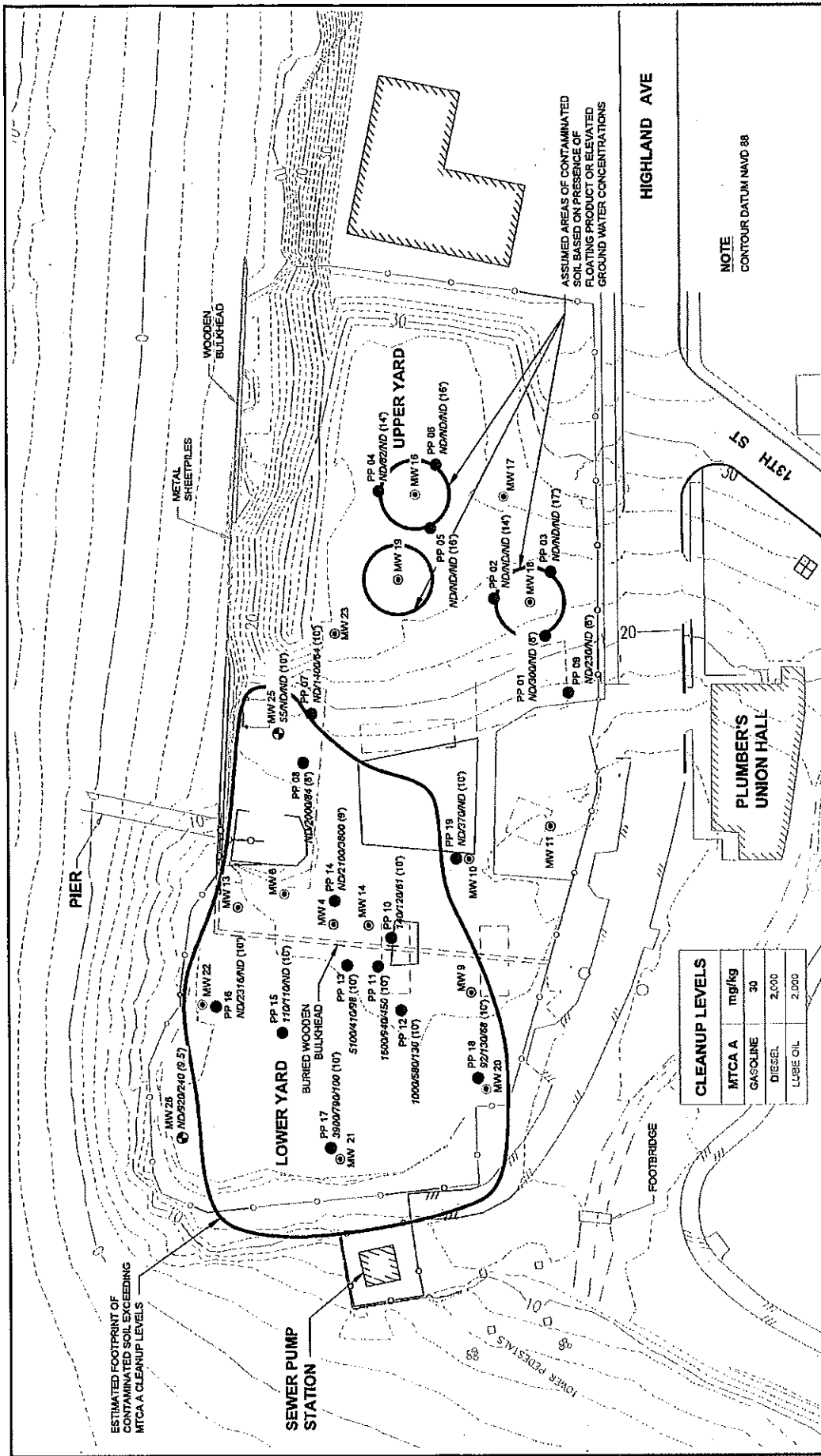
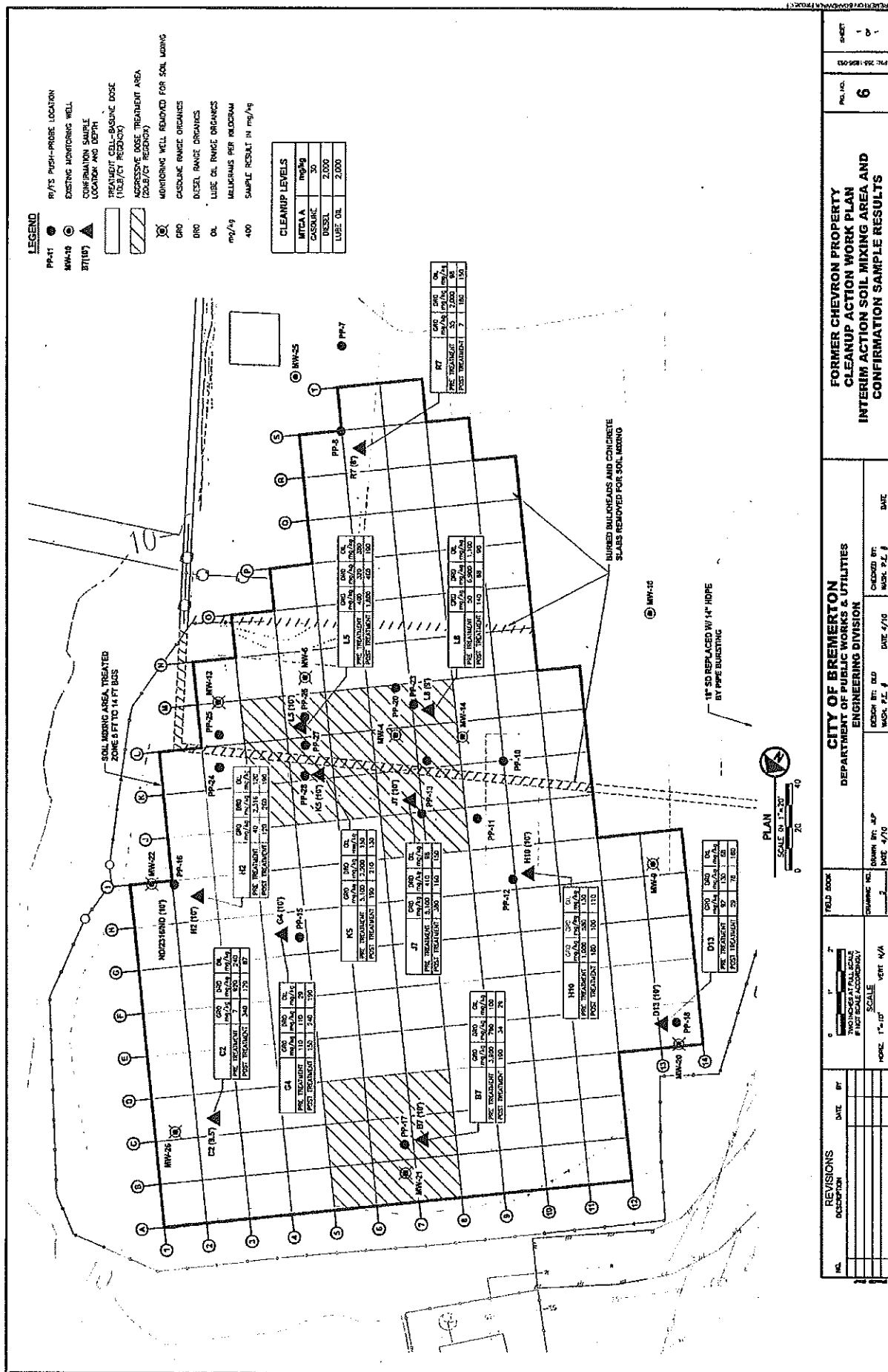


Figure 5
Former Chevron Property
Cleanup Action Work Plan
RIFS Subsurface Soil Sampling Locations



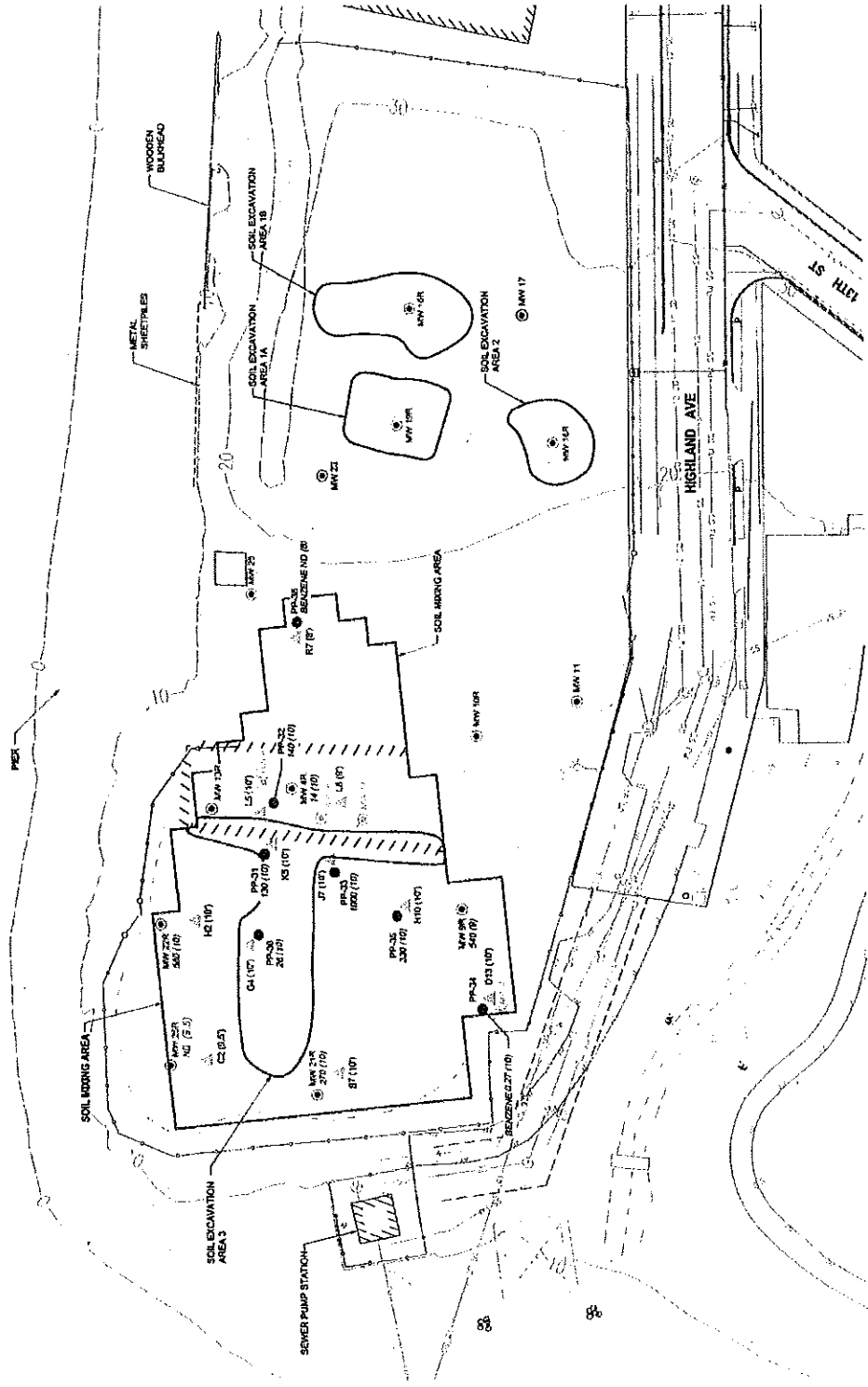
LEGEND

- EXISTING CHAIN LINK FENCE
- EXISTING MONITORING WELL
- SOIL MIXING AREA (CONFINEMENT SOIL SAMPLE LOCATION (DEPTH))
- PUSH-ROBE LOCATION
- SOIL EXCAVATION AREA
- WELL EXCAVATED DURING INTERIM ACTION
- WELL INCLUDED IN CONFIRMATION SAMPLING PROGRAM
- INDICATES NEW ASBESTOS WELLS INSTALLED FOR POST TREATMENT GROUNDWATER MONITORING
- GLASS LIME OR BENZENE CONCENTRATION
- NOT DETECTED
- MILLIGRAMS PER MILLIGRAM
- SAMPLE DEPTH IN FEET

GENERAL NOTES

1. CONTAIN DUTY HAND 18

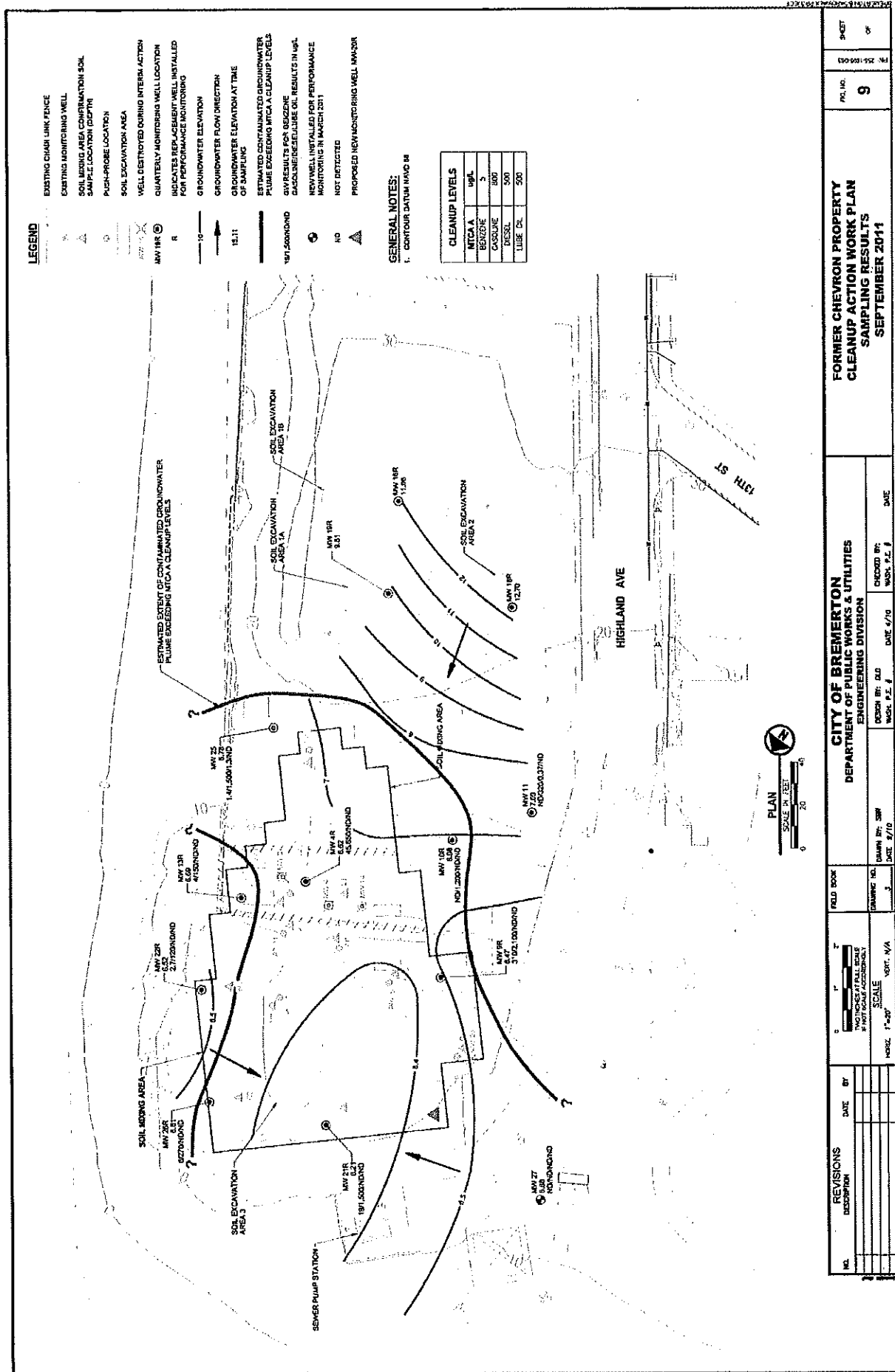
CLEANUP LEVELS	
MTCA A	mg/kg
OSGONE	30
BENZENE	0.11



REVISIONS		DATE	BY
NO.	DESCRIPTION		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

CITY OF BREMERTON	
DEPARTMENT OF PUBLIC WORKS & UTILITIES	ENGINEERING DIVISION
DESIGN BY: J.P.	CHECKED BY: J.P.
DATE: 4/10	DATE: 4/10
WORK P.L. #	WORK P.L. #

FORMER CHEVRON PROPERTY	
CLEANUP ACTION WORK PLAN AND	INTERIM ACTION WELL LOCATION PLAN AND
6-MONTH POST TREATMENT SOIL RESULTS	
PROJ. NO.	7
SHEET	1



TABLES

Table 1 Groundwater Results Summary, RI 1st through 4th Monitoring Events and Performance Monitoring (February, May, and August 2010, and April and September 2011)

Monitoring Well ID	Sample Date	PARAMETERS		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13		MW-14		MW-15		MW-16		MW-17		MW-18		MW-19		MW-20		MW-21		MW-22		MW-23		MW-24		MW-25		MW-26		MW-27		MW-28		MW-29		MW-30		MW-31		MW-32		MW-33		MW-34		MW-35		MW-36		MW-37		MW-38		MW-39		MW-40		MW-41		MW-42		MW-43		MW-44		MW-45		MW-46		MW-47		MW-48		MW-49		MW-50		MW-51		MW-52		MW-53		MW-54		MW-55		MW-56		MW-57		MW-58		MW-59		MW-60		MW-61		MW-62		MW-63		MW-64		MW-65		MW-66		MW-67		MW-68		MW-69		MW-70		MW-71		MW-72		MW-73		MW-74		MW-75		MW-76		MW-77		MW-78		MW-79		MW-80		MW-81		MW-82		MW-83		MW-84		MW-85		MW-86		MW-87		MW-88		MW-89		MW-90		MW-91		MW-92		MW-93		MW-94		MW-95		MW-96		MW-97		MW-98		MW-99		MW-100		MW-101		MW-102		MW-103		MW-104		MW-105		MW-106		MW-107		MW-108		MW-109		MW-110		MW-111		MW-112		MW-113		MW-114		MW-115		MW-116		MW-117		MW-118		MW-119		MW-120		MW-121		MW-122		MW-123		MW-124		MW-125		MW-126		MW-127		MW-128		MW-129		MW-130		MW-131		MW-132		MW-133		MW-134		MW-135		MW-136		MW-137		MW-138		MW-139		MW-140		MW-141		MW-142		MW-143		MW-144		MW-145		MW-146		MW-147		MW-148		MW-149		MW-150		MW-151		MW-152		MW-153		MW-154		MW-155		MW-156		MW-157		MW-158		MW-159		MW-160		MW-161		MW-162		MW-163		MW-164		MW-165		MW-166		MW-167		MW-168		MW-169		MW-170		MW-171		MW-172		MW-173		MW-174		MW-175		MW-176		MW-177		MW-178		MW-179		MW-180		MW-181		MW-182		MW-183		MW-184		MW-185		MW-186		MW-187		MW-188		MW-189		MW-190		MW-191		MW-192		MW-193		MW-194		MW-195		MW-196		MW-197		MW-198		MW-199		MW-200		MW-201		MW-202		MW-203		MW-204		MW-205		MW-206		MW-207		MW-208		MW-209		MW-210		MW-211		MW-212		MW-213		MW-214		MW-215		MW-216		MW-217		MW-218		MW-219		MW-220		MW-221		MW-222		MW-223		MW-224		MW-225		MW-226		MW-227		MW-228		MW-229		MW-230		MW-231		MW-232		MW-233		MW-234		MW-235		MW-236		MW-237		MW-238		MW-239		MW-240		MW-241		MW-242		MW-243		MW-244		MW-245		MW-246		MW-247		MW-248		MW-249		MW-250		MW-251		MW-252		MW-253		MW-254		MW-255		MW-256		MW-257		MW-258		MW-259		MW-260		MW-261		MW-262		MW-263		MW-264		MW-265		MW-266		MW-267		MW-268		MW-269		MW-270		MW-271		MW-272		MW-273		MW-274		MW-275		MW-276		MW-277		MW-278		MW-279		MW-280		MW-281		MW-282		MW-283		MW-284		MW-285		MW-286		MW-287		MW-288		MW-289		MW-290		MW-291		MW-292		MW-293		MW-294		MW-295		MW-296		MW-297		MW-298		MW-299		MW-300		MW-301		MW-302		MW-303		MW-304		MW-305		MW-306		MW-307		MW-308		MW-309		MW-310		MW-311		MW-312		MW-313		MW-314		MW-315		MW-316		MW-317		MW-318		MW-319		MW-320		MW-321		MW-322		MW-323		MW-324		MW-325		MW-326		MW-327		MW-328		MW-329		MW-330		MW-331		MW-332		MW-333		MW-334		MW-335		MW-336		MW-337		MW-338		MW-339		MW-340		MW-341		MW-342		MW-343		MW-344		MW-345		MW-346		MW-347		MW-348		MW-349		MW-350		MW-351		MW-352		MW-353		MW-354		MW-355		MW-356		MW-357		MW-358		MW-359		MW-360		MW-361		MW-362		MW-363		MW-364		MW-365		MW-366		MW-367		MW-368		MW-369		MW-370		MW-371		MW-372		MW-373		MW-374		MW-375		MW-376		MW-377		MW-378		MW-379		MW-380		MW-381		MW-382		MW-383		MW-384		MW-385		MW-386		MW-387		MW-388		MW-389		MW-390		MW-391		MW-392		MW-393		MW-394		MW-395		MW-396		MW-397		MW-398		MW-399		MW-400		MW-401		MW-402		MW-403		MW-404		MW-405		MW-406		MW-407		MW-408		MW-409		MW-410		MW-411		MW-412		MW-413		MW-414		MW-415		MW-416		MW-417		MW-418		MW-419		MW-420		MW-421		MW-422		MW-423		MW-424		MW-425		MW-426		MW-427		MW-428		MW-429		MW-430		MW-431		MW-432		MW-433		MW-434		MW-435		MW-436		MW-437		MW-438		MW-439		MW-440		MW-441		MW-442		MW-443		MW-444		MW-445		MW-446		MW-447		MW-448		MW-449		MW-450		MW-451		MW-452		MW-453		MW-454		MW-455		MW-456		MW-457		MW-458		MW-459		MW-460		MW-461		MW-462		MW-463		MW-464		MW-465		MW-466		MW-467		MW-468		MW-469		MW-470		MW-471		MW-472		MW-473		MW-474		MW-475		MW-476		MW-477		MW-478		MW-479		MW-480		MW-481		MW-482		MW-483		MW-484		MW-485		MW-486		MW-487		MW-488		MW-489		MW-490		MW-491		MW-492		MW-493		MW-494		MW-495		MW-496		MW-497		MW-498		MW-499		MW-500		MW-501		MW-502		MW-503		MW-504		MW-505		MW-506		MW-507		MW-508		MW-509		MW-510		MW-511		MW-512		MW-513		MW-514		MW-515		MW-516		MW-517		MW-518		MW-519		MW-520		MW-521		MW-522		MW-523		MW-524		MW-525		MW-526		MW-527		MW-528		MW-529		MW-530		MW-531		MW-532		MW-533		MW-534		MW-535		MW-536		MW-537		MW-538		MW-539		MW-540		MW-541		MW-542		MW-543		MW-544		MW-545		MW-546		MW-547		MW-548		MW-549		MW-550		MW-551		MW-552		MW-553		MW-554		MW-555		MW-556		MW-557		MW-558		MW-559		MW-560		MW-561		MW-562		MW-563		MW-564		MW-565		MW-566		MW-567		MW-568		MW-569		MW-570		MW-571		MW-572		MW-573		MW-574		MW-575		MW-576		MW-577		MW-578		MW-579		MW-580		MW-581		MW-582		MW-583		MW-584		MW-585		MW-586		MW-587		MW-588		MW-589		MW-590		MW-591		MW-592		MW-593		MW-594		MW-595		MW-596		MW-597		MW-598		MW-599		MW-600		MW-601		MW-602		MW-603		MW-604		MW-605		MW-606		MW-607		MW-608		MW-609		MW-610		MW-611		MW-612		MW-613		MW-614		MW-615		MW-616		MW-617		MW-618		MW-619		MW-620		MW-621		MW-622		MW-623		MW-624		MW-625		MW-626		MW-627		MW-628		MW-629		MW-630		MW-631		MW-632		MW-633		MW-634		MW-635		MW-636		MW-637		MW-638		MW-639		MW-640		MW-641		MW-642		MW-643		MW-644		MW-645		MW-646		MW-647		MW-648		MW-649		MW-650		MW-651		MW-652		MW-653		MW-654		MW-655		MW-656		MW-657		MW-658		MW-659		MW-660		MW-661		MW-662		MW-663		MW-664		MW-665		MW-666		MW-667		MW-668		MW-669		MW-670		MW-671		MW-672		MW-673		MW-674		MW-675		MW-676		MW-677		MW-678		MW-679		MW-680		MW-681		MW-682		MW-683		MW-684		MW-685		MW-686		MW-687		MW-688		MW-689		MW-690		MW-691		MW-692		MW-693		MW-694		MW-695		MW-696		MW-697		MW-698		MW-699		MW-700		MW-701		MW-702		MW-703		MW-704		MW-705		MW-706		MW-707		MW-708		MW-709		MW-710		MW-711		MW-712		MW-713		MW-714		MW-715		MW-716		MW-717		MW-718		MW-719		MW-720		MW-721		MW-722		MW-723		MW-724		MW-725		MW-726		MW-727		MW-728		MW-729		MW-730		MW-731		MW-732		MW-733		MW-734		MW-735		MW-736		MW-737		MW-738		MW-739		MW-740		MW-741		MW-742		MW-743		MW-744		MW-745		MW-746		MW-747		MW-748		MW-749		MW-750		MW-751		MW-752		MW-753		MW-754		MW-755		MW-756		MW-757		MW-758		MW-759		MW-760		MW-761		MW-762		MW-763		MW-764		MW-765		MW-766		MW-767		MW-768		MW-769		MW-770		MW-771		MW-772		MW-773		MW-774		MW-775		MW-776		MW-777		MW-778		MW-779		MW-780		MW-781		MW-782		MW-783		MW-784		MW-785		MW-786		MW-787		MW-788		MW-789		MW-790		MW-791		MW-792		MW-793		MW-794		MW-795		MW-796		MW-797		MW-798		MW-799		MW-800		MW-801		MW-802		MW-803		MW-804		MW-805		MW-806		MW-807		MW-808		MW-809		MW-810		MW-811		MW-812		MW-813		MW-814		MW-815		MW-816		MW-817		MW-818		MW-819		MW-820		MW-821		MW-822		MW-823		MW-824		MW-825		MW-826		MW-827		MW-828		MW-829		MW-830		MW-831		MW-832		MW-833		MW-834		MW-835		MW-836		MW-837		MW-838		MW-839		MW-840		MW-841		MW-842		MW-843		MW-844		MW-845		MW-846		MW-847		MW-848		MW-849		MW-850		MW-851		MW-852		MW-853		MW-854		MW-855		MW-856		MW-857		MW-858		MW-859		MW-860		MW-861		MW-862		MW-863		MW-864		MW-865		MW-866		MW-867		MW-868		MW-869		MW-870		MW-871		MW-872		MW-873		MW-874		MW-875		MW-876		MW-877		MW-878		MW-879		MW-880		MW-881		MW-882		MW-883		MW-884		MW-885		MW-886		MW-887		MW-888		MW-889		MW-890		MW-891		MW-892		MW-893		MW-894		MW-895		MW-896		MW-897		MW-898		MW-899		MW-900		MW-901		MW-902		MW-903		MW-904		MW-905		MW-906		MW-907		MW-908		MW-909		MW-910		MW-911		MW-912		MW-913		MW-914		MW-915		MW-916		MW-917		MW-918		MW-919		MW-920		MW-921		MW-922		MW-923		MW-924		MW-925		MW-926		MW-927		MW-928		MW-929		MW-930		MW-931		MW-932		MW-933		MW-934		MW-935		MW-936		MW-937		MW-938		MW-939		MW-940		MW-941		MW-942		MW-943		MW-944		MW-945		MW-946		MW-947		MW-948		MW-949		MW-950		MW-951		MW-952		MW-953		MW-954		MW-955		MW-956		MW-957		MW-958	
--------------------	-------------	------------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	-------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--	--------	--

Table 2. Cleanup Levels

Hazardous Substance	Medium	
	Soil MTCA A (mg/kg)	Groundwater MTCA A (ug/L)
Benzene	0.030	5
Diesel	2,000	500
Motor Oil	2,000	500
Gasoline	30/100 ^a	800/1,000 ^b
Lead	250	15
Benzo(a) pyrene	0.1	.01

^a 100 if no benzene and gas <1% TEX; 30 for other mixtures.

^b 1 if no benzene; 0.8 if benzene.

ug/L = Micrograms per liter.

Table 3. Proposed Initial Groundwater Sampling Program

	Gasoline/BTEX	Diesel/Lube Oil	Field Parameters ^a	Conventional ^b	Dissolved Methane	Total Lead	Dissolved Lead ^c	Total Ferrous Iron	Dissolved Manganese ^c
MW-4R	X	X	X	X	X	-	-	X	X
MW-9R	X	X	X	X	X	X	X	X	X
MW-10R	X	X	X	X	X	-	-	X	X
MW-11	X	X	X	X	X	-	-	X	X
MW-13R	X	X	X	X	X	-	-	X	X
MW-16R	-	-	-	-	-	-	-	-	-
MW-18R	-	-	-	-	-	-	-	-	-
MW-19R	-	-	-	-	-	-	-	-	-
MW-20R	X	X	X	X	X	-	-	X	X
MW-21R	X	X	X	X	X	-	-	X	X
MW-22R	X	X	X	X	X	-	-	X	X
MW-25	X	X	X	X	X	-	-	X	X
MW-26R	X	X	X	X	X	-	-	X	X
MW-27	X	X	X	X	X	-	-	X	X

^a Turbidity, dissolved oxygen, ORP, pH, and specific conductance.

^b nitrate, sulfate, alkalinity, chloride.

^c field filtered.

Table 4. Proposed Schedule

Work Element	Submitted or Completed By
Long Term Groundwater Monitoring Plan & Health and Safety Plan	June 2012
Draft Cleanup Action Plan (DCAP) public comment period	June 2012
Environmental Covenant	July 2012
Institutional Controls Plan	July 2012
1st semi-annual groundwater sampling event	July 2012
DCAP finalized as Cleanup Action Plan (CAP)	September 2012
2nd Agreed Order finalized	November 2012
2nd semi-annual groundwater sampling event	January 2013
3rd semi-annual groundwater sampling event	July 2013
4th semi-annual groundwater sampling event	January 2014
5th semi-annual groundwater sampling event	July 2014
6th semi-annual groundwater sampling event	January 2015
7th semi-annual groundwater sampling event	July 2015
8th semi-annual groundwater sampling event	January 2016
1st quarterly groundwater sampling event	April 2016
2nd quarterly groundwater sampling event	July 2016
3rd quarterly groundwater sampling event	October 2016
4th quarterly groundwater sampling event	January 2017
5-Year Summary Monitoring Report	February 2017
First 5-Year Review	March 2017

Note: Groundwater monitoring memoranda will be submitted within 6 weeks following completion of each groundwater monitoring event.

EXHIBIT - C

CHEVRON BULK PLANT PORT WASHINGTON NARROWS SITE
APPLICABLE RELEVANT AND APPROPRIATE REQUIREMENTS

Chapter 70.105D (Model Toxics Control Act), and Chapter 173-340 WAC (MTCA Regulations)

Chapter 173-204 WAC (Sediment Management Standards)

Chapter 173-XXX WAC (State Environmental Policy Act)

Chapter 90.48 RCW (State Water Pollution Control Act)

Chapter 70.105 RCW (Washington State Hazardous Waste Management Act), and Chapter 173-303 WAC (State Dangerous Waste Regulations)

Chapter 70.95 RCW (Solid Waste Management-Reduction and Recycling)

Chapter 173-201A WAC (Washington Surface Water Quality Standards)

Shoreline Management Act, Chapter 173-14-28 WAC

National Toxics Rule; 40 CFR 131.36.

Chapter 173-160 RCW (Minimum Standards for Construction and Maintenance of Wells)

Occupational Safety and Health Act (OSHA), 29 CFR Subpart 1910.120

Washington Industrial Safety and Health Act (WISHA)

EXHIBIT - D



Toxics Cleanup Program Policy

Policy 840

Resource Contact: Policy and Technical Support Staff *Effective:* August 1, 2005

References: WAC 173-340-840(5)

Revised: September 9, 2005

<http://www.ecy.wa.gov/cim/>

<http://www.ecy.wa.gov/programs/tcp/smw/sedqualfirst.htm>

<http://www.ecy.wa.gov/biblio/0309043.html>

Replaces: Procedure 840

Policy 840: Data Submittal Requirements

Purpose: Contaminated site investigations and cleanups generate a large volume of environmental monitoring data that need to be properly managed to facilitate regulatory decisions and access to this data by site owners, consultants, and the general public. The purpose of this policy is to describe the requirements for submitting environmental monitoring data generated/collected during the investigation and cleanup of contaminated sites under the Model Toxics Control Act (MTCA) and the Sediment Management Standards.

Application: This policy applies to Ecology staff, potentially liable parties, prospective purchasers, state and local agencies, and Ecology contractors that investigate or manage the cleanup of contaminated sites.

1. **Unless Otherwise Specified by Ecology, all Environmental Monitoring Data Generated during Contaminated Site Investigations and Cleanups shall be Required to be Submitted to Ecology in both a Written and Electronic Format.**

Environmental monitoring data include biological, chemical, physical, and radiological data generated during site investigations and cleanups under the Model Toxics Control Act Cleanup Regulation (WAC 173-340) and the Sediment Management Standards (WAC 173-204).

Data generated/collected during site investigations and cleanups conducted under an order, agreed order or consent decree, permit, grant, loan, contract, interagency agreement, memorandum of understanding or during an independent remedial action, are considered environmental monitoring data under this policy.

Data generated/collected for non site-specific studies, site hazard assessments that result in no further action and initial site investigations are not considered environmental monitoring data under this policy.

2. **Orders, Agreed Orders, Consent Decrees, or Permits Issued After the Effective Date of this Policy Shall Include a Condition that Site-Specific Data be Submitted in Compliance with this Policy.**

Reports on such work that do not include documentation that the data have been submitted in compliance with this policy shall be deemed incomplete and a notice of such provided to the

THE UNIVERSITY OF CHICAGO
LIBRARY
540 EAST 57TH STREET
CHICAGO, ILL. 60637

Policy 840 Data Submittal Requirements

submitter. These reports generally should not be reviewed until that information is provided. The assistant attorney general assigned to the site should be consulted in these situations.

3. Reports on Independent Remedial Actions Submitted for Review After October 1, 2005, Under Ecology's Voluntary Cleanup Program Shall Not be Reviewed Until the Data Have Been Submitted in Compliance with this Policy.

Such reports shall be deemed incomplete, and a notice to this effect provided to the submitter.

4. Grants, Contracts, Interagency Agreements or Memoranda of Understanding Issued After the Effective Date of this Policy Shall Include a Condition that Site-Specific Data be Submitted in Compliance with this Policy.

Reports on such work shall not be accepted as complete until the data have been submitted in compliance with this policy. If a payment or transfer of funds is involved in the transaction, the relevant payment or transfer shall be withheld until this requirement has been met.

Example language to include in these documents is attached in Appendix A.

5. Data Generated During Upland Investigations and Cleanups Shall be Submitted Electronically Using Ecology's Environmental Information Management System (EIM).

EIM is Ecology's main database for environmental monitoring data. Proper submission of data through this system meets the requirement of submitting such data in an electronic format. Electronic data shall be submitted to Ecology simultaneously with the accompanying printed report.

Additional information on EIM, including instructions for data submittal, can be found on Ecology's EIM web site at <http://www.ecy.wa.gov/eim/>. TCP's EIM Coordinator also is available for technical assistance to site managers and consultants using EIM.

6. Data Submitted Electronically Using EIM Shall be Checked by the Toxics Cleanup Program's EIM Coordinator Prior to Loading the Data into EIM.

Normally, notice that data have been submitted through EIM will come to TCP's EIM Coordinator. Upon receipt of such a notice the EIM Coordinator should notify the site manager. Similarly, if the Ecology site manager receives a notice of an EIM submittal, they should notify TCP's EIM Coordinator. Upon receipt of the data, TCP's EIM Coordinator reviews the submittal for quality control and officially loads the data into the system.

7. Data Generated During Sediment Investigations and Cleanups shall be Submitted Electronically Using Ecology's Sediment Quality Information System (SEDQUAL).

SEDQUAL is Ecology's data management system for sediment-related data. Proper submission of data through this system meets the requirement of submitting such data in an electronic format. Electronic data shall be submitted to Ecology simultaneously with the accompanying printed report.

8. Sediment Sampling Data Shall be Submitted to Ecology Using the SEDQUAL Data Entry Templates.

At a minimum, the following SEDQUAL data entry templates must be completed:

1. **Reference & Bibliography:** Describes lab reports and publications that relate to the data being entered;
2. **Survey:** Sample number;
3. **Station:** Specifies geographic location of the sediment sample. Sample latitude/longitude coordinates must be entered using the North American Datum of 1983 in U.S. Survey feet (NAD 83, U.S. feet);
4. **Sample:** Describes sample characteristics such as depth; and
5. **Sediment Chemistry:** Reports chemical concentration data in dry weight units.

The following additional templates must also be completed where these measurements/observations have been made:

1. **Bioassay:** Bioassay test results;
2. **Bioassay Control:** Bioassay control test results;
3. **Benthic Infauna:** Species abundance & diversity;
4. **Tissue:** Describes the organism collected;
5. **Bioaccumulation:** Reports tissue chemical concentrations; and
6. **Histopathology:** Reports tissue pathology such as tumors or lesions.

9. Electronic Data Formats Shall be Verified to be Compatible with SEDQUAL Prior to Submittal.

Because SEDQUAL uses ASCII protocol and comma delimited text files, data format verification shall be conducted prior to submittal to Ecology. Data shall be verified by downloading the SEDQUAL database, importing the data into the database, correcting errors, and then exporting the corrected templates.

For additional information on sediment sampling and analysis plan requirements, see Ecology publication 03-09-043 "Sediment Sampling and Analysis Plan Appendix", April, 2003. A copy of this document can be obtained from Ecology's publication office or downloaded from the following web site: <http://www.ecy.wa.gov/biblio/0309043.html>

Additional information on SEDQUAL can be found at:

<http://www.ecy.wa.gov/programs/tcp/smw/sedqualfirst.htm>. TCP's SEDQUAL Coordinator is also available for technical assistance to site managers and consultants using SEDQUAL.

10. Sediment Sampling Data Shall Also be Submitted to Ecology in a Printed Report.

Printed reports shall present the data in both dry weight and total organic carbon normalized units in data tables that compare the results to applicable state regulatory criteria.

Policy 840 Data Submittal Requirements

11. Data Submitted Electronically Using SEDQUAL Shall be Checked by the Toxics Cleanup Program's SEDQUAL Coordinator Prior to Loading the Data into SEDQUAL.

Normally, SEDQUAL data submittals will come to TCP's SEDQUAL Coordinator. Upon receipt of a submittal, the Coordinator should notify the site manager. Similarly, if the Ecology site manager receives a SEDQUAL submittal, they should notify TCP's SEDQUAL Coordinator. Upon receipt of the data, TCP's SEDQUAL Coordinator reviews the submittal for quality control and officially loads the data into the system.

Approved:



James J. Pendowski, Program Manager
Toxics Cleanup Program

Policy Disclaimer: This policy is intended solely for the guidance of Ecology staff. It is not intended, and cannot be relied on, to create rights, substantive or procedural, enforceable by any party in litigation with the state of Washington. Ecology may act at variance with this policy depending on site-specific circumstances, or modify or withdraw this policy at any time.

