City of Portland
Bureau of Development Services
Land Use Review Division

0 SW Fourth Ave. Suite 5000
Portland, Oregon 97201
Telephone: 503-823-7300
TDD: 503-823-6868
FAX: 503-823-5630
www.bds.ci.portland.or.us

September 15, 2004

Gerald Henderson, Chevron (Co-Applicant)
5924 NW Front Avenue
Portland, OR 97210

Martin Cramer, Conoco Phillips (Co-Applicant)
5528 NW Doane Avenue
Portland, OR 97210

Re: Land Use Review LU 04-045492 GW (Cutoff Wall @ Willbridge Terminal)

Dear Gerald Henderson:

The Bureau of Development Services received your application for a Greenway located at 5528-5531 NW Doane Ave. on September 1, 2004. Your case has been assigned to me, Mark Walhood. In order to continue to review your application, I need additional information. Once I receive this information, your application will be considered complete, and I can proceed with a full review of your proposal. Up to this point, your application has been reviewed only to determine if all required information has been submitted. I have not reviewed the application to determine if it meets the relevant approval criteria.

Information Necessary to Complete Application
The following information must be submitted before I can evaluate your proposal:

1. **Landscape Plan**. No landscape plan has been submitted with the application. In order to meet the greenway review approval criteria (Guideline Issues C and E), as well as the landscaping standard (33.440.230), a landscape plan is required. The minimum requirement for greenway landscaping is one tree for every 20 feet of river frontage, one shrub for every 2 feet of river frontage, and living groundcover on areas that are not paved or reveted. Landscape plans should be drawn to scale, and identify the species, size, type (tree vs. shrub vs. groundcover), and location of all plant materials, including proposed methods of irrigation to ensure survival. **Please submit a landscape plan**.

2. **Proposed/final contours on development plans**. Your application package include existing contour and elevation information as required, but the proposed development plans (sheets 5 through 10 of 10) do not identify the proposed final countours (33.440.345.A). The section details and notes about fill materials behind the wall directly conflict with the grades shown on the plans. **Please update sheets 5 of 10 through 10 of 10 to accurately reflect the proposed final elevation contours, including any rip-rap and/or fill on both sides of the cutoff wall**.

3. **Balanced Cut and Fill**. City regulations that will be evaluated during the greenway review, and which must be met prior to approval of any permits, include the balanced cut and fill regulations of title 24 (PCC 24.50.060.F.8). While there is a considerable amount of fill proposed on both sides of the cutoff wall, this activity is not identified on the plans (per item #2 above). Basically, any fill on a site within a floodplain must be matched by a cut elsewhere in the floodplain. It may be wise to address this issue prior to proceeding with the greenway review, since changes made to the project to meet these regulations may

necessitate additional greenway reviews in the future. A staff contact person that may be able to help you understand these regulations is Doug Morgan (BDS Site Development) at 503-823-5824.

Time to Complete Application
The Portland Zoning Code allows you up to 180 days to complete your application. Since the 180-day period began on the day we received the application, the deadline to make your application complete is **March 1, 2005.**

Determination of a Complete Application
I am required to proceed with my review of your application as soon as you submit **any one** of the requested items listed above. If you cannot provide all of the requested information at one time, please include a written statement with each separate submittal indicating that you still intend to provide the additional missing information by **March 1, 2005**. This helps avoid any confusion about the status of your application.

Your application will be approved if it meets the relevant land use review approval criteria. It is your responsibility to document how the approval criteria are met. The items I have listed above will help provide that documentation.

Refusal to Submit Additional Information
If you would like me to proceed with my review using only the information in your original application, you must submit a letter in writing by **September 30, 2004** stating that you refuse to submit additional information. If you refuse to submit additional information, I will proceed with my review of your application on **October 1, 2004**. Please be aware that refusal to submit additional information may result in your application being denied, as the information may be needed to demonstrate that the approval criteria are met.

Voiding of Application
If your application is not completed by **March 1, 2005**, it will be voided, and the City will not refund the application fee. The City's land use review procedures are outlined in Chapter 33.730 of the Zoning Code.

Please write or call me at **503-823-7806** if you have any questions about this letter. Please direct your correspondence to me at the Bureau of Development Services, Suite 4500, 1900 SW Fourth Avenue, Portland, OR 97201. If you deliver the requested material in person, please bring it to the fourth floor receptionist at 1900 SW Fourth Avenue. Please label all correspondence and materials you submit with the case number LU 04-045492 GW.

Sincerely,

Mark Walhood, Planner
Land Use Review Division

cc: Port of Portland (Property Owner - Lessee)
Kevin Schleh, SAIC (in-person @ 9/16/04 meeting)
Doug Morgan, BDS Site Development
Application Case File

Portland Term 0605
Gen. Corres.

Brooks, Suzanne

From: Ashton, David
Sent: Tuesday, October 12, 2004 1:12 PM
To: 'schleh@saic.com'
Cc: Charles Lambert (charliel@chevrontexaco.com); derrick.d.vallance@conocophillips.com; Brooks, Suzanne; McKenna, James (Jim); Summers, Anne
Subject: Port Review of Application to Implement Source Control Remedy on Port properties at Willbridge Terminal (usc\willbridge\chevron conoco cor

Kevin,

Thanks for the package of materials relating to the source control remedy proposed at the Chevron and Conoco Phillips Willbridge facilities.

In order for us to perform our review and get back to you and the regulatory agencies, we would like copies of the following additional materials:

1. e-copy of construction drawings, landscape plans and other specifications (on CD if undeliverable by email);

2. the consent order under which this work is being done;

3. the DEQ source control decision memorandum, record of decision and the RD/RA workplan;

4. documentations reflecting Clean Water Act and Rivers and Harbors Act and equivalent state law compliance;

5. documentation reflecting Endangered Species Act and equivalent state law compliance;

6. access agreement with DSL;

7. land use review application package to City of Portland;

8. any prior notifications or requests for Port approval of this project under Chevron and Conoco Philips leases.

If it helps, we would be happy to receive e-copies of these materials.

Once we get these materials and have an opportunity to review all of this, we will get back to you and the regulatory agencies.

David

David Ashton
Port of Portland
Work Tel: 503-944-7090
Work Cell: 503-312-7635
Fax to PC: 503-548-5741
Fax: 503-944-7038
Work Email: ashtod@portptld.com
Work Web: portofportland.com
Home Tel: 503-670-7331

Confidential: Attorney-client privileged, work product, and otherwise protected from disclosure under Oregon and federal law.

Portland Term #0605
Gen Correspondence

PORT OF PORTLAND

October 14, 2004

Mr. John Sherman
ConocoPhillips Company
5528 NW Doane Avenue
Portland, OR 97210

SENT VIA CERTIFIED MAIL

Re: Ground Lease - Port of Portland and ConocoPhillips Company
Port Agreement No.: 89-035

Dear Mr. Sherman:

The Port of Portland has received a letter from Kevin Schleh, of Science Applications International Incorporated (SAIC), dated October 1, 2004, concerning planned construction activity on Port of Portland property leased to Chevron USA, Inc. and ConocoPhillips Company.

The letter states that plans and specifications for installation of a sheet pile wall as a source control measure are being submitted in accordance with the ground lease between the Port and Chevron. The letter does not state that such plans are submitted as required under the ConocoPhillips lease referenced above (Conoco Lease).

This letter is to remind you of several notification requirements of the Conoco Lease and to request compliance with such requirements in connection with the sheet pile wall project.

Amendment No. 1 to Ground Lease and Consent to Assignment (a copy of which is attached), executed when the Lease was assigned by UNOCAL to Tosco Corporation, incorporated a number of environmental provisions in the Conoco Lease. Section 7.2.10 requires the Lessee to "give the Port advance notice before beginning any investigatory, remediation or removal procedures." The Port has the right to approve or disapprove of such procedures and the companies conducting same. This Section also provides that "Lessee shall not initiate any risk assessment based remediation or closure without the prior written consent of the Port, which consent may be withheld or conditioned in the Port's sole discretion."

Section 7.3 requires the Lessee to notify the Port in several specified circumstances, including notification of any Hazardous Substance Release and notification of any notice or communication from a governmental agency directed to Lessee and relating to any Hazardous Substance Release. Though the Port has received the October 1, 2004 letter from SAIC, and notices from other agencies required to be sent as part of their processes, we have not been kept informed concerning the investigation which resulted in the request to install the sheet pile wall.

Please also note that the Conoco Lease has the same requirements as the Chevron lease – that the Port be notified of any communications from governmental entities and that the Lessee must submit plans and specifications concerning any construction at least 45 days prior to

commencement of the construction. Under the Conoco Lease, the Port then has 45 days to review such plans.

David Ashton, Assistant General Counsel for the Port, has responded to the notification letter from SAIC by requesting copies of related materials; a copy of that e-mail is enclosed for your reference. Please ensure that appropriate documentation is provided to the Port, in accordance with the notification provisions of the Conoco Lease discussed above.

If you have any questions, please feel free to call me at (503) 944-7509 or David Ashton at (503) 944-7090.

Thank you for your prompt attention to this matter

Sincerely,

Suzanne Brooks
Property Manager
Property & Development Services

Enclosures

c: John Sherman, via regular mail
Marty Cramer, ConocoPhillips
Jerry Johnston, ConocoPhillips
Kevin Schleh, SAIC

Portland Term 0005
Permits

PORT OF PORTLAND

October 21, 2004

Mr. Mark Walhood
City of Portland, Bureau of Development Services
Land Use Services Division
1900 SW Fourth Avenue, Suite 5000
Portland, OR 97201

SENT VIA FACSIMILE

Re: Comments on the Chevron and Conoco Phillips Land Use Review Application, Case File Number LU 04-045492 GW

Dear Mr. Walhood:

The Port of Portland appreciates the opportunity to comment on the pending application of Chevron Products Company and Conoco Phillips Company to the City of Portland, Case File Number LU 04-045492 GW, for a determination of applicable land use requirements. As the land owner of the two properties affected by this project, the Port is substantially interested in this matter. While the Port welcomes action at the properties by the responsible parties to address long-term seepage of petroleum product contamination from the river bank into Portland Harbor, the Port nonetheless has some concerns.

The Port's first concern is the apparent lack of detailed definition of the proposed project. The Port was first formally put on notice of this project by its tenants on October 1, 2004. Under its leases, the Port has a variety of review, comment and approval rights. The Port has requested more detail on the project, including various background documents. As of the deadline for comments, the Port has not yet received those documents. It may be that the additional forthcoming information will allay all or some of the Port's concerns. Clearly, whether the proposed project is a temporary or permanent structure in the Port's land, the tenants must get prior Port permission for the action.

It is not clear from the SAIC application dated August 25, 2004 obtained from the City (the "SAIC Application"), specifically how the proposed project meets the overall purpose of the Greenway Overlay Zone. Beyond it not being clear if the development and fill project is landward or riverward of the Greenway setback, it is not clear how the sheet pile wall as designed avoids a detrimental impact upon the use and functioning of the abutting lands owned by the Port. As configured, the wall certainly interferes with use of the riverbank. This, of course, is of less concern to the Port if the containment system is merely an interim contamination remedy with long term restoration of the land

to its original condition occurring by the termination of the leaseholds. Again, that is not clear.

In addition, while the containment of seepage of petroleum products certainly brings the natural habitat of lands at this location in the river up to a non-contaminated condition, it is not clear how the project "enhances" that natural habitat. Again, that may become apparent once additional information is provided. For similar reasons, we question the aesthetics of the construction. The applicants need to provide more detail on how what is essentially a high interlocked-steel wall at the line of ordinary high water, armored with rip-rap and minimum natural cover satisfies the aesthetically pleasing environment criterion. The applicants might look to some of the actions taken at the McCormick & Baxter barrier wall site for approvable examples of how to effect enhancement or scenic and habitat values, bankline reconfiguration and vegetation diversity.

With regard to the criterion of no significant loss of biological productivity in the river, the Port would be interested in reviewing the findings of the natural resource services. The existing Holbrook Trench recovery system would appear to be a potential fish stranding feature. Thus, any approvable development and fill should include the proper removal and filling of the trench system using a construction methodology that avoids short and long-term interference with biological productivity. In addition, any use of rip-rap must be demonstrated to be fish-friendly.

As an owner of marine terminals and other properties on the river, the Port is also concerned to ensure applicable flood management requirements are met. This would include compliance with balanced cut and fill requirements. To the extent that filling creates a need to create a cut in the Port's properties at these locations, the lessees will need to get the Port's permission.

Regarding comments on discrete aspects of the SAIC Application:

The application mentions both Chevron Products Company and Chevron Texaco as applicant or lessee. Since the lessee of the Chevron site is Chevron U.S.A., Inc., the application and determination is probably more appropriately for Chevron U.S.A., Inc. Chevron Products Company's connection to the property on which the project is proposed is not clear.

Since the proposed project impacts both land above and below the property boundary at the line of ordinary high water, the Department of State Lands should also be identified as an owner.

It is not clear from the proposal how local transportation regulations are satisfied. Neither is it clear how stormwater management and dewatering, if any, of the work areas will be handled.

The Port of Portland appreciates the opportunity to provide comments on this application. If you have any questions please feel free to call me at (503) 944-7509. We reserve the right to withdraw any of these comments once additional information is forthcoming from our lessees.

Sincerely,

Suzanne Brooks
Property Manager
Port of Portland

c: Mark Walhood, via e-mail
Martin A. Cramer, Conoco Phillips
Gerald S. Henderson, Chevron Products Company

Portland Term 0609
Reg. Comm.

Cramer, Marty:

From: Scott Miller [smiller@deltaenv.com]

Sent: Friday, October 22, 2004 10:24 AM

To: O'Regan, Gerald (GRGN); Cramer, Marty:; OsbornS@kindermorgan.com

Cc: gkoschal@redhillsenv.com; Kelly Kline

Subject: October 21, 2004 meeting with DEQ regarding the Willbridge Terminal Group RI Report ** PRIVILEGED AND CONFIDENTIAL **

Hello Everyone,
Jill Kiernan, DEQ project manager for the Willbridge Terminal requested a brief meeting to discuss their comments to the Final Remedial Investigation (RI) report. Jill Kiernan (DEQ), Anna Coates (DEQ), Kelly Kline (Delta), and Scott Miller (Delta) attended this meeting. The Final RI report for the Willbridge Terminals was submitted to the DEQ on August 1, 2003. DEQ stated in the meeting today that they are ready to conditionally approve the RI report. They will be requesting the submittal of an addendum to the RI report to address the following issues/data gaps that the DEQ identified during the review of the final RI report; these DEQ identified issues/data gaps discussed during the meeting today are:

- Fate and Transport - groundwater migration. The DEQ stated that they would like more discussion on the vertical delineation of contamination. They wanted to know if the basalt layer had been effected by contaminates and more discussion on vertical gradients. The DEQ stated that this item could be address with the site data that we already have and also regional data on groundwater flow and vertical migration studies. The DEQ also requested a geological cross-section for the site that showed monitoring well screen intervals. DEQ stated that they would like more discussion on the horizontal migration of contamination from the site, specifically asking about groundwater 'flux' to the river. Delta stated that migration of groundwater near the Willamette River is discussed, in part, in the source control evaluation. The source control evaluation and feasibility study for the Willbridge Terminals are discussed below.
- Locality of Facility - DEQ requested more discussion on the vertical limits of the Locality of Facility. This request ties into the vertical delineation request by DEQ (above) with DEQ asking again if site contamination affects or could affect the Columbia River Basalt layer. DEQ also stated that the Certain Teed facility (former GS Roofing site) east of the Kinder Morgan terminal was data gap. DEQ was looking for clarification if contamination from the Willbridge Terminals is present on the Certain Teed facility (former GS Roofing site) above risk-based screening levels.
- Exposure to Surface Seeps - DEQ request further clarification regarding potential exposure to surface seeps for upland receptors. Delta stated the proposed cut-off wall currently being designed by Chevron should address any remaining exposure to seeps with petroleum impacts, and that this is presented in the source control evaluation.
- Saltzman Creek / Wetlands area - DEQ requested additional information regarding Saltzman Creek and the adjacent wetlands area; specifically, they asked if contaminated groundwater discharges to Saltzman Creek?
- Air Exposure Pathway Concerns (indoor air/occupied buildings) - DEQ asked if the contamination at the site possess a potential, immediate exposure risk to occupants at the site? Potential for interim exposure risk (exposure before final site remedy)? DEQ also asked about the potential for methane gas exposure, stating that methane gas was detected at the Chevron Terminal in the area of the ethanol study.
- MTBE Sampling - DEQ stated that MTBE sampling was done at the Chevron Terminal and that they would request groundwater sampling for MTBE during the next semi-annual groundwater sampling event. The next semi-annual groundwater sampling event is scheduled for March 2005.

DEQ stated sufficient data was available to address with issues/data gaps (except gw sampling for MTBE) without additional site investigation or sampling. A RI addendum would be a clarification document.

Following the discussion of the final RI report, we discussed the source control evaluation and the feasibility study (FS). A FS work plan was submitted to the DEQ in 2001 and Delta stated that the revised source control evaluation would be ready for submittal to the DEQ in approximately one month. It was agreed that revised

source control evaluation would be submitted to the DEQ, and any comments by DEQ to the source control evaluation would be incorporated into the FS report. A FS scoping document was also discussed, allowing Willbridge Terminals Group to provide details to the DEQ on the scope and volumes of areas to be address in the FS before the preparation of the full FS report. Based on this discussion, the following schedule was discussed:

Tentative Schedule

1. Within two weeks - The DEQ stated they they anticipated issuing a letter with conditional approval of the Final RI report and requesting and addendum to the Final RI report.
2. November 2004 - The revised Source Control Evaluation report for the Willbridge Terminal would be submitted to the DEQ.

January 2005 - Submittal of the RI Addendum.

3. February 2005 - Meeting with DEQ to discuss the revised source control evaluation, MTBE in groundwater sampling plan, and the scope of the FS Scoping document.
4. March 2005 - Semi-Annual groundwater monitoring and sampling, including the DEQ requested MTBE sampling.

This is all very exciting; DEQ's approval of the Final RI report (verbal, with conditions) and a schedule for the future activities including scoping of the FS. The other exciting element of this meeting is that DEQ generally agrees with the risk assessment and preliminary hot-spot evaluation presented in the RI report, indicating that the scope of the FS may be limited to the source control activities currently underway, continued SPH removal, and limited surface soil removal.

Willbridge Terminals Group Update Meeting?

Now that we have good idea of the scope and schedule for future activities at Willbridge, it may be a good time to have an update meeting. Steve Osborn and Gerald O'Regan, do you have plans to be visiting Portland anytime soon? Anyone attending the Northwest Environmental Conference (www.nwec.org) on November 16th and 17th? Please let the group know dates in your schedule that would be good for a Willbridge Terminal Group meeting. Gerry or Gerald, please forward this email to Charlie Lambert if appropriate.

Thank you everyone.

Scott Miller
Delta - Tigard, Oregon
Phone: 503/639-8098

R. Scott Miller
Delta Environmental Consultants, Inc.
Phone: 503.639.8098 or 800.477.7411
e-mail: smiller@deltaenv.com

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Perm From 0608 Permits

PH: Chava Willbridge

RECEIVED
NOV - 1 2004
DEPT OF ENVIRONMENTAL QUALITY
NORTHWEST REGION

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
525 NE Oregon Street
PORTLAND, OREGON 97232-2737

Refer to NOAA Fisheries No.:
2004/01072

October 28, 2004

Mr. Lawrence C. Evans
Chief, Regulatory Branch
Portland District, U.S. Army Corps of Engineers
Attn: CENWP-OP-GP (Ms. Corrie Veenstra)
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Nonconcurrence, Request for Formal Consultation, and Request for Additional Information on the Issuance of a Permit to Chevron Product Company for a Project to Install a Sheet Pile Wall Along the Willamette River, Willamette River Basin, Multnomah County, Oregon (Corps No.: 200400682)

Dear Mr. Evans:

This letter acknowledges NOAA's National Marine Fisheries Service (NOAA Fisheries) receipt of your September 20, 2004, letter requesting initiation of informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) and essential fish habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This consultation concerns the possible effects of issuing permits under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act to Chevron Products Company for installing a sheet pile wall and collection trench as source control measures for separate phase hydrocarbons (SPH) that are migrating to the Willamette River on five species of Willamette River salmon listed under the ESA as threatened: Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*), Lower Columbia River (LCR) Chinook salmon, UWR steelhead (*O. mykiss*), LCR steelhead, Lower Columbia River (LCR) chum salmon, and LCR coho salmon (proposed for listing under the ESA) (Enclosure), or EFH designated for starry flounder, and Chinook and coho salmon. The proposed action would occur at the Chevron Willbridge Distribution Center and Conoco Phillips Terminal, at rivermile 7.8 along the west bank of the Willamette River. The property is owned by the Port of Portland and the Oregon Division of State Lands, and is leased to Chevron and Conoco Phillips.

Based on information provided by the U.S. Army Corps of Engineers (Corps), NOAA Fisheries does not concur with the Corps' finding that the proposed project is not likely to adversely affect the subject species for the following reasons: (1) The proposed action will include activities below the ordinary high water level of the Willamette River, which is reasonably certain to be used by the subject species during the proposed activities; and (2) the applicant proposes to drive

COP0019257

a 265-foot long sheet pile wall into contaminated soils, which may increase the release rates of the contaminants into the Willamette River.

Although the proposed action may benefit the listed fish species over the long term, during the short term the proposed construction of a sheet pile cutoff wall and SPH collection trench are reasonably certain to adversely affect UWR Chinook salmon, UWR steelhead, LCR Chinook salmon, LCR steelhead, LCR chum salmon, and LCR coho salmon. Accordingly, NOAA Fisheries requests that the Corps initiate formal consultation for this action.

NOAA Fisheries has not received all of the information necessary to initiate formal consultation on the subject action as outlined in the regulations governing interagency consultations for ESA at 50 C.F.R. section 402.14(c) and for EFH at 50 C.F.R. 600.920(g). Information provided in the permit application does not provide sufficient information describing the proposed action and the effects of the action on the subject species.

To complete the initiation package, please provide the following information:

1. How will SPH be stopped from migrating around the sheet pile wall?
2. The document does not address dissolved phase hydrocarbons. Do dissolved phase hydrocarbons migrate from the site into the Willamette River? If so, how are they being addressed?
3. Will the old SPH recovery system be removed?
4. Groundwater analytical data are referenced in a variety of tables (through Table 9) but are not provided in the submittal. Please provide these tables.
5. Figure 8, as described in the text, was not provided.
6. It is not possible to read the erosion control information on sheet 10. Please provide a larger copy of this sheet, or provide a description of the erosion control measures that are proposed for the site. Will an erosion control plan be developed? Who is responsible for the development and implementation plan? Who will be responsible for the implementation plan during construction?
7. Sheet 2 of 10 mentions a waterstop seal on top of the sheet piling. What is the sealant, and what is its toxicity to aquatic organisms?
8. What is the source of the fill material?
9. Is the gravel construction entrance road an existing facility at the site?
10. Will absorbent booms remain in place in the Willamette River after project construction?
11. What monitoring is proposed to ensure the effectiveness of the proposed remedy at stopping the release of SPH and dissolved phase hydrocarbons into the Willamette River? How is success defined, and what concentrations would necessitate additional action on the applicant's part?
12. The problem has been defined as the release of SPH at low river flows. Is it possible that SPH is still being released at high river flows, but just not observable because of increased turbidity and turbulence?

COP0019258

Although NOAA Fisheries is asking to complete this consultation by issuing a biological opinion, it is the lead action agency's duty to identify likely effects, to decide whether consultation is required, and to ensure that its actions are not likely to jeopardize listed species or adversely modify critical habitats. As a reminder, the ESA requires that after initiation of formal consultation, the Federal lead action agency may not make any irreversible or irretrievable commitment of resources that limit future options. This ensures that Federal agency actions do not preclude the formulation or accomplishment of reasonable and prudent alternatives that avoid jeopardizing the continued existence of endangered or threatened species or destroying or modifying their critical habitats.

The MSA at 50 C.F.R. Part 600 Subpart K requires the Corps to also consult on activities that may adversely affect EFH designated in Federal fishery management plans. The proposed project area has been designated as EFH for Chinook salmon, coho salmon, and starry flounder. Because the proposed project is reasonably likely to adversely affect the species listed above or critical habitats, we assume it also may adversely affect EFH. However, MSA consultation requirements can be satisfied using ESA procedures if your consultation request had a section identified as an EFH assessment and included the following analyses: (1) Effects of the proposed project on EFH, the managed species, and associated species, such as major prey species, including affected life history stages; (2) the Corps' views regarding the effects of the action on EFH; and (3) proposed mitigation, if applicable. If the information supplied with your request for concurrence did not include an EFH assessment, please submit one with your request for formal ESA consultation.

If you have questions about this letter or how to continue with the consultation, please call Dr. Nancy Munn, in the Willamette Basin Habitat Branch of the Oregon State Habitat Office at 503.231.6269.

Sincerely,

Michael P. Tehan
Director, Oregon State Habitat Office
Habitat Conservation Division

cc: Helen Hillman, NOAA Office of Response and Restoration
James Anderson, Oregon Department of Environmental Quality
Eric Blischke, US Environmental Protection Agency
Chip Humphrey, US Environmental Protection Agency

Enclosure: Endangered and Threatened Pacific Salmon and Steelhead Under NOAA's National Marine Fisheries Service's Jurisdiction in Oregon

COP0019259

Enclosure

Endangered, Threatened, and Proposed Species Occurring under NOAA's National Marine Fisheries Service's Jurisdiction in Oregon

(T = Threatened, E = Endangered, CH = Critical Habitat, ESU = Evolutionarily Significant Unit)

Listed Species:

Coho Salmon (*Oncorhynchus kisutch*)
- -S. Oregon/N. California Coasts ESU (T)(CH)

Chinook Salmon (*O. tshawytscha*)
- -Snake River Fall-run ESU (T)(CH)
- -Snake River Spring/Summer-run ESU (T)(CH)
- -Lower Columbia River ESU (T)
- -Upper Willamette River ESU (T)
- -Upper Columbia River Spring-run ESU (E)

Chum Salmon (*O. keta*)
- -Columbia River ESU (T)

Sockeye Salmon (*O. nerka*)
- -Snake River ESU (E)(CH)

Steelhead (*O. mykiss*)
- -Upper Columbia River ESU (E)
- -Snake River Basin ESU (T)
- -Lower Columbia River ESU (T)
- -Upper Willamette River ESU (T)
- -Middle Columbia River ESU (T)

Proposed for Listing:

Coho Salmon (*O. kisutch*)
- -Lower Columbia River/SW Washington ESU
- -Oregon Coast ESU (T)

CITY OF PORTLAND
BUREAU OF DEVELOPMENT SERVICES
1900 SW Fourth Avenue, Suite 5000
Portland, OR 97201 **P524**

Land Use Review Notice Enclosed
Case # LU 04-045492 GW

16

PORTLAND OR 97204

U.S. POSTAGE
0093
H METER 456199

APPLICANT
MARTIN CRAMER
CONOCO PHILLIPS
5528 NW DOANE AVE
PORTLAND OR 97210

City of Portland
Bureau of Development Services
Land Use Services Division

1900 SW Fourth Ave. Suite 5000
Portland, Oregon 97201
Telephone: 503-823-7300
TDD: 503-823-6868
FAX: 503-823-5630
www.bds.ci.portland.or.us

Date: October 29, 2004

To: Interested Person

From: Mark Walhood, City Planner II - Title 33 Team
(503) 823-7806

NOTICE OF A TYPE II DECISION ON A PROPOSAL IN YOUR NEIGHBORHOOD

The Bureau of Development Services has approved a proposal in your neighborhood. The reasons for the decision are included in this notice. If you disagree with the decision, you can appeal it and request a public hearing. Information on how to appeal this decision is listed at the end of this notice.

CASE FILE NUMBER: LU 04-045492 GW

GENERAL INFORMATION

Applicants: Gerald S. Henderson (503) 221-7714
Chevron Products Company
5924 NW Front Avenue
Portland, Oregon 97210

Martin A. Cramer (503) 248-1517
Conoco Phillips
5528 NW Doane Avenue
Portland, Oregon 97210

Consultant/Contact: Kevin Schleh, R.G. (503) 243-2070
Science Applications International Corporation (SAIC)
1220 SW Morrison Street, Suite 500
Portland, Oregon 97205

Property Owners: Port of Portland (Leased to Chevron USA Inc.)
P.O. Box 3529
Portland, Oregon 97208

Port of Portland (Leased to Tosco Corp.)
Attn.: Dutton, R S DC-48
P.O. Box 52085
Phoenix, Arizona 85072

Site Address: 5528 WI/ and 5531 WI/ NW Doane Avenue

Legal Descriptions: Township 1 North, Range 1 East, Section 18, Taxlot 900 with 2.65 acres land only; Township 1 North, Range 1 East, Section 18, Taxlot 800 with 2.91 acres land only

Tax Account Nos.: [redacted], [redacted]
State ID Nos.: 1N1E18C 00900, 1N1E18C 00800
Quarter Section: 2423

Neighborhood:	Northwest Industrial, contact Ann Gardner at (503) 417-2041.
Business District:	Northwest Industrial Business Association, contact Paul Pope at (503) 778-6771.
District Coalition:	Neighbors West/Northwest, contact David Allred at (503) 223-3331.
Zoning:	**IHi** (Heavy Industrial base zone with the "i" or River Industrial Greenway overlay zone), **Guild's Lake Industrial Sanctuary plan district**
Case Type:	**GW** (Greenway Review)
Procedure:	**Type II**, an administrative decision by Bureau of Development Services Staff that can be appealed to the City of Portland Land Use Hearings Officer.

Proposal: Chevron and Conoco Phillips (hereinafter "the applicants") are proposing to install a sheet pile wall as a source control measure under State of Oregon Department of Environmental Quality (DEQ) Consent Order WMCSR-NWR-94-06. The area of work occurs along the riverbank at the Chevron Willbridge Distribution Center, on land leased to the applicants by the Port of Portland and the Oregon Division of State Lands. The purpose of the project is to mitigate potential migration pathways for groundwater seeps to the Willamette River by constructing a barrier wall and installing an extraction system on the landward side of the wall to remove separate phase hydrocarbons (SPH). Potential migration pathways include the alignment of an abandoned sewer and the former Holbrook Slough. The applicants propose to replace an existing recovery system with the new sheet pile wall and SPH recovery system that has been designed to encompass the mouth of the historic Holbrook Slough and for continuous operation that will not be affected by river flow stages.

The proposed sheet pile wall will consist of two sections, with one extending between bends A and C (northern section), and another extending between bends D and E (southern section). The northern section would be constructed of 25 foot long sheet piles along a 160 foot long alignment. The sheets would be driven from an approximate surface elevation between 14 and 20 feet, through the dredge sand fill, and would be embedded in approximately 15 feet of native silt with a bottom elevation of -5 feet. The top of this section of the wall would be at an elevation of 20 feet, with the sheet piles extending approximately 7 feet above the ground surface between bends A and B, and gradually matching the existing grades between bends B and C. The southern wall section would be constructed of 20 foot long sheet piles in a 105 foot long alignment. The top of the sheets would be driven to the ground surface at an elevation of 16 feet, through the dredge sand fill and embedded in the native silt that would be encountered at an elevation between 11 and 4, and would have a bottom elevation of -4 feet.

Collection trenches are proposed for both sections of the wall, including vaults and sumps, drainage pipes, and groundwater release conduits. A trench would be excavated on the up gradient side of both wall sections to intercept SPH and impacted groundwater migrating through the dredge sand fill towards the Willamette River. The trenches will be sloped towards a collection sump that will have two 12-inch diameter PVC extraction sumps that will be completed at ground surface with 24-inch concrete vaults. A 4-inch diameter perforated pipe will be placed in the bottom of the trench to enhance drainage towards the extraction sumps, and the trenches will be backfilled with sand to two feet below ground surface. Three 4-inch diameter PVC maintenance sumps will be attached to the perforated drainage pipe at various distances from the extraction sumps that will be completed at finished ground surface with 12-inch concrete vaults. Groundwater release conduits will be installed in the collection sumps to provide a drainage pathway that may be opened at some time in the future for post-remediation monitoring. The recovery systems would be connected to a redundant network of effluent pipelines, that will allow the capability for groundwater treatment at compounds located at either the Chevron or Conoco Phillips terminal.

Grading will include an estimated 272.25 cubic yards of "cut", and 299.38 cubic yards of "fill". Fill will be placed to match the top elevation of the northern wall section of 20 feet, and will cover the existing rip rap slope to complete it as a flat area. The down slope side of the protruding

sheet pile wall will be covered with a multi-dimensional rip rap, with the base of this fill section founding on the slope between the base of the wall and the 13 foot elevation contour. Erosion control materials and methods have been proposed, and an area of landscaping has been proposed at the landward side of the southern wall section. Because the project involves alterations to development and grading within and riverward of the Greenway Setback, a Greenway Review is required (33.440.310).

Relevant Approval Criteria: In order to be approved, this proposal must comply with the approval criteria of Title 33. The approval relevant criteria are:

- **33.440.350.A-H** - Greenway Review Approval Criteria
- *Willamette Greenway Design Guidelines*

ANALYSIS

Site and Vicinity: The project site is located on two adjacent riverfront parcels, where the site alterations are proposed to be located on an existing riverbank. The site also includes areas riverward of the private property, on land owned by the Oregon Division of State Lands (DSL). The property is developed with various docks and pipelines which are used to transport fuels to storage tanks (tank farms) on the opposite side of NW Front Avenue. The properties are within an area called the Willbridge Terminal, in the Northwest Industrial District, between NW St. Helens Road and the Willamette River. The Willbridge Terminal is a conglomerate of petroleum companies, with shared docks, pipes, and tank facilities.

The area under consideration in this review is located entirely riverward of the greenway setback, and consists of a relatively steep rip rap bank east and south of an existing paved area at the head of the Chevron dock, and a more gradually-sloping rock and sand slope between the Chevron and Tosco docks. With the exception of a small area of landscaping at the westernmost edge of the bank, the area is devoid of vegetation. A narrow concrete pathway, containment booms extending out into the river, and various subsurface structures and utilities are the only development in this area. The nearby dock structures to the north and south of the project area are supported by wood and steel pilings. The dock structures themselves and other upland developments and paved areas are separated from the bank by chain link security fencing.

Other development in the vicinity is primarily industrial in use, including the other tank farms, docks, and petroleum loading and distribution facilities within the Willbridge Terminal complex. Northwest Front Avenue abutting the site is a paved, two-way roadway with curbing, sidewalks, and limited on-street parking.

Zoning: The site is zoned Heavy Industrial (IH) with River Industrial Greenway ("i") overlay zoning. The site is also within the boundaries of the Guild's Lake Industrial Sanctuary plan district. The IH zone is one of the three zones that implement the Industrial Sanctuary designation of the Comprehensive Plan. The IH zone provides land where a wide variety of industrial uses may locate, including those not desirable in other zones due to their objectionable impacts or appearance. The Guild's Lake Industrial Sanctuary plan district seeks to foster the preservation and growth of this well-established industrial area, while preventing the expansion of inappropriate nonindustrial uses.

The River Industrial Greenway overlay zone encourages and promotes the development of river-dependant and river-related industries which strengthen the economic viability of Portland as a marine shipping and industrial harbor, while also preserving and enhancing the riparian habitat and providing public access where practical. Although the entire site is subject to all applicable regulations, only the portion of the site where the construction is to occur is being considered in this review. Any alterations to existing development and excavations and fills, within or riverward of the greenway setback, must be evaluated through the Greenway Review process.

Land Use History: City records indicate that prior land use reviews include the following:
- *GP 17-83*: Approved Greenway Review for a concrete float/boom system for oil spill containment;

- *GP 27-89*: Greenway Review for a truck repair building that was approved with conditions;
- *LUR 00-00003 GW HS*: Greenway and Hazardous Substance Reviews to install an intercompany manifold pipeline that was approved with conditions;
- *LUR 00-00656 GW HS*: Greenway and Hazardous Substance Reviews to install a marine vapor recovery system that was approved with conditions;
- *LUR 01-00517 GW*: Greenway Review for a sheet pile wall containment facility just upstream from the project area that was approved with conditions requiring additional landscaping at the site; and
- *LU 02-150064 AD*: Approved Adjustment related to upgrades to nonconforming development.

Agency Review: A "Notice of Proposal in Your Neighborhood" was mailed **September 30, 2004.** The following Bureaus have responded:

The *Bureau of Environmental Services* (BES) has reviewed the proposal and provided informational comments, but no requested conditions of approval. Staff from BES notes that the site is located in an alcove along the bank of the Willamette River, and that studies have shown that such areas provide important off-channel habitat for fish. It's possible that fish are using this site, despite heavy industrial traffic along the docks. Often, fish use such habitats at night, when human activity is reduced. Staff from BES have suggested that the applicant consider placing the plantings at the southeastern corner of the site, adjacent to the existing vegetation to the south that were required during the earlier sheet pile wall project. This would result in more ecological benefit from the plantings, since they would be enhancing an area of existing vegetation. Staff from BES has also suggested that the applicant consider improving habitat conditions along the bank of the Willamette River, through bioengineering, to add vegetation and create near-shore refugia. Such measures can significantly improve fish habitat, by increasing shade and providing a source of leaf litter, among other benefits. Staff from BES notes that even heavily used industrial areas can serve as important fish habitat during non-working hours. Exhibit E.1 contains staff contact and additional information.

The *Development Review Division of Portland Transportation* has reviewed the proposal for conformance with adopted policies, street designations, applicable Title 33 approval criteria, Title 17, and for potential impacts upon transportation services. The Development Review Division of Portland Transportation has no objection to approval of the project. Exhibit E.2 contains staff contact information.

The *Fire Bureau* has reviewed the proposal for access and water issues including travel distance to hydrants, water flow requirements, and other Fire Life Safety concerns, and has no objections or requirements at this time. Exhibit E.3 contains staff contact information.

Neighborhood Review: A "Notice of Proposal in Your Neighborhood" was mailed **September 30, 2004**. Two written responses were received. The Northwest Industrial Neighborhood Association Board of Directors has reviewed the proposal and voted to support the request. The Port of Portland, who leases the land to Chevron and Conoco-Phillips, has written a letter voicing several concerns. The Port has expressed concern about the level of detail provided by the applicant, and about how the project meets the overall purpose of the Greenway overlay zoning. Specifically, the Port has questioned the aesthetics of the construction, as well as potential functional impacts of the project in terms of habitat values, riverbank configuration, vegetation diversity, biological productivity, and flood management. The Port also notes that, as the lessor of the private property under consideration, the lessees are responsible for gaining any necessary Port approvals pursuant to their lease.

ZONING CODE APPROVAL CRITERIA

33.440.350 Greenway Review Approval Criteria
The approval criteria for a greenway review have been divided by location or situation. The divisions are not exclusive; a proposal must comply with **all** of the approval criteria that apply to the site. A greenway review application will be approved if the review body finds that the applicant has shown that all of the approval criteria are met.

A. **For all greenway reviews.** The Willamette Greenway design guidelines must be met for all greenway reviews.

Findings: The Willamette Greenway Design Guidelines address the quality of the environment along the river and require public and private developments to complement and enhance the riverbank area. The Design Guidelines are grouped in a series of eight Issues:

- Issue A. Relationship of Structures to the Greenway Setback Area
- Issue B. Public Access
- Issue C. Natural Riverbank and Riparian Habitat
- Issue D. Riverbank Stabilization Treatments
- Issue E. Landscape Treatments
- Issue F. Alignment of Greenway Trail
- Issue G. Viewpoints
- Issue H. View Corridors

A complete description of the Design Guidelines and their applicability is provided in pages 45-81 of the *Willamette Greenway Plan.* Findings for the individual guidelines are included below.

Issue A. Relationship of Structures to the Greenway Setback Area: This issue "applies to all but river-dependent and river-related industrial use applications for Greenway Approval, when the Greenway Trail is shown on the property in the *Willamette Greenway Plan.*" These guidelines call for complementary design and orientation of structures so that the greenway setback area is enhanced:

1. Structure Design
2. Structure Alignment

Issue B. Public Access: This issue "applies to all but river-dependent and river-related industrial use applications for Greenway Approval, when the Greenway Trail is shown on the property in the *Willamette Greenway Plan.*" These guidelines call for integration of the Greenway Trail into new development, as well as the provision of features such as view points, plazas, or view corridors:

1. Public Access
2. Separation and Screening
3. Signage
4. Access to the Water's Edge

Findings: There is no Greenway Trail designation on the private property at the site. The Greenway Trail designation runs within the right-of-way in NW Front Avenue adjacent to the site, and NW Front Avenue is improved with a continuous paved public sidewalk on the east side of the street. Also, the site is developed with an industrial use that includes docks and pipelines used for the transfer of petroleum products from ships to storage tanks on the west side of NW Front Avenue. For these reasons, guideline issues A and B do not apply.

Issue C. Natural Riverbank and Riparian Habitat: This issue "applies to situations where the river bank is in a natural state, or has significant wildlife habitat, as determined by the wildlife habitat inventory." These guidelines call for the preservation and enhancement of natural banks and areas with riparian habitat:

1. Natural Riverbanks
2. Riparian Habitat

Findings: The *Lower Willamette River Wildlife Habitat Inventory* (*LWRWHI*) designated the site (Site 15.6a) in 1986 as having a Rank II habitat designation, due to the heavy industrial development on the uplands. Since that time, however, multiple land use reviews have required plantings of native vegetation along the shoreline, which has helped to improve the appearance and habitat values of the shoreline on the overall Willbridge Terminal site. A small area of landscaping just southwest of the project area has been planted with a cluster of native shrubs and trees, immediately adjacent to the perimeter fencing separating the riverbank from the developed areas landward of the

bank. Also, approximately 100 feet upstream from the project area, the riverbank consists of a sandy beach with native plantings above the ordinary high water mark, between the riverbank and developed areas of the site.

Additionally, just downstream of the site, there are two Rank II habitat areas (Sites 15.5a and 15.3a) that provide significant riparian values. One (Site 15.5a) is noted as a broad tidal mudflat with an emergent wetland entering the river via a culvert. The mudflat provides good shorebird habitat, and existing vegetation provides food and cover for the shorebirds. The other (Site 15.3a) consists of a sandy beach beneath the Burlington Northern railbridge. There are several streams that empty into the river at this location. This area is noted for its rarity of habitat and its scenic qualities, including an emergent wetland and cottonwood and willow trees.

Because the proposed sheet pile wall is intended to halt the migration of contaminants into the river, the general habitat area of the site and surrounding area should be greatly improved. Additionally, the proposed construction area will be isolated physically and through proposed erosion control methods from nearby landscaping and Rank II habitat sites, so that the site alterations will not likely have any detrimental impact on those areas.

However, approximately 160 lineal feet or rip rap is proposed along the northern section of the project area to help stabilize the sheet pile wall, riverward of the ordinary high water mark and within less than thirty feet from the shoreline. The rip rap adjacent to the northern wall segment will be placed with a relatively steep 1:1 slope between the wall and the shoreline. The southern wall segment will be driven to the existing ground surface, and the existing gradual riverbank slope will be retained in this area. These actions, but especially the area of steep rip rap slope along the northern wall segment, could be detrimental to the habitat values of the shoreline, if measures are not taken to minimize or mitigate for the impacts resulting from these actions.

The project area occurs along approximately 205 lineal feet of shoreline. The greenway landscape standards (33.440.230) require a minimum of 11 trees and 103 shrubs for this distance, with living groundcover placed on the remainder of the landscaped area. The applicant has proposed landscaped areas on the upland side of the sheet pile wall of approximately 2,700 square feet, with 12 trees and 125 shrubs, but without any groundcover species indicated. Also, two of the proposed shrub species (wild rose, ocean spray) are more suited to upland planting areas as opposed to the more moist upper shore environment adjacent to the project.

Consistent with recommendations made by the Bureau of Environmental Services, as well as concerns raised by the Port of Portland, an alternative landscaping arrangement would offer better opportunities for the enhancement of the riverbank, especially given the closeness of the project to the shoreline. In particular, there is an opportunity to mitigate for the visual impacts of the steep rip rap bank along the northern wall segment, as well as to improve the near-shore environment for wildlife.

In order to mitigate for the impacts to the riverbank and associated with the project, and to enhance the riparian habitat of the upper shore adjacent to the project, the installation and maintenance of a revised planting scheme will be required as part of the project through a condition of approval. To meet the minimum greenway landscaping standards for the project area, at least 11 trees and 103 shrubs should be provided. Because groundcover materials are required, but because these are less likely to survive below the ordinary high water mark (OHWM), groundcover material should be placed on the upland side of the southern section of sheet pile wall. Also, because of the planting environment on the riverward side of the proposed sheet pile wall (rip rap banks, location below the OHWM), live willow and/or dogwood stakes are most likely to survive and provide habitat benefits to both fish and shorebird populations. Finally, to provide the applicant some flexibility in plant selection, and to ensure the suitability of plant materials for the upper shore environment, a revised list of plant materials should be

provided, with minimum planting densities specified, consistent with standard zoning code requirements in Chapter 33.248 - Landscaping and Screening.

Consistent with these objectives, two alternative planting zones will be required, as noted on the modified version of the applicant's submitted site plan (exhibit C.12). Along the riverward side of the sheet pile wall, below the OHWM, and in an area of approximately 3,100 square feet at the center of the project area, live willow and/or dogwood stakes (shrubs) should be planted. To ensure sufficient density and long-term coverage, this area should be planted with 48 stakes (shrubs) of appropriate species for the near-shore environment. With a linear length of approximately 155 feet in "zone A", and to ensure some degree of vegetation along the entire length of the area, the live stakes should be planted at no greater than 10 feet on center. For the purposes of this review, this area will be identified as "zone A".

Along the upland side of the sheet pile wall, above the OHWM, in an area of approximately 2,700 square feet, the normally required trees and groundcover should be provided, along with the balance (55) of the required shrubs. In this second zone, identified as "zone B", an expanded list of appropriate species will also be provided, to provide the applicant some flexibility in plant selection, and to ensure that the plant materials will survive over time. The plant species for both zones A and B have been selected from the Portland Plant List as appropriate species for the upper shore environment of the site.

With a condition of approval that the applicant implement the alternative landscaping plan discussed above and identified on Exhibit C.12, the engineering solution for control of contaminants can be achieved as proposed, while also ensuring that impacts to the riverbank are addressed and that the riparian habitat at the site will be enhanced. With this condition of approval, this guideline issue can be satisfied.

Issue D. Riverbank Stabilization Treatments: This guideline "applies to all applications for Greenway Approval." This guideline promotes bank treatments for upland developments that enhance the appearance of the riverbank, promote public access to the river, and incorporate the use of vegetation where possible:

1. Riverbank Enhancement

Findings: The existing riverbank is stabilized by a rip rap wall and a gradually-sloping rock and sand bank. As part of the project to control contaminants from entering the river, a steep rip rap slope will be placed on the riverward side of the northern segment of sheet pile wall. As discussed above in findings for Issue C, the overall project, while controlling contaminants entering the river, has potential detrimental impacts to the appearance of the riverbank, as well as to the enhancement of the riverbank for wildlife habitat. Because there is no greenway trail designation on the site, and because public access to the river at the site is not practicable, the portions of this guideline related to public access do not apply.

In order to ensure that the overall project will enhance the appearance of the riverbank, and incorporate the use of vegetation where possible, a condition of approval requiring the alternative "Zone A" and "Zone B" landscaping discussed under Issue C above will be required. With this condition, and with approval otherwise based on the submitted plans, this guideline issue can be satisfied.

Issue E. Landscape Treatments: This issue "applies to all applications for Greenway Approval which are subject to the landscape requirements of the Greenway chapter of Title 33 Planning and Zoning of the Portland Municipal Code." These guidelines call for landscaping treatments which create a balance between the needs of both human and wildlife populations:

1. Landscape Treatment
2. Grouping of Trees and Shrubs
3. Transition

Findings: As discussed above under findings for Issues C and D, above, an alternative landscaping plan will be required on both sides of the proposed sheet pile wall, approximately in the center of the project. This alternative landscaping plan will ensure that the minimum greenway landscaping standards are satisfied, while providing the applicant some flexibility in plant selection and placement. In addition, the alternative landscaping provides for a transition between the riverward side of the sheet pile wall, below the OHWM, and the upland side of the wall, with appropriate native plant species and types in each of the two required planting zones. With implementation of this alternative landscaping plan through a condition of approval, the overall project will result in a landscaping treatment that balances the needs of both human and wildlife populations. With the noted condition, this guideline issue can be met.

Issue F. Alignment of Greenway Trail: This issue "applies to all applications for Greenway Approval with Greenway Trail shown on the property in the Willamette Greenway Plan." These guidelines give direction in the proper alignment of the greenway trail and call for consideration of habitat protection, the physical features of the site and the necessity of maintaining year-round use of the trail:

1. Year-Round Use
2. Habitat Protection
3. Alignment

Issue G. Viewpoints: This issue "applies to all applications for Greenway Approval with a public viewpoint shown on the property in the *Willamette Greenway Plan* and for all applications proposing to locate a viewpoint on the property. These guidelines provide direction about the features and design of viewpoints, as required at specific locations:

1. Design
2. Facilities
3. Access to Water's Edge
4. Relationship to Trail

Issue H. View Corridors: This issue "applies to all applications for Greenway Approval with a view corridor shown on the property in the *Willamette Greenway Plan*". These guidelines provide guidance in protecting view corridors to the river and adjacent neighborhoods.

1. Right-of-way Protection
2. View Protection
3. Landscape Enhancement

Findings: There are no Greenway Trail, (Greenway) Public Viewpoints, or (Greenway) View Corridors shown on the property in the *Willamette Greenway Plan*. For these reasons, guideline issues F, G and H do not apply.

SUMMARY FINDINGS for 33.440.350.A - Greenway Design Guidelines: Based on the foregoing, guideline issues A, B, F, G, and H do not apply. Guideline issues C, D and E are or will be met with the noted conditions. Accordingly, this criterion can be met.

B. River frontage lots in the River Industrial zone. In the River Industrial zone, uses that are not river-dependent or river-related may locate on river frontage lots when the site is found to be unsuitable for river-dependent or river-related uses. Considerations include such constraints as the size or dimensions of the site, distance or isolation from other river-dependent or river-related uses, and inadequate river access for river-dependent uses.

Findings: The site is within the River Industrial overlay zone, but is already developed with an existing and long-standing use involving the transport of petroleum products via barges and ships using existing docks and pipelines to the storage tanks on the west side of NW Front Avenue. Because the existing use of the site is consistent with the purpose of the River Industrial overlay zone, this criterion does not apply.

C. Development within the River Natural zone.

D. Development on land within 50 feet of the River Natural zone.

Findings: The nearest area with the River Natural ("n") overlay zoning designation is approximately ½ mile away directly across the river, along the banks and bluffs below the University of Portland. Since no work is proposed in or within 50 feet of land within the River Natural overlay zone, criterion C and D do not apply.

E. Development within the greenway setback.

Findings: None of the proposed work will occur within the greenway setback, as all work is confined to areas riverward of the greenway setback. This criterion does not apply.

F. Development riverward of the greenway setback.

1. The proposal will not result in the significant loss of biological productivity in the river;
2. The riverbank will be protected from wave and wake damage;
3. The proposal will not:
   a) Restrict boat access to adjacent properties;
   b) Interfere with the commercial navigational use of the river, including transiting, turning, passing, and berthing movements;
   c) Interfere with fishing use of the river;
   d) Significantly add to recreational boating congestion;
4. The request will not significantly interfere with beaches that are open to the public.

Findings: All of the proposed development will occur riverward of the greenway setback. Due to the need to isolate and extract contamination that is seeping into the river, the proposed sheet pile wall project is located relatively close to the riverbank, running approximately along the OHWM. By halting the migration of contaminants to the river, the proposal is likely to improve the biological productivity of the river. Through construction of the rip rap wall along the riverward side of the northern wall segment, and by retention of the gradually-sloping bank adjacent to the southern wall segment, the riverbank will be protected from wave and wake damage. Because no new structures are proposed riverward of the existing shoreline, the proposal will not restrict boat access to adjacent properties, nor interfere with fishing use of the river. As an alteration to an existing site developed with a marine-oriented industrial use, the proposal will not add to recreational boating congestion. Finally, the proposal will not significantly interfere with beaches that are open to the public, especially given the absence of public access to the site. Based on the foregoing, and with approval based on the submitted plans, this criterion is met.

G. Development within the River Water Quality overlay zone setback.
H. Mitigation or remediation plans.

Findings: No activity occurs within the River Water Quality ("q") overlay zone, since the site is within the River Industrial ("i") overlay zone. Mitigation or remediation plans are only required by the approval criteria specific to development within the River Water Quality overlay zone, and therefore the requirement for such plans is not triggered by this case. For these reasons, criteria G and H do not apply.

DEVELOPMENT STANDARDS

Unless specifically required in the approval criteria listed above, this proposal does not have to meet the development standards in order to be approved during this review process. The plans submitted for a building or zoning permit must demonstrate that all development standards of Title 33 can be met, or have received an Adjustment or Modification via a land use review prior to the approval of a building or zoning permit.

Title 24 of Portland City Code addresses balanced cut and fill regulations within flood plains. The applicant will be required to comply with these regulations during the building permit process, as administered by the Site Development Section of the Bureau of Development

Services. The overall project approval granted in this Greenway Review does not preclude the applicant from demonstrating conformance with these regulations during the permitting process.

CONCLUSIONS

In order to control the release of contaminants to the Willamette River, the applicant has proposed a detailed engineering solution at the site, including the construction of a two-segment sheet pile wall, with various bank stabilization techniques and supplemental landscaping. Given the heavy industrial use of the site, and the location and character of the contaminant seepage and existing development, the sheet pile wall solution occurs riverward of the greenway setback at the site, along the existing riverbank. In order to meet the greenway guidelines and approval criteria, however, it must be shown that the proposal will enhance the riparian habitat at the site, and that appropriate landscaping treatments are provided to balance the needs of both the human and wildlife populations.

While the applicant has proposed a landscaping treatment at the site, an alternative landscaping plan will better mitigate for the potential impacts associated with the project, ensure a more appropriate and beneficial landscaping treatment, while also providing the applicant some flexibility in selecting appropriate plant species. With a condition of approval requiring an alternative planting scheme in two "zones", as discussed in the findings of this report, the request is able to meet the applicable criteria and should be approved.

ADMINISTRATIVE DECISION

Approval of a **Greenway Review** for a project to construct a sheet pile wall in two segments, based on the specifications identified on the approved plans, Exhibits C.3-C.6, C.7a-C.7b, C.9, C.12 and C.14, each approved exhibit being signed and dated October 26, 2004, and subject to the following conditions:

A. As part of the building permit application submittal, the following development-related condition (B) must be noted on all required site plans or included as a sheet in the numbered set of plans. The sheet on which this information appears must be labeled "ZONING COMPLIANCE PAGE - Case File LU 04-045492 GW." All requirements must be graphically represented on the site plan, landscape, or other required plan and must be labeled "REQUIRED."

B. The applicants must install and maintain the alternative landscaping plan identified on Exhibit C.12. The alternative landscaping plan must include the minimum planting density, species selection, and bi-zonal locations identified by the staff modifications to Exhibit C.12, as well as appropriate growing medium materials and irrigation methods to ensure the long-term survival of the plantings.

Staff Planner: Mark Walhood

Decision rendered by: MARK WALHOOD **on October 26, 2004.**

By authority of the Director of the Bureau of Development Services

Decision mailed: October 29, 2004.

About this Decision. This land use decision is **not a permit** for development. Permits may be required prior to any work. Contact the Development Services Center at 503-823-7310 for information about permits.

Procedural Information. The application for this land use review was submitted on September 1, 2004, and was determined to be complete on September 24, 2004.

Zoning Code Section 33.700.080 states that Land Use Review applications are reviewed under the regulations in effect at the time the application was submitted, provided that the

application is complete at the time of submittal, or complete within 180 days. Therefore this application was reviewed against the Zoning Code in effect on September 1, 2004.

ORS 227.178 states the City must issue a final decision on Land Use Review applications within 120-days of the application being deemed complete. The 120-day review period may be waived or extended at the request of the applicant. In this case, the applicant did not waive or extend the 120-day review period.

Some of the information contained in this report was provided by the applicant. As required by Section 33.800.060 of the Portland Zoning Code, the burden of proof is on the applicant to show that the approval criteria are met. The Bureau of Development Services has independently reviewed the information submitted by the applicant and has included this information only where the Bureau of Development Services has determined the information satisfactorily demonstrates compliance with the applicable approval criteria. This report is the decision of the Bureau of Development Services with input from other City and public agencies.

Conditions of Approval. This approval may be subject to a number of specific conditions, listed above. Compliance with the applicable conditions of approval must be documented in all related permit applications. Plans and drawings submitted during the permitting process must illustrate how applicable conditions of approval are met. Any project elements that are specifically required by conditions of approval must be shown on the plans, and labeled as such.

These conditions of approval run with the land, unless modified by future land use reviews. As used in the conditions, the term "applicant" includes the applicant for this land use review, any person undertaking development pursuant to this land use review, the proprietor of the use or development approved by this land use review, and the current owner and future owners of the property subject to this land use review.

Appealing this decision. This decision may be appealed to the Hearings Officer, which will hold a public hearing. Appeals must be filed **by 4:30 PM on November 12, 2004** at 1900 SW Fourth Ave. Appeals can be filed on the first floor in the Development Services Center until 3 p.m. After 3 p.m., appeals must be submitted to the receptionist at the front desk on the fourth floor. **An appeal fee of $250 will be charged**. The appeal fee will be refunded if the appellant prevails. Recognized neighborhood associations are not subject to the appeal fee. Low-income individuals appealing a decision for their personal residence that they own in whole or in part may qualify for an appeal fee waiver. In addition, an appeal fee may be waived for a low income individual if the individual resides within the required notification area for the review, and the individual has resided at that address for at least 60 days. Assistance in filing the appeal and information on fee waivers is available from BDS in the Development Services Center. Fee waivers for low-income individuals must be approved prior to filing the appeal; please allow 3 working days for fee waiver approval. Please see the appeal form for additional information.

The file and all evidence on this case are available for your review by appointment only. Please contact the receptionist at 503-823-7702 to schedule an appointment. I can provide some information over the phone. Copies of all information in the file can be obtained for a fee equal to the cost of services. Additional information about the City of Portland, city bureaus, and a digital copy of the Portland Zoning Code is available on the internet at www.ci.portland.or.us .

Attending the hearing. If this decision is appealed, a hearing will be scheduled, and you will be notified of the date and time of the hearing. The decision of the Hearings Officer is final; any further appeal must be made to the Oregon Land Use Board of Appeals (LUBA) within 21 days of the date of mailing the decision, pursuant to ORS 197.620 and 197.830. Contact LUBA at 550 Capitol St. NE, Salem, Oregon 97310 or phone 1-503-373-1265 for further information.

Failure to raise an issue by the close of the record at or following the final hearing on this case, in person or by letter, may preclude an appeal to the Land Use Board of Appeals (LUBA) on that issue. Also, if you do not raise an issue with enough specificity to give the Hearings Officer an opportunity to respond to it, that also may preclude an appeal to LUBA on that issue.

Recording the final decision.
Before the applicant can proceed with their project, the final Land Use Review decision must be recorded with the Multnomah County Recorder.
A few days prior to the last day to appeal, the City will mail instructions to the applicant for recording the documents associated with their final land use decision.

- *Unless appealed,* The final decision may be recorded on or after **November 13, 2004 – (the day following the last day to appeal).**
- A building or zoning permit will be issued only after the final decision is recorded.

The applicant, builder, or a representative may record the final decision as follows:

- *By Mail:* Send the two recording sheets (sent in separate mailing) and the final Land Use Review decision with a check made payable to the Multnomah County Recorder to: Multnomah County Recorder, P.O. Box 5007, Portland OR 97208. The recording fee is identified on the recording sheet. Please include a self-addressed, stamped envelope; ***OR***
- *In Person:* Bring the two recording sheets (sent in separate mailing) and the final Land Use Review decision with a check made payable to the Multnomah County Recorder to the County Recorder's office located at 501 SE Hawthorne Boulevard, #158, Portland OR 97214. The recording fee is identified on the recording sheet.

For further information on recording, please call the County Recorder at 503-988-3034.
For further information on your recording documents please call the Bureau of Development Services Land Use Services Division at 503-823-0625.

Expiration of this approval. This decision expires three years from the date the final decision is rendered unless:

- A building permit has been issued, or
- The approved activity has begun, or
- In situations involving only the creation of lots, the land division has been recorded.

Applying for your permits. A building permit, occupancy permit, or development permit must be obtained before carrying out this project. At the time they apply for a permit, permittees must demonstrate compliance with:

- All conditions imposed here.
- All applicable development standards, unless specifically exempted as part of this land use review.
- All requirements of the building code.
- All provisions of the Municipal Code of the City of Portland, and all other applicable ordinances, provisions and regulations of the City.

EXHIBITS
NOT ATTACHED UNLESS INDICATED

A. Applicant's Statements
   1. Original narrative addressing the approval criteria
   2. Supplemental Report - "Proposal for Source Control Measure"
   3. Correspondence regarding landscaping, received 9/22/04
B. Zoning Map (attached)
C. Plans/Drawings:
   1. (Original) Plan Cover Sheet
   2. (Original) Project Notes Sheet
   3. (Original) Project Location Map (attached)
   4. (Original) Existing Site Features (attached)
   5. (Original) Site Plan (attached)
   6. (Original) Cutoff Wall Cross Sections (attached)
   7a. (Original) Cutoff Wall Collection Trench Details - 1 of 2 (attached)
   7b. (Original) Cutoff Wall Collection Trench Details - 2 of 2 (attached)
   8. (Original) Grading Plan
   9. (Original) Erosion Control Plan (attached)

10. 11" x 17" Set Original Plans
11. 24" x 36" Set Original Plans
12. Landscape Plan with staff modifications (attached)
13. 11" x 17" Copy Landscape Plan as submitted by applicant on 9/22/04
14. Revised Grading Plan, received 9/24/04 (attached)
15. 11" x 17" Copy Revised Grading Plan
16. 24" x 36" Copy Revised Grading Plan

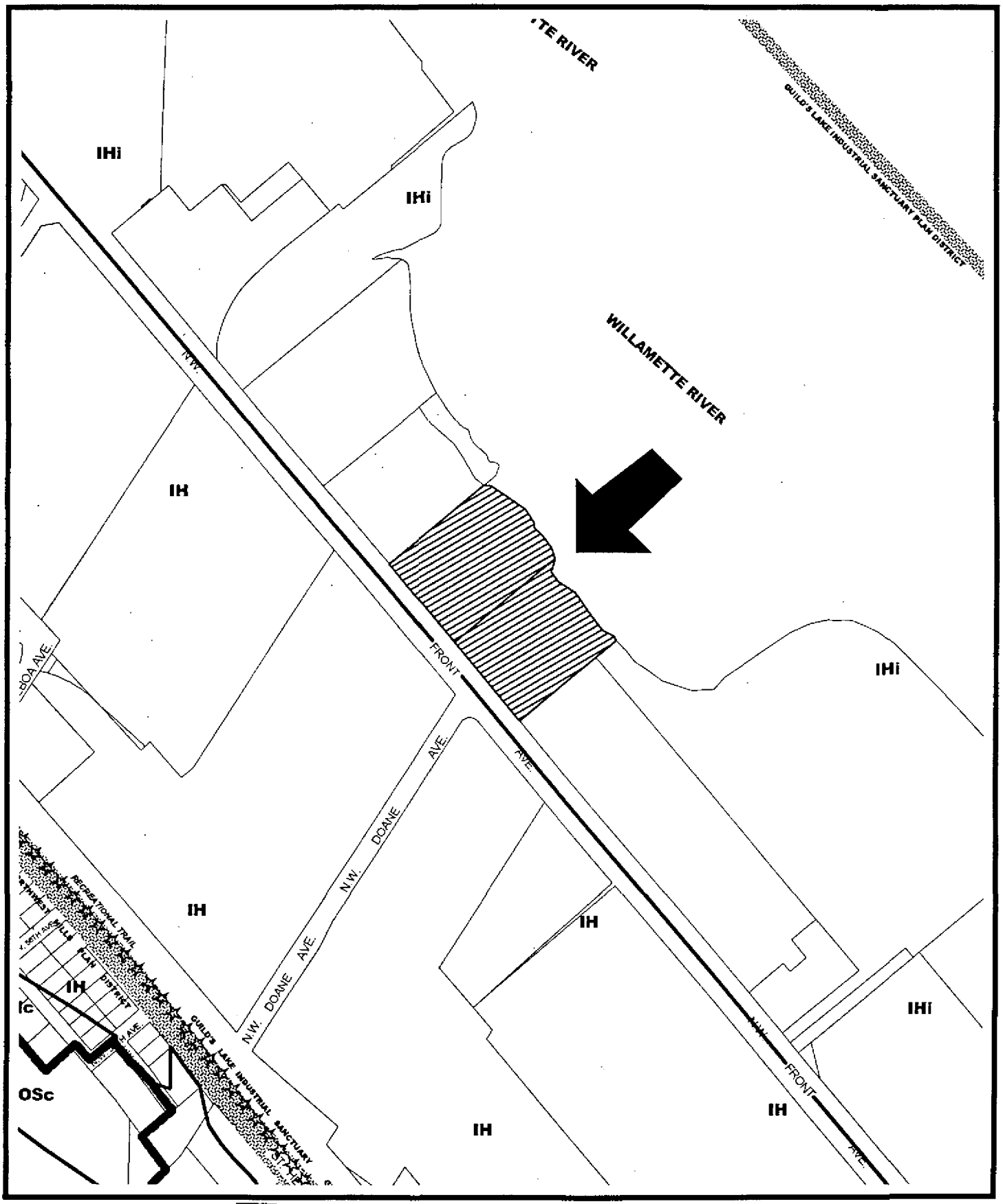
D. Notification information:
   1. Mailing list
   2. Mailed notice

E. Agency Responses:
   1. Bureau of Environmental Services
   2. Development Review Division of Portland Transportation
   3. Fire Bureau

F. Correspondence:
   1. Comment Letter from Port of Portland, received 10/21/04
   2. Letter from Northwest Industrial Neighborhood Association, received 10/14/04
   3. Memo from Staff to Applicant with design/planting suggestions, sent 9/17/04
   4. Incomplete Letter, sent 9/15/04

G. Other:
   1. Original LU Application Form, Tax Account Information and Receipt
   2. Site History Research

The Bureau of Development Services is committed to providing equal access to information and hearings. If you need special accommodations, please call 503-823-7702 (TTY 503-823-6868).



ZONING

Site

NORTH

This site lies within the:
GUILD'S LAKE INDUSTRIAL SANCTUARY PLAN DISTRICT

File No. LU 04-045492 GW
1/4 Section 2423
Scale 1 inch = 400 feet
State-Id 1N1E18C 800+
Exhibit B (Sep 7, 2004)

COP0019275

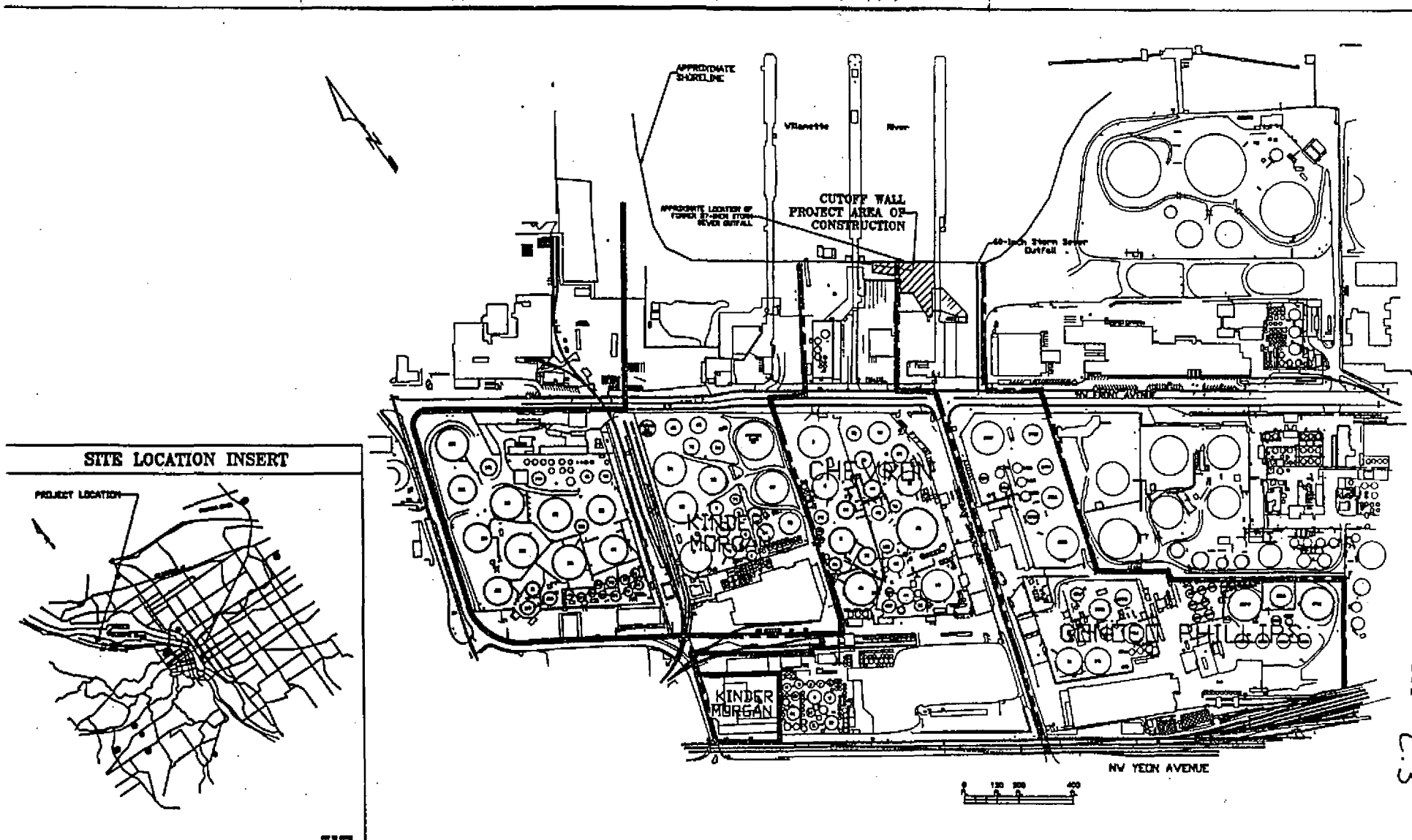
LU04-045492GW

"Approved"
City of Portland - Bureau of Development Services

Planner MARK WALHOOD Date OCT. 26, 2004

* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.

LU # 04-045492
EXHIBIT C.3



BJB		RSV ENGINEERING, INC.	PROJECT LOCATION MAP PROPOSED CUTOFF WALL WILLBRIDGE FORMER 27-INCH STORM SEWER AREA NW Front & NW Doane Avenue
CCA			3 of 10

COP0019276

LU04-045492 GW

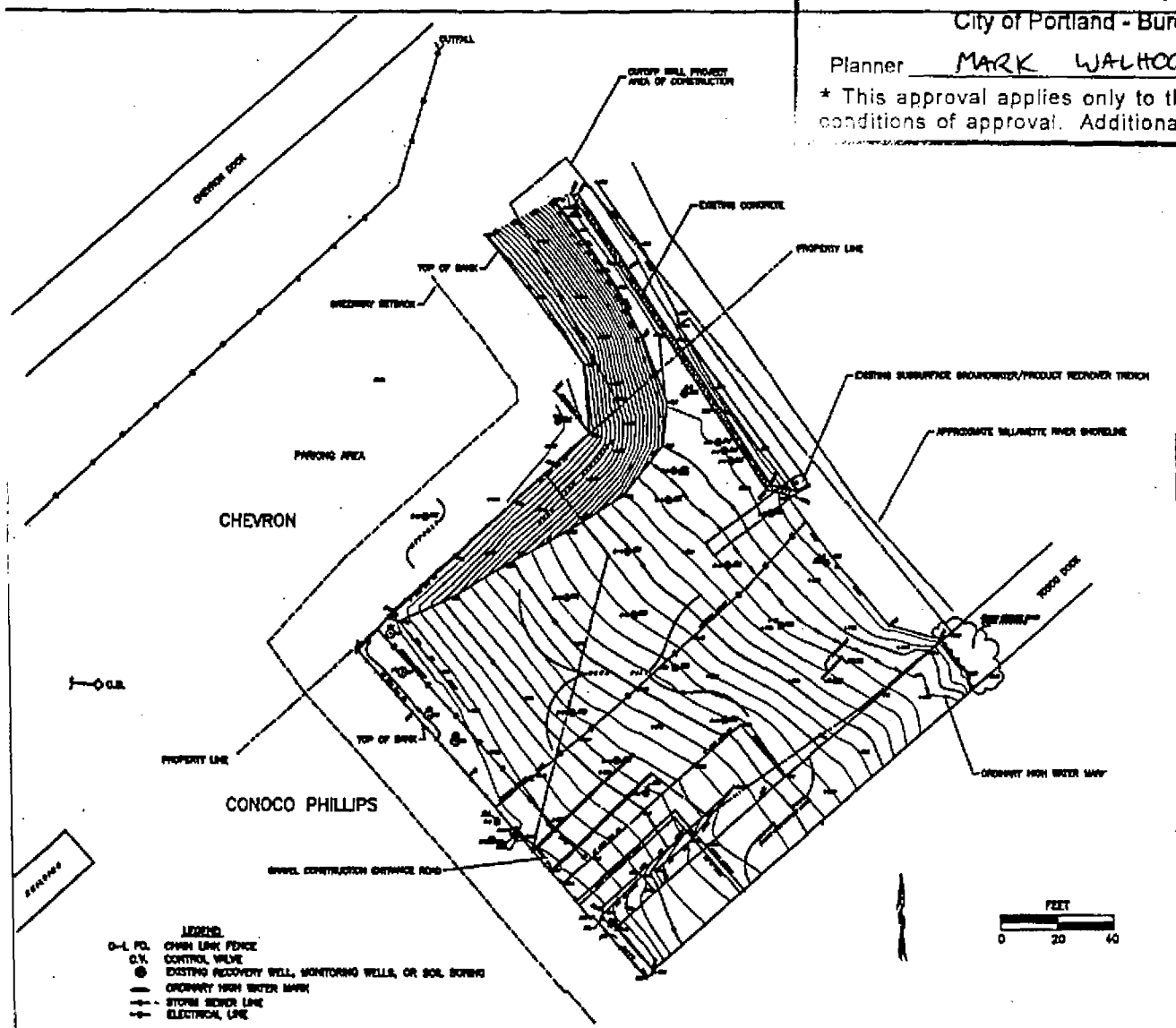
Approved

City of Portland - Bureau of Development Services

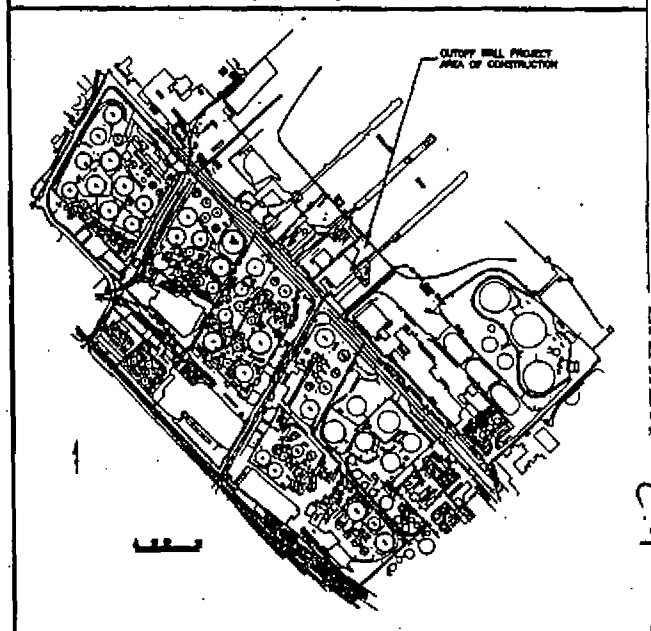
Planner MARK WALHOOD Date OCT. 26, 2004

* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.84
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.



SITE LOCATION INSERT



LU # 04-045492
EXHIBIT C.4

0	3/15/03	Wall design update, February 2003			
1		Wall design update, March 2003			
2	6/18/03	Wall design change, August 2003			
3	10/20/03	Wall design change, October 2003			
4	3/15/04	Design change, August 2004			
NO.	DATE	DESCRIPTION	APP'D		
REVISION					

FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:

RSV ENGINEERING, INC.

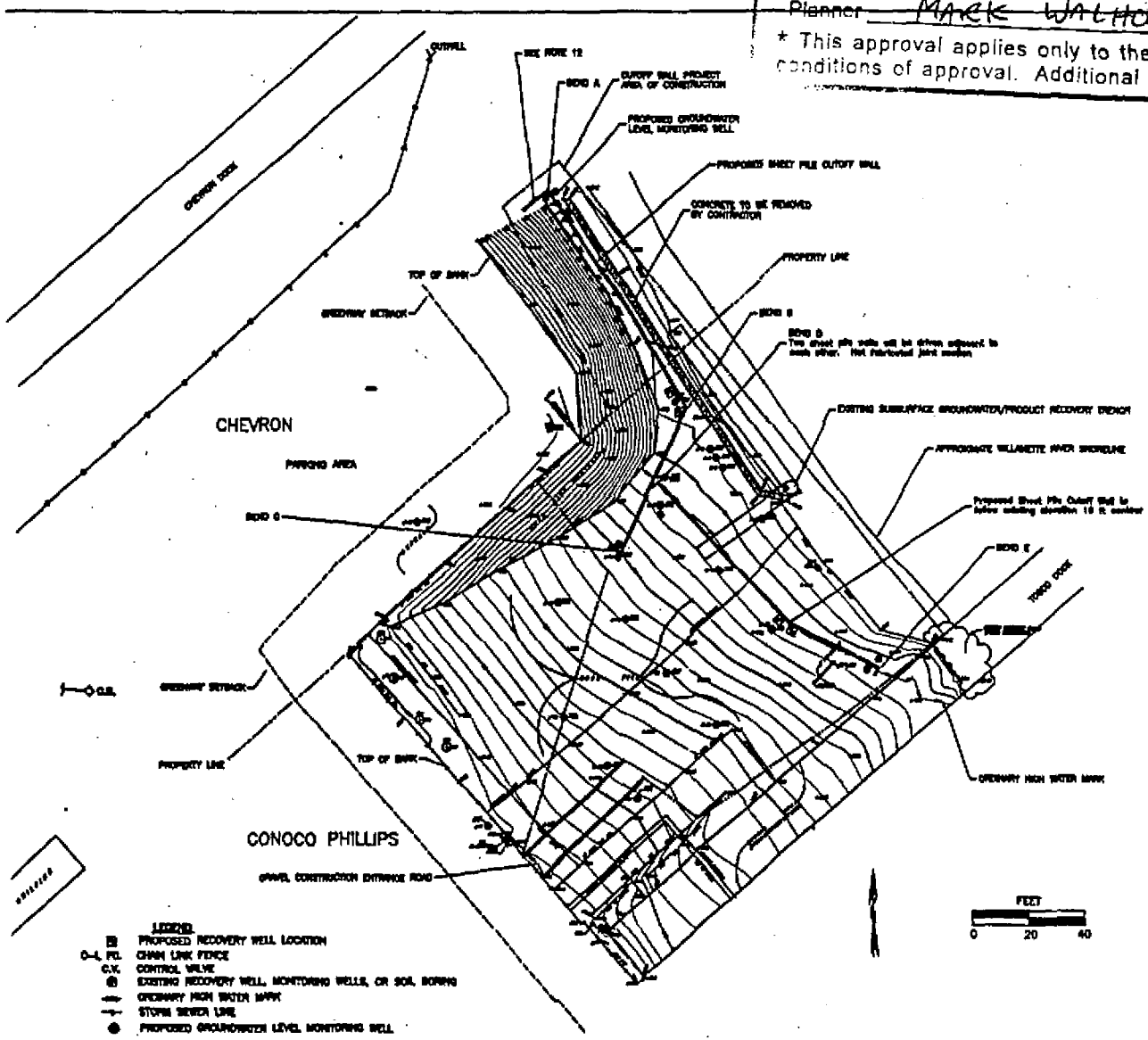
EXISTING SITE FEATURES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

LAB SECTION 8423
JOB NO. 02-136
SHEET NO. 4 of 10

COP0019277

LU04-045492 GW

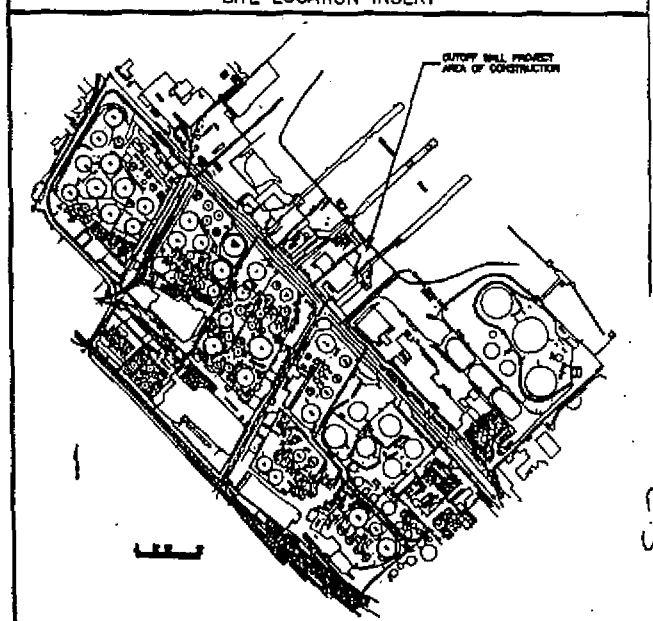
Approved
City of Portland - Bureau of Development Services
Planner MARK WALHOOD Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.



NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2828. ELEVATION 34.84
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 18 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.
12. SLOPE STABILITY EVALUATION TO BE COMPLETED PRIOR TO ANY DISTURBANCE OF EXISTING SLOPE ON CHEVRON PROPERTY.

SITE LOCATION INSERT



LU # 04-045492
EXHIBIT C.5

REVISION			
FINAL MAP DATA			
DESIGNED BY BJB			
DRAWN BY CCA			
CHECKED BY			
REVIEWED BY			

RSV ENGINEERING, INC.

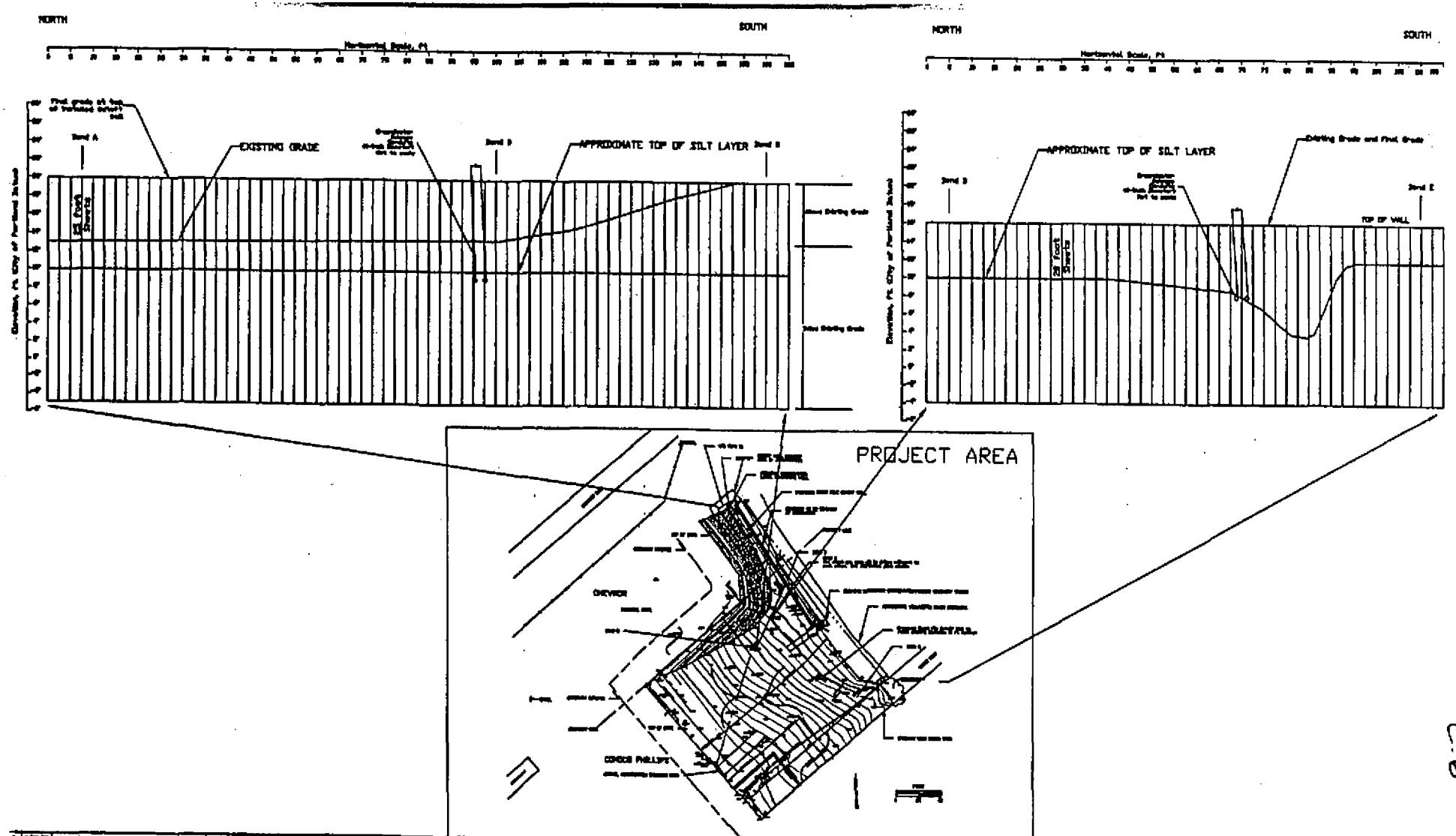
SITE PLAN
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

2423
02-130
5 of 10

COP0019278

LU04-045492 GW

Approved
City of Portland - Bureau of Development Services
Planner MARK WALHOOD Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.



LU # 04-045492
EXHIBIT C.6

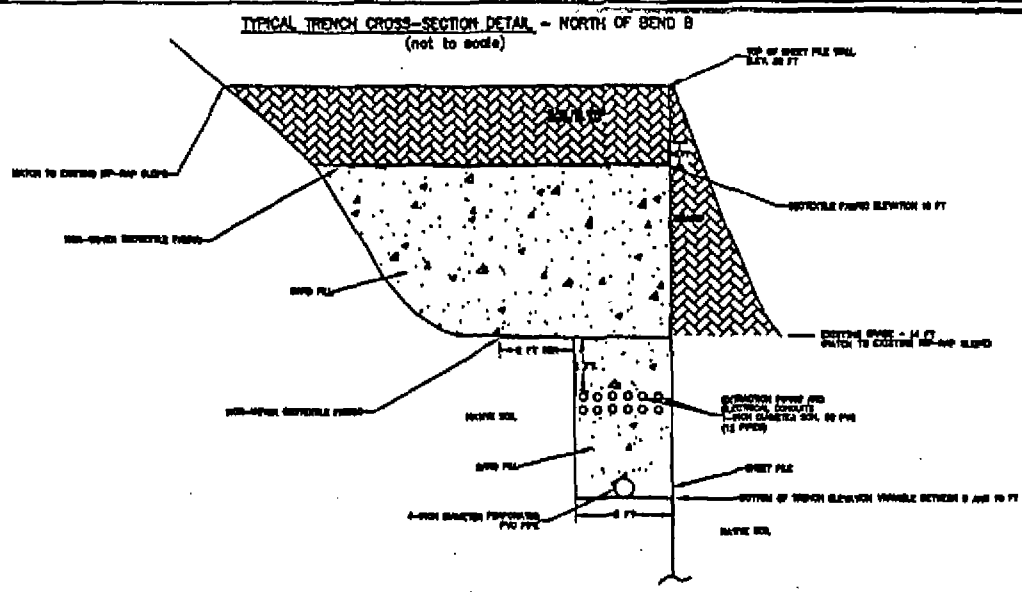
BJB		RSV ENGINEERING, INC.	SHEET PILE CROSS SECTION ALONG ALIGNMENT OF CUTOFF WALL PROPOSED CUTOFF WALL WILLBRIDGE FORMER 27-INCH STORM SEWER AREA NW Front Ave & NW Doane
CCA			6 of 10

COP0019279

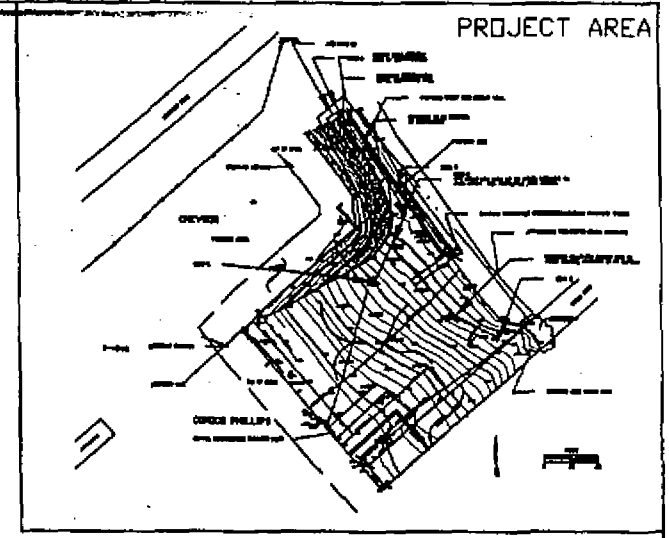
LU 04-045492 GW

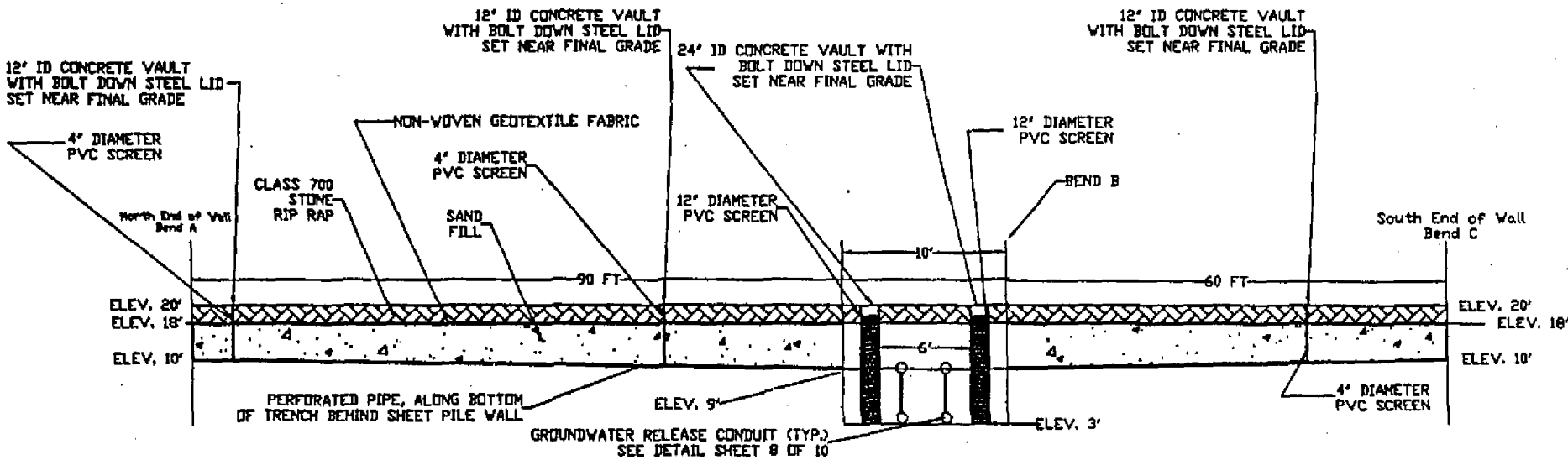
Approved
City of Portland - Bureau of Development Services
Planner MARK WALHOOD Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.

TYPICAL TRENCH CROSS-SECTION DETAIL - NORTH OF BEND B
(not to scale)



PROJECT AREA





3	9/30/04	100% design update, Planning, 2004		DESIGNED BY	BJS	
2		90% design update, March 2004		DRAWN BY	CCA	
1		90% design update, August 2003		CHECKED BY		
0	12/19/02	90% design update, October 2002		QUANTITIES BY		
A	04/30/02	Design change, April 2002				
NO.	DATE	DESCRIPTION OF REVISION	BY			

RSV Engineering, Inc.

CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane

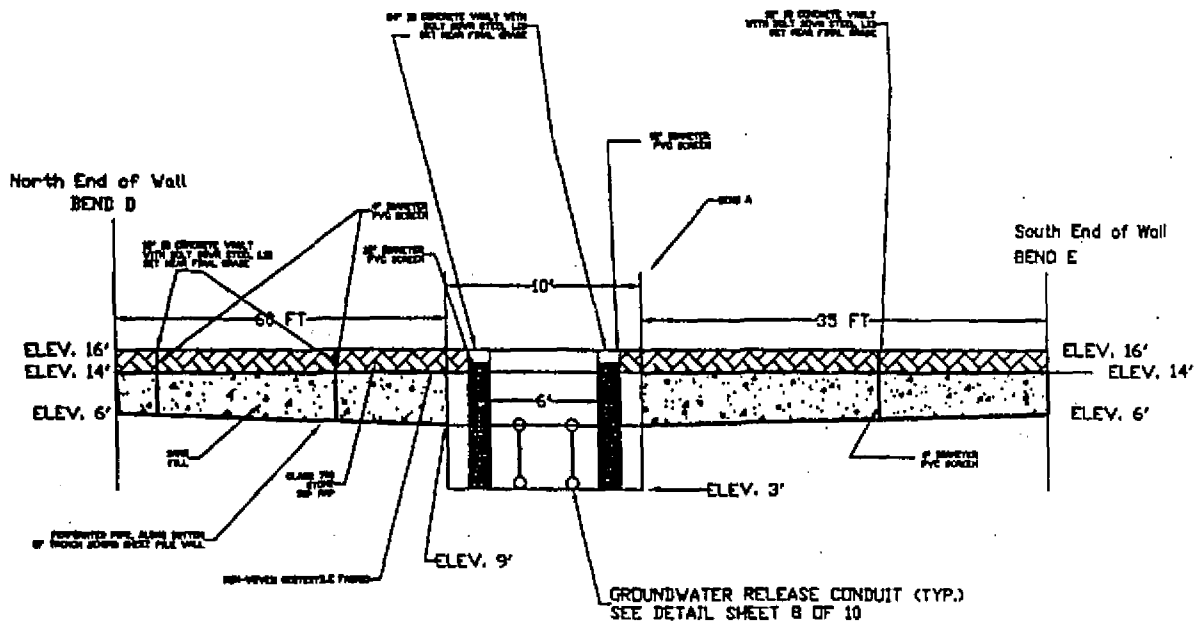
CAD NUMBER 3423
FILE NO. 53-196
SHEET NO. 7 of 10

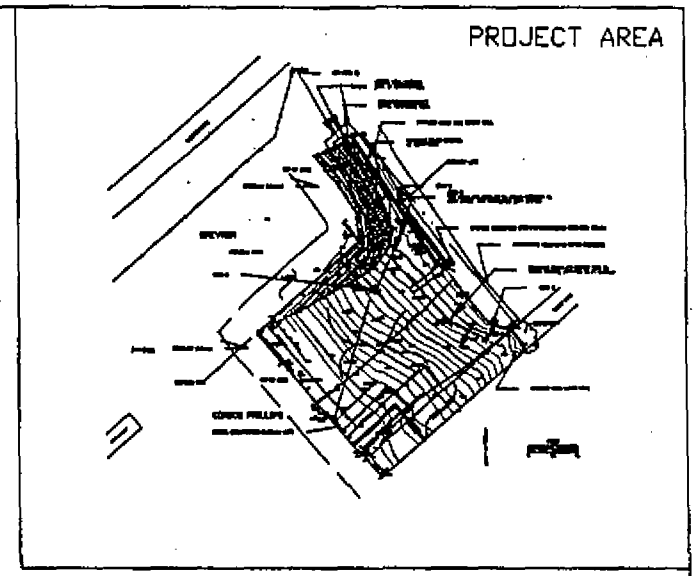
LU # 04-045492
EXHIBIT C.7a

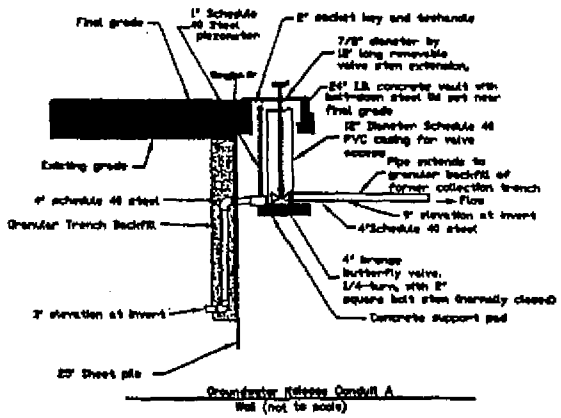
COP00192801

LU 04-045492 GW

Approved
City of Portland - Bureau of Development Services
Planner MARK WALHOOD Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.







LU # 04-045492
EXHIBIT C.76

1	1/10/03	Bid design update, February 2003		BJB	
2		Bid design update, March 2003		CCA	
4	6/16/04	Bid design change, August 2003			
5	6/24/04	Design change, August 2004			
NO.	DATE	REVISION	DWG.		

RSV ENGINEERING, INC.

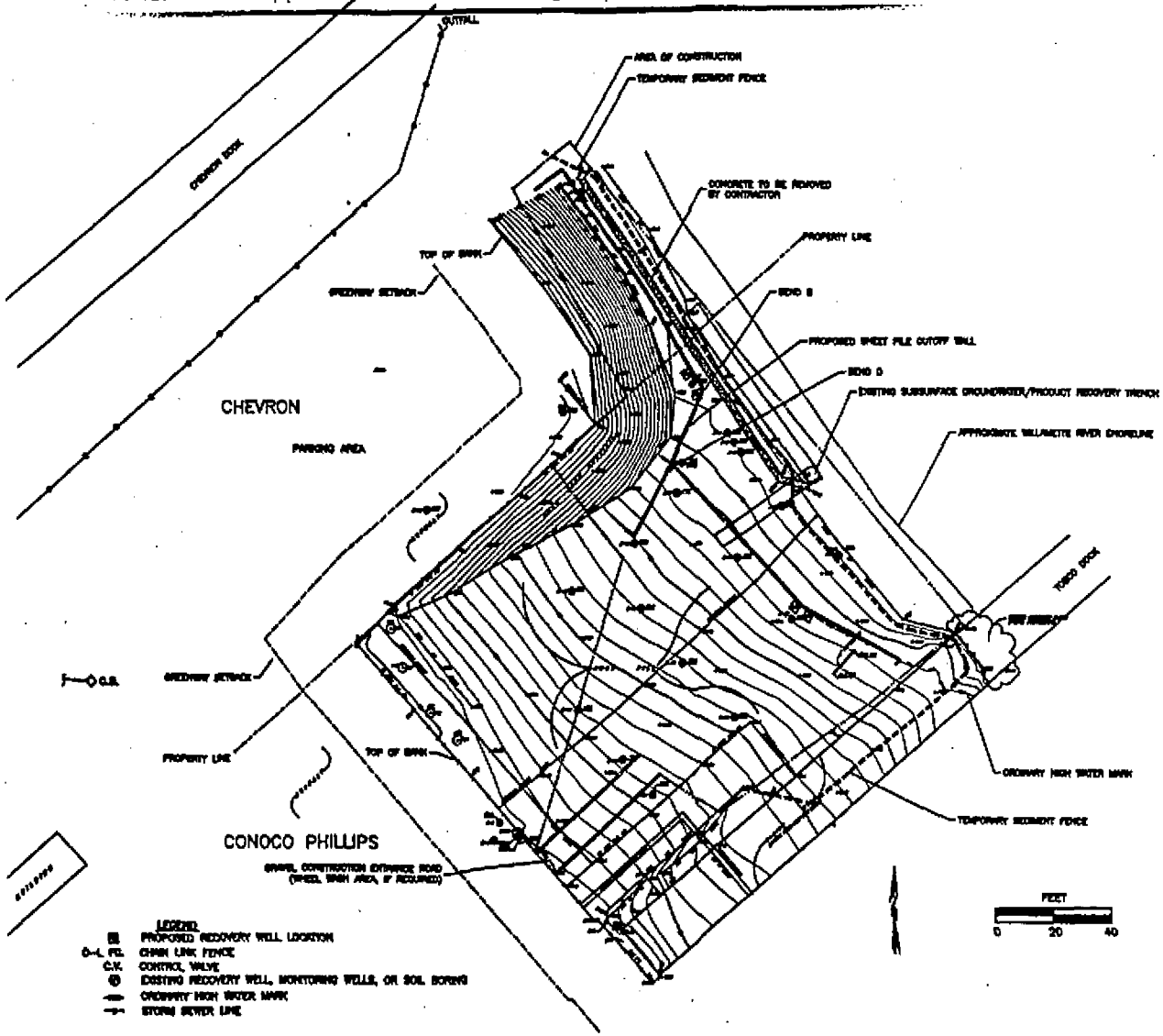
CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

8 of 10

COP0019281

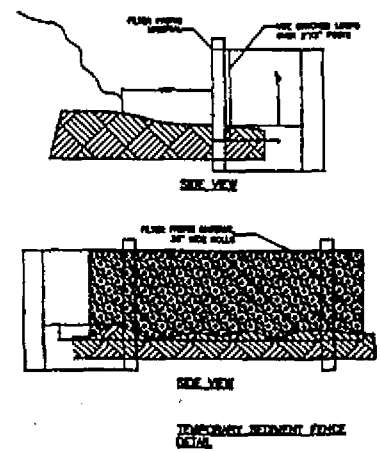
LU04-045492 GW

Approved
City of Portland - Bureau of Development Services
Planner MARK WALHOOD Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.



STANDARD NOTES FOR EROSION CONTROL PLANS

STANDARD NOTES FOR SEDIMENT FENCES



TEMPORARY SEDIMENT FENCE DETAIL

1	2/18/04	Mod. design options, February 2004		DESIGNED BY: BJS	SITE APVD.	
2		Mod. design options, March 2004		DRAWN BY: CCA	PROJECT MGR.	
3	6/30/04	Mod. design changes, August 2004		CHECKED BY:	DIRECT. MGR.	
4	10/26/04	Mod. design changes, October 2004				
5	12/15/04	Design changes, August 2004				
6						
NO.	DATE	REVISIONS	BY			

RSV ENGINEERING, INC.

EROSION CONTROL PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

Dr. number 2423
10=10

LU # 04-045492
EXHIBIT C.9

COP00192822

ZONING COMPLIANCE PAGE - LU 04-045492 GW - REQUIRED

B. The applicants must install and maintain the alternative landscaping plan identified on Exhibit C.12. The alternative landscaping plan must include the minimum planting density, species selection, and bi-zonal locations identified by the staff modifications to Exhibit C.12, as well as appropriate growing medium materials and irrigation methods to ensure the long-term survival of the plantings.

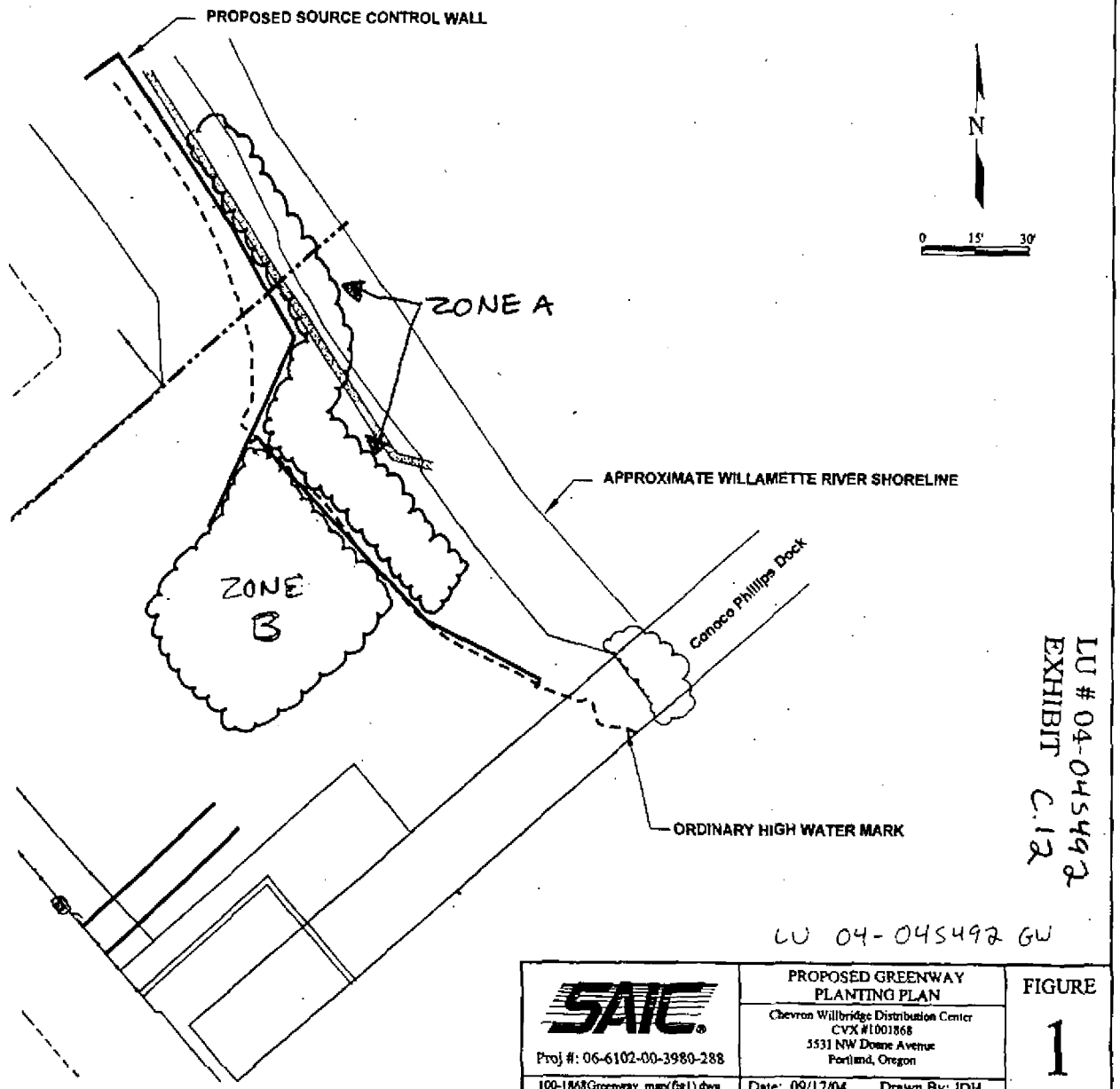
REQUIRED ALTERNATIVE LANDSCAPING PLAN:

ZONE A - RIVERWARD OF SHEET PILE WALL:

- **Minimum 48 shrubs**, planted maximum 10' on center, including at least two of the following species:
  - *Cornus sericea ssp. Sericea* - Red-osier Dogwood (live stakes)
  - *Salix fluvatillis* - Columbia River Willow (live stakes)
  - *Salix hookeriana* - Piper's Willow (live stakes)
  - *Salix sessilifolia* - Willow (live stakes)
  - *Salix sitchensis* - Sitka Willow (live stakes)

ZONE B - UPLAND OF SHEET PILE WALL:

- **Minimum 11 trees**, 2" dbh min. for broadleaf, 5' height min. for evergreen, including at least two of the following species:
  - *Alnus Rubra* - Red Alder
  - *Crataegus suksdorfii* - Black Hawthorn
  - *Fraxinus latifolia* - Oregon Ash
  - *Malus fusca* - Western Crabapple
  - *Populus balsamifera var. trichocarpa* - Black Cottonwood
  - *Salix lucida ssp. Lasiandra* - Pacific Willow
  - *Salix scouleriana* - Scouler Willow
  - *Thuja plicata* - Western Red Cedar
- **Minimum 55 shrubs**, including at least four of the following species:
  - *Cornus sericea ssp. Sericea* - Red-osier Dogwood
  - *Lonicera involucrata* - Black Twinberry
  - *Physocarpus capitatus* - Pacific Ninebark
  - *Ribes bracteosum* - Blue Currant
  - *Ribes divaricatum* - Straggly Gooseberry
  - *Ribes viscosissimum* - Sticky Currant
  - *Rosa nutkana* - Nootka Rose
  - *Rosa pisocarpa* - Swamp Rose
  - *Salix fluviatillis* - Columbia River Willow
  - *Salix sitchensis* - Sitka Willow
  - *Spiraea betulifolia v. lucinda* - Shiny-leaf Spiraea
  - *Spirea douglasii* - Douglas Spirea
  - *Viburnum edule* - Squashberry
- **Groundcover plants over the remainder of Zone B**, min. 4" pots triangulated at 12" on center, with at least four different species, each species being selected from the Portland Plant List.



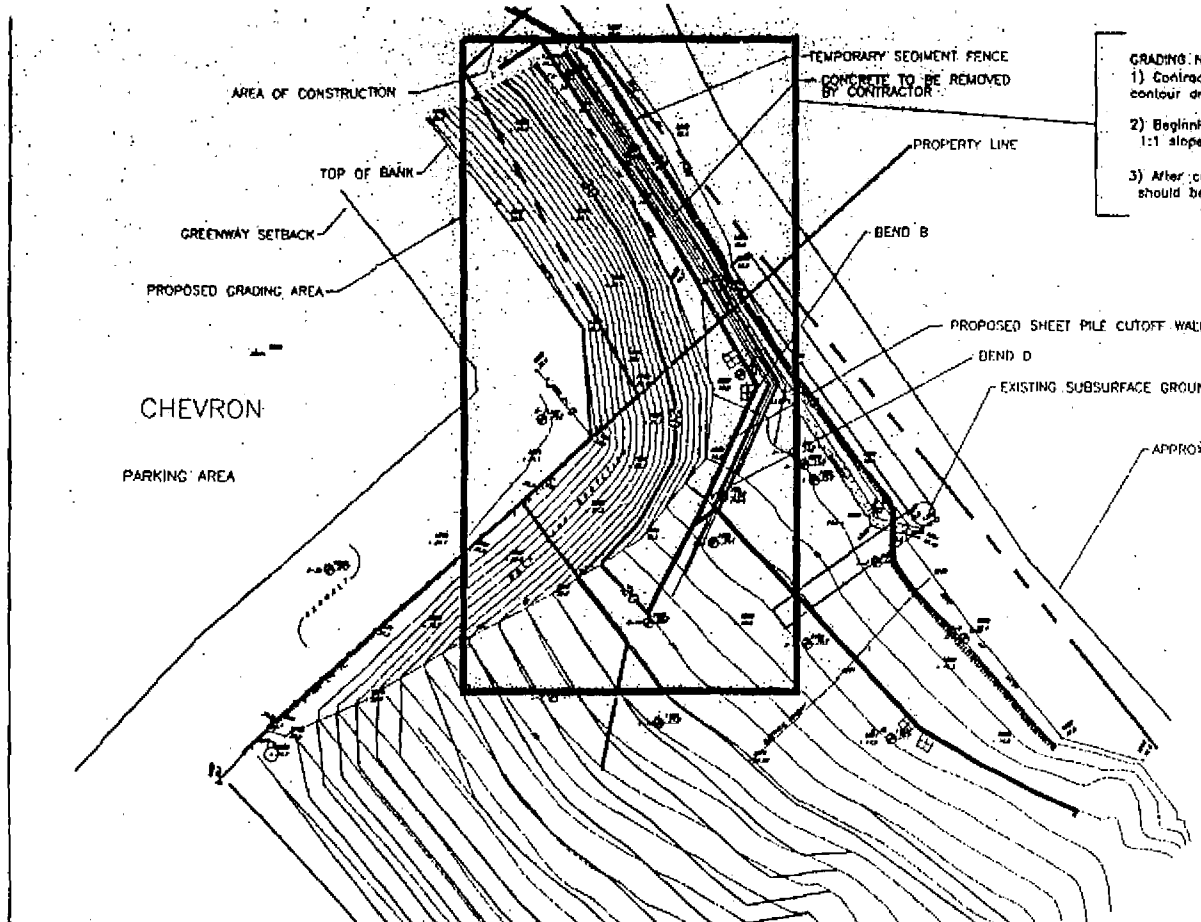
LU # 04-045492
EXHIBIT C.12

LU 04-045492 GW

SAIC Proj #: 06-6102-00-3980-288 100-1868Greenway_map(fig1).dwg	PROPOSED GREENWAY PLANTING PLAN Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon Date: 09/17/04 Drawn By: JDH	FIGURE 1

Approved
City of Portland - Bureau of Development Services
Planner MARK WALHCCO Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.

COP0019283



GRADING NOTES

1) Contractor to backfill behind sheetpile wall between Elev.=20.0 contour and top-of-wall (Elev.=20.0) at 0% slope with onsite riprap.

2) Beginning at top of sheetpile wall (Elev.=20.0), Contractor to construct 1:1 slope toward river to Elev.=14.0 using onsite riprap.

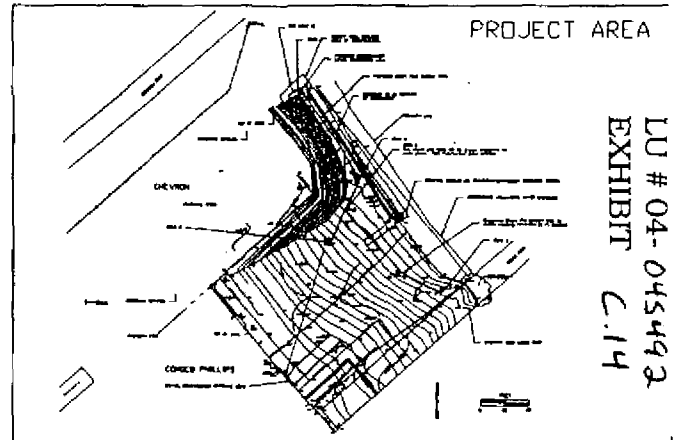
3) After construction activities are completed, no section of sheet pile wall should be above level of riprap.

LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

FEET

0 30 60



LU # 04-045492
EXHIBIT C.14

Prismoidal Volume Results

Original Surface Model:	*Existing*
Final Surface Model:	*Design*
Cut Compaction Factor:	*0.00 %*
Fill Compaction Factor:	*0.00 %*
Raw Cut Volume:	*272.15 cu yd*
Compacted Cut Volume:	*0.00 cu yd*
Total Cut Volume:	*272.15 cu yd*
Raw Fill Volume:	*299.38 cu yd*
Compacted Fill Volume:	*0.00 cu yd*
Total Fill Volume:	*299.38 cu yd*

NO.	DATE	DESCRIPTION	APPD.
2	[illegible]	Well design update, February, 2003	
3		Well design update, March 2003	
4	[illegible]	Well design change, August 2003	
5	[illegible]	Well design change, October 2003	
6	[illegible]	Design change, August 2004	
7	[illegible]	Grading Plan modification, September 2004	

REVISION

PROJECT USER
ROTATION ANGLE
CONSTRUCTED BY
PROJECT COMPLETED
MAP CORRECTED BY ____ CHECKED BY
FINAL MAP DATA

DESIGNED BY BJB
DRAWN BY CCA
CHECKED BY
SECTION NO.
DATE APPD.
PROGRAM NO.
CONST. NO.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31950 SW CHARBONNEAU DR., SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6950

GRADING PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doone
PLAN VIEW

T/R SECTION 2423
JOB NO. 02-158
SHEET NO. 9 of 10

Approved
City of Portland - Bureau of Development Services
Planner MARK WALHOOD Date OCT. 26, 2004
* This approval applies only to the reviews requested and is subject to all conditions of approval. Additional zoning requirements may apply.

LU 04-045492 GW
REVISED - 9/24/04

COP0019284

Portland Terminal
Gen. Counsel.

Cramer, Marty:

From: Ashton, David [ashtod@portptld.com]

Sent: Friday, October 29, 2004 4:52 PM

To: 'Lambert, Charles (charliel)'; Cramer, Marty:; Vallance, Derrick D.; Kevin Schleh (schlehk@saic.com); 'grgrn@chevrontexaco.com'

Cc: Brooks, Suzanne; McKenna, James (Jim); Summers, Anne

Subject: Ashton-conoco-chevron Re Application for Permission to Install Source Control Measure (conoco-chevron cor) 102904

This addresses the October 1, 2004 letter from SAIC re Installation of Source Control Measure.

Kevin has just notified us that the additional information we requested some time ago to assist us in making a decision on these matters will be delivered on Monday.

We are treating the letter as a request for approval of the proposed project under both Chevron and Conoco Phillips' leases with the Port at Willbridge. Under the terms of those leases we would normally have 30 days to approve or disapprove the proposal. Without the missing information, we are unable to make a decision approving the proposed installation.

This letter is a request for an additional 30 days from the date of receipt of the records next week to make a decision under the leases. (Purely as a matter of precaution, to the extent you are unable to give us the requested extension for decision making then this letter should be treated as a disapproval of the projects.)

Also, we would urge you to review the leases and comply with their terms regarding communications with governmental agencies regarding the cleanup projects, obtaining pre-approvals of or reviews by the Port of projects, including cleanup activities.

As we move forward, it would be a good idea - as some of us have discussed - for us to meet to discuss these projects and how they fit into the long-term cleanup and future of the affect uplands property.

Thank you for your consideration.

David

David Ashton
Port of Portland
Work Tel: 503-944-7090
Work Cell: 503-312-7635
Fax to PC: 503-548-5741
Fax: 503-944-7038
Work Email: ashtod@portptld.com
Work Web: portofportland.com

Partners Item 0608
Permits

CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
PO Box 8120
Portland, OR 97207-8120

ZONING PLAN EXAMINATION CHECKSHEET

Application # **04-052768-000-00-CO**
04-052771-000-00-CO

Review Date November 2, 2004

To:	APPLICANT	**Gerald Henderson** **5924 NW Front Avenue** **Portland OR 97210**	Work Fax	503 221-7714 503 222-9766 hega@chevrontexaco.com
From:	PLANNING & ZONING	**RACHEL MCCORMMACH**	Phone Fax	503 823-7605 503 823-7915
cc:	CONTACT	**Martin Cramer** **Conoco Phillips** **5528 NW Doane Avenue** **Portland OR 97210**	Phone Fax	503 248-1517 503 248-1592

PROJECT INFORMATION

Street Address:	**5528 NW DOANE AVE**
Description of Work:	**INSTALL SHEET PILE WALL AS A SOURCE CONTROL MEASURE. SEE 04-052771 CO FOR OTHER HALF OF WALL.**

PLAN REVIEW

Based on the plans and specifications submitted, the following items appear to be missing or not in conformance with the zoning code requirements.

#	Section	Clarification/Correction Required
1.	LU 04-045492 GW	The appeal period for the Greenway Review expires on November 12, 2004. The decision can be recorded after this date. Planning and Zoning cannot approve your permit until the decision is recorded.
2.	Condition A	Please add the following zoning compliance statement to all required plans: *"Zoning Compliance Page – LU 04-045492 GW"*
3.	Condition B	The following condition must be addressed: The applicants must install and maintain the alternative landscaping plan identified on Exhibit C.12. The alternative landscaping plan must include the minimum planting density, species selection, and bi-zonal locations identified by the staff modifications to Exhibit C.12, as well as appropriate growing medium materials and irrigation methods to ensure the long-term survival of the plantings. *Please add a landscape plan to the plan set meeting the requirements of this condition. Landscape plans must include the location, size of plant, species of plant, and plant spacing for all trees, shrubs, and groundcover species to be planted.*

To respond to this checksheet, come to Document Services (1900 SW Fourth Ave., 2nd floor) and update all four sets of the originally submitted drawings. To update the drawings, you may either replace the original sheets with new

sheets, or edit the originally submitted sheets. (Specific instructions for updating plans are posted in Document Services.)

Please complete the attached Checksheet Response Form and include it with your re-submittal.

If you have specific questions concerning this Checksheet, please call me at 503-823-7605. To check the status of your project, please call (503) 823-7000 and select option 4. Your Plan Review Status will be faxed to you, so please be ready to provide a fax number. If you don't have a fax number, you may dial (503) 823-7357 to request a Plan Review Status or visit Document Services.

You may receive separate Checksheets from other City agencies that will require separate responses.

COP0019287

Zoning Plan Examination Checksheet Response

Permit #: **04-052768-000-00-CO**
04-052771-000-00-CO **Date:** _____

Customer name and phone number: _____

NOTE: *Please number each change in the '#' column. Use as many lines as necessary to describe your changes. Indicate which reviewer's checksheet you are responding to and the item your change addresses. If the item is not in response to a checksheet, write* **customer** *in the last column.*

#	Description of changes, revisions, additions, etc.	Checksheet and item #

(for office use only)

COP0019288

Portland Term. 0608
Reg. Corresp.

An Employee-Owned Company

November 8, 2004
Project 06-6102-00-7169-010
DCN: C03-SAI-1001868-01-06236

U.S. Army Corps of Engineers
District Engineer
ATTN: Mr. John Barco, Permit Evaluator
P.O. Box 2946
Portland, Oregon 97208-2946

RE: Response to Comments from the National Oceanic and Atmospheric Administration for the Installation of the Proposed Source Control Measure

Chevron Willbridge Distribution Center
5331 NW Doane Avenue
Portland, Oregon

and

Conoco Phillips Terminal
5528 NW Doane Avenue
Portland, Oregon

DEQ WMCSR-NWR-94-06

Dear Mr. Barco:

On behalf of Chevron and ConocoPhillips, Science Applications International Corporation (SAIC) is responding to concerns presented by National Oceanic and Atmospheric Administration Marine Fisheries Department (NOAA Fisheries) October 28, 2004. Chevron and ConocoPhillips are requesting permit approval to install the proposed source control measure under Oregon Department of Environmental Quality Consent Order WMCSR-NWR-94-06. The NOAA Fisheries letter presented their concerns to the U.S. Army Corps of Engineers (Corps) finding that the proposed project is not likely to adversely affect five species of Willamette River salmon listed under the Endangered Species Act (ESA) as threatened, and they requested additional information.

The additional information requested by NOAA Fisheries is addressed below. A complete information package is attached for submittal to NOAA, which includes a full size set of engineering plans, one copy of the "Proposal for Source Control Measure" (previously submitted to the Oregon Department of Environmental Quality), and one copy of the Human Health and Ecological Baseline Risk Assessment has been attached for NOAA Fisheries review.

NOAA Fisheries has also stated a concern regarding the potential for an increased rate of contaminant release into the Willamette River as a result of the vibratory action of the hydraulic hammer during sheet pile installation. This issue should be mitigated with the use of a variable pitch pile driving hammer. Variable pitch pile driving hammers are designed to prevent the generation of vibrations or frequencies that are sufficient to produce excess pore water pressures that would be required to cause an increased release rate. Through the mitigation of excess pore water pressures, no contaminants should be released as a result of installing the sheet piles.

Science Applications International Corporation
1220 SW Morrison Avenue, Suite 500 | Portland, Oregon 97205 | tel: 503.243.6175 | fax: 503.243.1863 | www.saic.com

If NOAA Fisheries has any questions regarding their approval of the proposed project after review of the attached information, SAIC would like to meet with them and the Corps by November 16, 2004. If you have any questions or need additional information, please contact Gerard Koschal at (503) 554-8852 or Kevin Schleh (503) 243-2070.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Kevin Schleh

Kevin Schleh, R.G.
Senior Project Manager

Attachments

cc (without attachments):

Mr. Gerald O'Regan, Chevron, San Ramon, California
Mr. Tim Warner, SAIC, Boston Massachusetts
Mr. Martin Cramer, ConocoPhillips, Portland, Oregon
File

COP0019290

1 **How will SPH be stopped from migrating around the sheet pile wall?**

A collection trench will be installed on the upland side of each segment of the wall to intercept SPH and impacted groundwater migrating through the dredge sand fill towards the Willamette River. The wall segments will be keyed into the native silt layer preventing lateral migration of SPH or dissolved phase hydrocarbons. Recovery systems would be installed in the collection trenches, which would be connected to a redundant network of effluent pipelines that will allow the capability for groundwater treatment at compounds located at either the Chevron or ConocoPhillips terminals. Treated water will be disposed at the City of Portland waste water treatment plant.

2 **The document does not address dissolved phase hydrocarbons. Do dissolved phase hydrocarbons migrate from the site into the Willamette River? If so, how are they being addressed?**

The migration of dissolved phase hydrocarbons is currently being assessed as part of the Source Control Investigation. This system has been designed to intercept and treat both SPH and dissolved phase hydrocarbons.

3 **Will the old SPH recovery system be removed?**

Yes, the Holbrook Trench recovery system (old system) will be removed as one of the final components of this project.

4 **Groundwater analytical data are referenced in a variety of tables (through Table 9) but are not provided in the submittal. Please provide these tables.**

A complete set of analytical tables is provided in the Proposed Source Control Measure.

5 **Figure 8, as described in the text, was not provided.**

Figure 8 does not exist. This reference is a clerical omission, and the reference to Figure 8 in the Proposed Source Control Measure has been deleted from the text.

6 **It is not possible to read the erosion control information on sheet 10. Please provide a larger copy of this sheet, or provide a description of the erosion control measures that are proposed for the site. Will an erosion control plan be developed? Who is responsible for the development and implementation of the plan? Who will be responsible for the implementation of the plan during construction?**

A complete full size set of engineering plans has been attached. In addition to the erosion control measures identified in the engineering plans, the correlating permit waiver from the Oregon Department of State Lands (attached) specifies implementation of additional erosion control measures. The site engineer will be responsible for development and development and implementation of an erosion control plan. The contractor and the site engineer will be responsible for implementation of the erosion control plan during construction activities.

COP0019291

7 **Sheet 2 of 10 mentions a water stop seal on top of the sheet piling. What is the sealant, and what is its toxicity to aquatic organisms?**

A copy of information on the Adeka Ultra Seal is attached. As shown in the attached documentation, Adeka Ultra Seal A-50 (specified in engineering plans) has been replaced by Adeka Ultra Seal A-30. The sealant is a two part urethane system consisting of a resin and hardener. After the two components have been mixed, placed into the interlocking joint of the sheet pile, and allowed to cure, a hard urethane is formed. The hard urethane forms a water tight bond with steel surfaces, and does not degrade with contact to groundwater. Adverse impact to aquatic organisms is not anticipated.

8 **What is the source of the fill material?**

Clean construction fill will be imported from a local rock quarry or other aggregate supplier.

9 **Is the Gravel construction entrance road an existing facility at the site?**

Yes.

10 **Will absorbent booms remain in place in the Willamette River after project construction?**

Yes. The absorbent booms will remain in place until the sheet pile wall and recovery system have been installed and shown to be an effective measure.

11 **What monitoring is proposed to ensure the effectiveness of the proposed remedy at stopping the release of SPH and dissolved phase hydrocarbons into the Willamette River? How is success defined, and what concentrations would necessitate additional action on the applicants' part?**

Post construction monitoring will include:

- Conduct regular site visits to monitor depth to groundwater in surrounding wells;
- Record observations for the presence of any SPH;
- Record groundwater pumping rates in the recovery system (with a flow meter);
- Monitor for any observations of groundwater or SPH seepage; and
- Quarterly sample collection from groundwater monitoring wells.

Success of the project will be assessed on several parameters, including:

- Interception and recovery of groundwater and SPH seepage;
- Elimination of SPH or sheen beyond the down-gradient limit of the wall (as observed in monitoring wells or ground surface);
- Localized depression of the groundwater table up-gradient of the sheet pile wall and interceptor trench (to influence preferential groundwater and SPH flow towards the interceptor trench); and
- Decrease in contaminant concentrations in groundwater monitoring wells located down-gradient of the proposed wall.

12 **The problem has been defined as the release of SPH at low river flows. Is it possible that SPH is still being released at high river flows, but is not observed because of increased turbidity and turbulence?**

The problem is defined in the Proposed Source Control Measure as the release of SPH as the river flow decreases from high to low flow stages. As the elevation of river water recedes to seasonal low conditions, SPH is observed to seep from the rip-rap existing slope. The wall has been designed to eliminate the migration of SPH or dissolved phase hydrocarbons during periods of high or low river flow.

COP0019293

Return to: CONOCO PHILLIPS
Attn: Martin Cramer
5528 Doane Ave
Portland, OR 97210

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): # 97088026

Well Identification Number(s): L54940 - PORTLAND TERM. - Multnomah

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of Property Owner(s): _____

State of OREGON, County of WASHINGTON

This instrument was acknowledged before me on 11-17, 2004 *(date)* by MARTIN CRAMER

(name of person(s)) as SITE MANAGER *type of authority - if applicable)* of CONOCOPHILLIPS *(name of party on behalf of whom instrument was executed - if applicable)*

Before Me: CRAIG SHIPPEY

Notary Public for STATE OF OREGON

My commission expires 6-7-2005

Seal, if any:

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only

COP0019294

Return to: CONOCO PHILLIPS
Attn: MARTY CRAMER
5528 DOANE AVE.
PORTLAND OR 97210

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Property Owner Name(s): CONOCO PHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L54941 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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State of OREGON, County of WASHINGTON.

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(name of person(s)) as SITE MANAGER *type of authority - if applicable)* of CONOCO PHILLIPS *(name of party on behalf of whom instrument was executed - if applicable)*

Before Me: CRAIG SHIPPEY

_____ Seal, if any:

Notary Public for STATE OF OREGON

My commission expires 6-7-2005

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
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COP0019295

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Attn: Martin Cramer
5528 Doane Ave.
Portland, OR 97210

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Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L50007 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of ground water without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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State of OREGON, County of WASHINGTON

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Before Me: CRAIG SHIPPEY

_____ Seal, if any:

Notary Public for STATE OF OREGON

My commission expires: 6-7-2005

OFFICIAL SEAL
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COP0019296

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Portland, OR 97210

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Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 Doane Ave. Portland, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L50008 PORTLAND

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of ground water without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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Signature of Property Owner(s): _____

State of OREGON, County of WASHINGTON

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Before Me: CRAIG SHIPPEY

_____ Seal, if any:

Notary Public for STATE OF OREGON

My commission expires: 6-7-2005

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CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

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COP0019297

Return to: CONOCO PHILLIPS
Attn: Martin Cramer
5528 Doane Ave.
Portland, OR 97210

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
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Property Owner Name(s): CONOCO PHILLIPS

Mailing Address: 5528 Doane Ave. Portland, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L50009 PORTLAND

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of ground water without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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State of OREGON, County of WASHINGTON

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Before Me: CRAIG SHIPPEY

_____ Seal, if any:

Notary Public for STATE OF OREGON

My commission expires: 6-7-2005

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NOTARY PUBLIC-OREGON
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Attn: Martin Cramer
5528 Doane Ave
Portland OR 97210

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Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 Doane Ave. Portland, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L50010 PORTLAND

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of ground water without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of Property Owner(s): [signature]

State of OREGON, County of WASHINGTON

This instrument was acknowledged before me on 11-03, 20 04 *(date)* by MARTIN CRAMER

(name of person(s)) as SITE MANAGER *type of authority - if applicable)* of CONOCO PHILLIPS *(name of party on behalf of whom instrument was executed - if applicable)*

Before Me: CRAIG SHIPPEY [signature]

Notary Public for STATE OF OREGON

My commission expires: 6-7-2005

Seal, if any:

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only

COP0019299

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
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Property Owner Name(s): CONOCO PHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L51434 · PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
2. All wells shall be securely covered to prevent any foreign substance from entering the well.
3. All wells shall be equipped with an access port or airline so that static water level information can be determined at any time.
4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of NOVEMBER, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

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COP0019300

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): 9708802.6

Well Identification Number(s): L51438 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
2. All wells shall be securely covered to prevent any foreign substance from entering the well.
3. All wells shall be equipped with an access port or airline so that static water level information can be determined at any time.
4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of NOVEMBER, 2004,

by MARTIN CRAMER. State of Oregon. County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

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COP0019301

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office**. Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L51436 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
2. All wells shall be securely covered to prevent any foreign substance from entering the well.
3. All wells shall be equipped with an access port or airline so that static water level information can be determined at any time.
4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of NOVEMBER, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

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COP0019302

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCO PHILLIPS

Mailing Address: 5528 DOANE AVE. PORTLAND, OR 97210

Deed Recording Number (or legal description): 97088026

Well Identification Number(s): L51435

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
2. All wells shall be securely covered to prevent any foreign substance from entering the well.
3. All wells shall be equipped with an access port or airline so that static water level information can be determined at any time.
4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of November, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

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COP0019303

* Beginning at the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s freight yards with the westerly line of the George Kim Donation Land Claim, in Sections 18 and 19, T.1N.R.1E, W.M., which point is North 31°16'10" East 391.18 feet from an angle corner in said claim line; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 365.75 feet; thence South 31°16'10" West 596.69 feet; thence South 42°06'10" East 250.11 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°18' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description* #97088026 Multnomah

Well Identification Number(s): L41476 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
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4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of November, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019304

* Beginning at the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s right of way with the westerly line of the George Kinney Donation Land Claim, in Sections 18 and 19, T. 1 N. R. 1E. W.M., which point is North 31°16'10" East 391.18 feet from an angle corner in said claim line; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 363.75 feet; thence South 31°16'10" West 596.69 feet; thence South 42°06'10" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°19' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office**. Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description * # 97088026

Well Identification Number(s): L~~41476~~ 32063
PORTLAND

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

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4. Well casing must be protected from damage and meet minimum extension requirements.
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If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of November, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019305

* Beginning [illegible] the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s [illegible] yards with the westerly line of the George Kit[illegible] Donation Land Claim, in Sections 18 and 19, T.1N.R.1E., W.M., which [illegible] is North 31°16'10" East 391.18 feet from an angle corner in said claim line; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 363.75 feet; thence South 31°16'10" West 596.69 feet; thence South 42°06'10" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°19' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCO PHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description * + 97088026

Well Identification Number(s): L~~41476~~ 36856
PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

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4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: [signature]

Signed or attested before me this 13th day of November, 2004,

by Martin Cramer. State of Oregon, County of Washington
(Name(s) of Person(s))

[signature] My Commission Expires: 6-7-2005
(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019306

* Beginning [illegible] the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s [illegible] yards with the westerly line of the George Kitt Donation Land Claim, in Sections 18 and 19, T. 1N. R. 1E., W.M., which [illegible] is North 31°16'10" East 391.18 feet from an angle corner in said claim line; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.13 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 363.75 feet; thence South 31°16'10" West 596.69 feet; thence South 42°06'10" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°19' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office**. Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description * #97088026

Well Identification Number(s): ~~L41476~~ PORTLAND TERM. 36857

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
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If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: [signature]

Signed or attested before me this 13TH day of November, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

[signature] My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

* Beginning [illegible] the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s [illegible] yards with the westerly line of the George Kit[illegible]e Donation Land Cl[illegible], in Sections 18 and 19, T.1N.R.1E. W.M., which p[illegible] is North 31°16'10" East 391.18 feet from an angle corner in said claim; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 363.75 feet; thence South 31°16'10" West 596.69 feet; thence South 42°06'10" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°18' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office**. Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description* ± 9708826

Well Identification Number(s): L~~41476~~ PORTLAND TERM. 36855

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

1. All wells shall be maintained in a condition where they are not a threat to public health or safety, a source of contamination, or a waste of the groundwater resource.
2. All wells shall be securely covered to prevent any foreign substance from entering the well.
3. All wells shall be equipped with an access port or airline so that static water level information can be determined at any time.
4. Well casing must be protected from damage and meet minimum extension requirements.
5. Wells may only be permanently abandoned by a licensed and bonded well constructor or a landowner with a valid permit and bond. Well abandonment must be carried out in accordance with state rules.

If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by-mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: [signature]

Signed or attested before me this 13TH day of November, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

[signature] My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019308

* Beginning at the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s ... t yards with the westerly line of the George Kit... Donation Land Claim, in Sections 18 and 19, T.1N. R.1E. W.M., which P... is North 31°16'10" East 391.18 feet from an angle corner in said claim line; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 363.75 feet; thence South 31°16'10" West 596.69 feet; thence South 42°06'10" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°19' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office**. Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW DOANE AVE., PORTLAND OR 97210

Deed Recording Number (or legal description): * MULTNOMAH CO. TOWNSHIP 1N, RANGE 1E, SECT. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description* #97088826

Well Identification Number(s): L~~41476~~ 36858
PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

In addition to the above, owners of properties on which a well is located are responsible for maintaining that well in a proper manner. Some basic requirements are listed below:

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2. All wells shall be securely covered to prevent any foreign substance from entering the well.
3. All wells shall be equipped with an access port or airline so that static water level information can be determined at any time.
4. Well casing must be protected from damage and meet minimum extension requirements.
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If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of NOVEMBER, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON
(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005
(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

* Beginning at the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s [illegible] yards with the westerly line of the George Abernethy Donation Land Claim, in Sections 18 and 19, T. 1N. R. 1E., W.M., which point is North 31°16'10" East 391.18 feet from an angle corner in said claim; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.56 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°44' East along said southwesterly line of N.W. Front Ave. 383.75 feet; thence South 31°16'10" West 598.69 feet; thence South 42°06'10" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°19' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 42°06'10" West 406.45 feet; thence South 31°16'10" West 101.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 346.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

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Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, Tax Lot 900 See Above Legal Description* #9708826

Well Identification Number(s): ~~L41476~~ 45859 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13TH day of NOVEMBER, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019310

* Beginning at the intersection of the northeasterly line of the Northern Pacific Ry. Co.'s [illegible] yards with the westerly line of the George Kim [illegible] Donation Land Claim in Sections 18 and 19, T. 1N. R. 1E., W.M., which is North 31°16'10" East 391.18 feet from an angle corner in said claim line; thence South 50°38'30" East 10.10 feet to the true point of beginning; running thence North 31°16'10" East along the easterly line of N.W. Doane St. 376.66 feet; thence North 24°34'10" East 85.71 feet; thence North 31°16'10" East 760.15 feet to the intersection of the easterly line of N.W. Doane St. with the southwesterly line of N.W. Front Ave.; thence South 41°41' East along said southwesterly line of N.W. Front Ave. 385.75 feet; thence South 31°16'10" West 596.69 feet; thence South 45°06'50" East 250.71 feet; thence South 31°16'10" West 31.31 feet; thence South 42°06'10" East 646.10 feet; thence South 48°19' West 411.92 feet to the northeasterly line of the Northern Pacific Ry. Co.'s freight yards; thence North 56°38'50" West 108.82 feet; thence North 41°06'10" West 404.45 feet; thence South 31°16'10" West 102.12 feet; thence North 56°39' West 150.48 feet; thence North 42°06'10" West 88.03 feet; thence North 31°16'10" East 65.31 feet; thence North 50°38'30" West 344.72 feet to the place of beginning.

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane Ave., Portland OR 97210

Deed Recording Number (or legal description): * Multnomah CO, Township 1N, Range 1E, Sect. 18, SW 1/4 of SW 1/4, TAX LOT 900 See Above Legal Description * #97088026

Well Identification Number(s): L~~41476~~ 45860 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: [signature]

Signed or attested before me this 13TH day of November, 20 04,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

[signature] My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019311

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane, Portland, OR 97210

Deed Recording Number (or legal description): #97088026

Well Identification Number(s): L45859 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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If you would like further information about water rights, maintaining / abandoning your well, or wish to receive a copy of the administrative rules concerning well construction, please contact the Oregon Water Resources Department by phone at (503) 378-8455, or by mail at 158 12th Street NE, Salem, OR 97301-4172.

I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 13th day of November, 2004,

by Martin Cramer. State of Oregon, County of Washington

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019312

STATE OF OREGON WELL OWNERSHIP INFORMATION FORM
(FILE WITH COUNTY CLERK'S OFFICE)

Pursuant to ORS 537.788, owners of property on which a well is located shall, within 60 days following the construction and/or alteration of a new well or upon property transfer, **record the following information in the property deed records at the appropriate County Clerks Office.** Either the deed recording number or legal description of the property may be used to identify the property.

Property Owner Name(s): CONOCOPHILLIPS

Mailing Address: 5528 NW Doane, Portland, OR 97210

Deed Recording Number (or legal description): #9703880216

Well Identification Number(s): L45860 PORTLAND TERM.

Rights and Responsibilities: Oregon law finds that ownership and the rights to reasonable control of water within this state belongs to the public to be managed by the Water Resources Department. Most uses of water require a water right issued by the Water Resources Department. However, state law allows some uses of groundwater without benefit of a water right. Contact the Department for more information. The Water Resources Department cannot guarantee the presence of water in the desired amount on a specific property.

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I have read the above describing my basic rights and responsibilities related to well ownership.

Signature of all Property Owners: _____

Signed or attested before me this 15TH day of November, 2004,

by MARTIN CRAMER. State of Oregon, County of WASHINGTON

(Name(s) of Person(s))

_____ My Commission Expires: 6-7-2005

(Signature of Notary Public)

(Notary - Please Place Seal Here)

OFFICIAL SEAL
CRAIG SHIPPEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 346638
MY COMMISSION EXPIRES JUNE 7, 2005

Recording Office Use Only
After Recording return to Property Owner(s)

COP0019313

Portion from 0604 Ger Corresp.

PORT OF PORTLAND

December 1, 2004

Mr. John Sherman
ConocoPhillips Company
5528 NW Doane Avenue
Portland, OR 97210

Chevron U.S.A., Inc. c/o
Mr. Gerald Henderson
Chevron Products Company
5924 NW Front Avenue
Portland, OR 97210

SENT VIA E-MAIL, FACSIMILE AND CERTIFIED MAIL

Re: Ground Lease - Port of Portland and ConocoPhillips Company
Port Agreement No.: 89-035 ("Conoco Lease")

Ground Lease – Port of Portland and Chevron U.S.A., Inc.
Port Agreement No. 89-070 ("Chevron Lease")

Dear Mr. Sherman and Mr. Henderson:

This letter is the Port of Portland's response to the October 1, 2004 letter to Mr. David Ashton, Assistant General Counsel for the Port, from Kevin Schleh, of Science Applications International Incorporated (SAIC), concerning planned construction activity on Port of Portland property leased to Chevron U.S.A., Inc. (Chevron) and ConocoPhillips Company (Conoco). That letter provided information concerning an interim remedial action measure proposed under Oregon Department of Environment Quality (DEQ) Consent Order WMCSR-NWR-94-06, consisting of installation of a sheet pile wall to mitigate migration pathways for groundwater (the Project).

Additional information and documentation concerning the Project was requested from SAIC and was received by the Port November 1, 2004. The Port notified Chevron and Conoco twice by email that it would need until December 1, 2004 to complete its review of the application, otherwise it would have to deny approval.

Relevant Decision Criteria

The relevant decision criteria include:

Chevron Lease:

Section 4.1 "Construction of Improvements/Alterations": ".... at least 45 days prior to any construction, alteration, or changes upon the Premises, including any change or alteration to improvements located upon or appurtenant to the Premises, including, but not by way of limitation, any building, docks, driveway, parking area, pipeline, tank, or utility distribution facility, the Lessee shall submit to the Port final plans and specifications, site-use plan, and architectural rendering thereof and shall not commence any construction until it has received the Port's written approval, which approval shall not be unreasonably withheld."

Section 6.1.1 "Indemnity" "The Lessee accepts all liability for any spills, discharges or other depositing of hazardous wastes that have occurred on the Premises or improvements as a result of the existence of the Lessee's products, facilities, or activities since April 9, 1928, and agrees that all present and future liability for uses of

the Premises and improvements throughout the term of this Lease and any extension thereof are and shall be the responsibility of the Lessee, provided that Lessee shall have no liability for hazardous waste or other environmental pollution caused by the Port, its Commissioners, directors, employees, agents, or contractors. The Lessee agrees to defend, indemnify and hold harmless the Port, its commissioners, directors, agents, employees, or contractors at all times from and against any and all claims, liability and expenses of any kind (including reasonable attorney fees) and causes of action of every kind by reason of any damage to property or the environment, or bodily injury incurred or sustained by any third person, arising out of or in any way incident to (1) the Lessee's performance under this Lease; or (2) the condition of the Premises and improvements during such times that Lessee has been or will be in possession of the Premises .... As used in this Article VI, the word "Premises" shall be deemed to include the soil and water table thereof."

Section 6.1.2 "To the extent it is liable under Section 6.1.1, Lessee further agrees to hold harmless and indemnify the Port for any fines, citations, court judgements [sic], insurance claims, restoration costs or other liability resulting from fuel storage or distribution activities from the use of the Premises and improvements, arising as a result of Lessee's use or possession of of [sic] the Premises and improvements approved by the Port by the Lessee or its sublessees."

Section 6.1.5 "Lessee shall promptly comply with any valid and enforceable clean up and abatement, or similar order from any governmental entity relating to environmental contamination of the Premises or improvements (including without limitation the soil and water table thereof). Any such clean-up shall be in conformance with all applicable governmental rules and regulations."

Section 6.4 "Damage or Destruction of Premises" 6.4.1 "If the Premises and/or improvements are damaged or destroyed by casualty, the Lessee shall as soon as practicable repair, rebuild, or restore the property damaged or destroyed to substantially the same condition, and in accordance with the applicable codes as existed at the time of loss causing such damage or destruction."

Section 7.1 Safety Regulations

Section 7.2 "Environmental Regulations and Permits" "The Lessee agrees that it shall comply with all applicable federal, state, regional and local laws, regulations and ordinances protecting the environment. ... The Lessee shall promptly provide to the Port copies of all notices or other communications between the Lessee and any governmental entity which related to the Lessee's use or possession of the Premises regarding Lessee's noncompliance or alleged noncompliance with any law, ordinance, regulation, condition or other applicable requirement

lawfully imposed by any agency, governmental body, or quasi governmental body having jurisdiction over the Lessee's use of the Premises and improvements."

Conoco Lease:

In addition to the provisions of Sections 4.1, 6.4.1, 7.1 and 7.2, above, the Conoco lease states:

Section 6.1.11 – General Indemnity. :Lessee acknowledges that Lessee has continuously occupied and controlled the use of the Premises since April 9, 1928. Lessee accepts full responsibility and liability for activities that have occurred on the Premises since April 9, 1928 and agrees to defend (using legal counsel acceptable to the Port), indemnify, and hold harmless, the Port, its officers, commissioners, directors, employees and agents from and against any and all actual or alleged claims, damages, expenses, costs, fees (including but not limited to attorney, accountant, paralegal, expert and escrow fees), fines and/or penalties, (collectively "Costs"), which may be imposed upon or claimed against the Port, and which, in whole or in part, directly or indirectly, arise from or are in any way connected with: (1) the act, omission or negligence of Lessee or Lessee's subtenants or licensees or any of their respective partners, officers, directors, agents, employees, invitees or contractors; (2) the use, occupation, management or control of the Premises by Lessee, whether or not due to Lessee's own act or omission and whether or not occurring on the Premises;
(3) any condition created n or about the Premises by any party, other than the Port or an agent of the Port, including any accident or act of vandalism occurring on or about the Premises after April 9, 1928. The term "Premises" as uses herein shall include the son and water table thereof.

Section 6.1.2 – Environmental Indemnity. Lessee acknowledges that Lessee has continuously occupied and controlled the use of the Premises since April 9, 1928. Lessee assumes full responsibility and liability for any spills, discharges or other depositing of Hazardous Substances or any violation of Environmental Laws that have occurred on the Premises as a result of the existence of the Lessee's products, facilities or activities since April 9, 1928, and agrees that all past, present and future liability from use of the Premises and improvements throughout the term of this Lease, and any extension thereof, are and shall be the responsibility of the Lessee. In addition to all other indemnity provided for by this Lease or by law, Lessee shall be solely responsible for, and agrees to defend, (using legal counsel acceptable to the Port) indemnify and hold harmless, the Port from and against all Environmental Costs claims against or assessed against the Port arising, in whole or in part, directly or indirectly, from acts or omissions of any person or entity at or about the Premises, occurring after April 9, 1928. This indemnification shall also require Lessee to reimburse the Port for any diminution in value of the Premises, or other adjacent or nearby Port property, caused by Hazardous Substances, including damages for the loss or restriction on use of rentable or usable space, or of any amenity of the Premises, or any other Port property, including damages arising from any adverse impact on marketing of space in the Premises or other port property. Lessee's obligations shall not apply if the Hazardous Substances were deposited on the Premises by the Port of the Port's agents.....

7.2.1.3 Environmental Cost. "Environmental Cost" shall be interpreted in the broadest sense to include, but not limited to, costs and damages arising from or relating to: (i) any actual or claimed violation of or noncompliance with any Environmental Law; (ii) claims for damages, response costs, fines, fees or other relief relating to matters addressed in any Environmental Law; (III) injunctive relief relating to matters addressed in any Environmental Law; (iv) Hazardous Substance Releases (as defined in Section 7.2.1.4; and (v) violations of any environmental provisions of this Lease. Costs and damages as uses in this Section shall include but not limited to: (a) costs of evaluation, testing, analysis, cleanup, remediation, removal, disposal,

monitoring and maintenance; (b) costs of reporting to or negotiating with any government agency; (c) fees of attorneys, engineers, consultants, and experts, whether or not taxable as costs, incurred at, before or after trial, appeal or administrative proceedings; (d) lost revenue; and (e) diminution of value, loss, or restriction on use of property.

7.2.1.4 – Hazardous Substance Release. "Hazardous Substance Release" shall be interpreted in the broadest sense to include the spilling, discharge, deposit, injection, dumping, emitting, releasing, leaking or placing of any Hazardous Substance into the air or into or on any land or waters, except as authorized by a then-current and valid permit issued under applicable Environmental Law.....

7.2.8 – Lessee's Liability

7.2.8.1 Hazardous Substance Releases. Except as provided I, Section 7.2.8.4 Lessee shall be responsible for any Hazardous Substance Release which occurs during the Lease Term on the Premises. Lessee shall also be responsible for any Hazardous Substance Release on the Premises, on other properties, in the air or in adjacent or nearby waterways (including groundwater) which results form or occurs in connection with Lessee's occupancy or use of the Premises occurring during the Lease Term or occurring or continuing after the Lease Term.

7.2.8.3 Lessee's Liability for Environmental Cost. Except as provided in, Section 7.2.8.4, Lessee shall be responsible for all Environmental Cost arising under this Lease. Any Environmental Cost for which Lessee is obligated or responsible under this Lease shall be paid by Lessee within thirty (30) after the date of written notice or invoice from the Port or from the agency assessing such Environmental Cost directly against Lessee. Any Environmental Cost not paid when due shall bear interest at the Delinquency Rate note previously defined form the date due until paid in full.

7.2.9 – Environmental Remediation.

7.2.9.2 Remediation and Removal. Lessee shall promptly undertake all remedial and/or removal actions necessary or appropriate to ensure that any Hazardous Substance Release is eliminated and that any violation of any Environmental Law or environmental provision of this Lease is cured or corrected. Lessee shall remove, at Lessee's sole expense, all Hazardous Substance for which Lessee is responsible under this Lease or under any Environmental Law, and shall restore the Premises or other affected property or water to its precontamination condition. In the even that any remediation or removal required by this Lease cannot reasonably be completed prior to the termination or expiration of this Lease, Lessee shall not be in default of its remediation obligations as long as Lessee immediately commences all investigation, containment, remediation and removal activities within thirty (30) days (or sooner if required by Environmental Law) and diligently and continuously pursues such activities until completion.

7.2.10 – Port's Approval Rights. Except in the case of an emergency or an agency order requiring immediate action, Lessee shall give the Port advance notice before beginning any investigatory, remediation or removal procedures. The Port shall have the right to approve or disapprove the proposed investigatory, remediation and

removal procedures and the company(ies) and/or individuals conducting such procedures which are required by the Lease or by Environmental Law, whether on the Premises or on any affected property or water. Lessee shall not initiate any risk assessment based remediation or closure without the prior written consent of the Port, which consent may be withheld or conditioned in the Port's sole discretion. The Port will have the right to require Lessee to requests oversight from the Oregon Department of Environmental Quality ("DEQ") of any investigatory, containment, remediation and removal activities and/ or require Lessee to see a statement from DEQ of "No Further Action".

Section 7.3 – Notice to the Port. Lessee shall promptly notify the Port upon becoming aware of: (i) a violation or alleged violation of any Environmental Law related to the Premises or to Lessee's occupation or use of the Premises or any environmental provision of this Lease; (II) any Hazardous Substance Release on, under or adjacent to the Premises or threat of or reasonable suspicion of any of the same; (III) any notice or communication from a governmental agency directed to Lessee and relating to any Hazardous Substance Release or any violation or alleged violation of Environmental Law which relate to the Premises or to Lessee's occupation or use of the Premises; and (iv) any Hazardous Substance Release or violation of Environmental Law discovered by Lessee on property or in the air or water adjacent at the Premises. If notice must be given on the weekend or after 5:00 p.m. on any day, Lessee shall notify the Port by calling the Port's emergency telephone number. That number currently is (503) 460-4111.

Decision

At this time, the Port approves the installation of the Project, as set out in the furnished plans and specifications, subject to the following conditions:

1. Lease Term The two leases currently terminate April 9, 2009. To the extent that the project impacts Port property, approval of the Project is therefore given only for the duration of the existing term. To the extent that the Project remained in place after expiration of the leases, the Port's upland property use and development rights, including its long-term riparian rights would be substantially adversely impacted without offsetting compensation or liability protection. Though the Chevron lease has an extension option, it has not yet been exercised, and the CPC lease does not have an extension option. Because the Project impacts both leased areas, its duration must necessarily be limited to the current available term.

   Chevron and Conoco could solve this limitation by: (1) acquiring ownership of the leased properties; (2) extending the leases for the forseeable life of the Project; or (3) compensating the Port for the damage to its property rights, including riparian rights, in some other fashion. The Port suggests that the simplest solution is for Chevron and Conoco to purchase their respective properties.

2. Ownership of Adjacent Impacted Property As was discussed at the meeting of the parties and Department of State Lands (DSL) representatives which took place November 3, 2004, the Project is to be installed primarily on submersible lands adjacent to the leased areas. Based on research conducted to date, the

Port does not believe it has an ownership interest in these submersible lands. The Port's approval is therefore conditioned upon Chevron and Conoco obtaining appropriate permission from DSL to install and operate the Project.

3. Restoration of Site to Preexisting Conditions Neither Conoco nor Chevron has applied for relief from their respective obligations under their leases to restore the leased properties to their condition pre-existing the leases. Thus, at the termination of the leases, whenever that occurs, the properties must be returned to their original pre-existing uncontaminated condition.

4. Trench Removal Due to the existing collection trench treatment system's potential long term impact on the Port's riparian rights, this approval is conditioned on excavation and proper disposal of the existing collection trench treatment system offsite.

5. Engineering Considerations Chevron and Conoco must take into consideration and respond to the Port Engineering Department comments contained in Attachment A.

6. Lease Compliance Chevron and Conoco shall comply with the terms of their leases relating to the completion of this Project and the final remediation of the properties, including copying the Port on all significant communications with the interested local, regional, state and federal regulatory agencies overseeing the cleanups and complying with all applicable local, regional, state and federal environmental and natural resource protection laws.

This approval does not extend to the previous sheet pile wall installation project impacting the Conoco leasehold.

If you have any questions, please feel free to call me at (503) 944-7509 or David Ashton at (503) 944-7090.

Sincerely,

Suzanne Brooks
Property Manager
Property & Development Services

Attachment A

c: John Sherman, via regular mail
Gerald Henderson, via regular mail
Martin Cramer, ConocoPhillips
Jerry Johnston, ConocoPhillips
Charles G. Lambert, ChevronTexaco
Kevin Schleh, SAIC
Gerald O'Regan, ChevronTexaco

Attachment A

Here are Engineering Department comments on the drawings that Engineering reviewed for the sheet pile wall project

Sheet 2/10
General Note 5 says a slope stability evaluation is to be completed prior to any disturbance of the existing slope on Chevron property. This is something that usually is done along with the sheet pile design, and would need to be done prior to any installation of the sheet piles. This will require the services of a geotechnical engineer.

General Note 6 says the removed material shall be disposed of at a proper landfill. This should be labeled as a Subtitle D or C landfill depending on the character of the excavated material.

Sheet pile wall notes should have Design Criteria for the cantilever sheet pile wall. This will be required by the City for the permit.

The location of the existing 27 inch outfall is not clear, which may be the scale of the drawings, and what to do with it is not mentioned.

Sheet 4/10
The drawing is hard to read. Notes 6 & 7 are unclear as to where on the site. The city bench marks are in note 1, and the OHW is called out as MSL in note 10. It is unclear if the plan contour lines, greenway setback, existing features and cut off wall are COP or MSL datum. Usually to identify items on plans, coordinates are provided. There are no coordinates in this set of drawings to locate features.

Sheet 5/10
The bends of the sheet pile wall do not have coordinates. Where the two sheet piles walls (north wall and south wall) come together, they are installed "adjacent" to each other. To make this wall a "tight" barrier the walls should be joined, either through a welded interlock accessory connection, or a "wye" sheet pile. Otherwise, this will always be a source of leakage and it will not be a source control measure. The bends noted for the sheet pile wall, and all locations along the wall need coordinates. Also, the degree of rotation of the interlocks of the sheet piles may not allow for an abrupt bend, but over several successive sheets the angular turn may be achieved. There is no indication who installs the monitoring wells, and there are no details. Note 12 reiterates the slope stability evaluation necessary before this project can proceed. It is quite possible that the slope stability analysis will require the sheet piles to be longer. The length of the sheet appears to be on the short side. The note on the plan refers to concrete to be removed. There are not details on the extent, depth, size, or cubic yards of concrete to be removed. The recovery trench is not addressed for how the sheet pile wall will go through it. There is an electrical conduit run that is shown on the drawings, which the sheet pile wall is installed on top of. It is unclear how this detail is handled.

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Sheet 6/10
The tip elevations look too shallow. There were no calculations with this set of documents. There is no direction what to do with the groundwater release conduits.

Sheet 7/10
Detailed information and extent of work is unclear on the trench. There are no details on the concrete vaults, or PVC screens. The rip rap is laid on sand. Usually there is an intermediate course of quarry filter rock that is placed on top of the sand, and before the rip rap is placed. This keeps the sand from percolating through the larger stone voids.

Sheet 8/10
Detailed same information on the trench and detail is unclear also on this sheet. Suggest using galvanized steel pipe for the release conduit. Settlement will usually occur around this sheet pile wall. The hole through the sheet for the steel ground water release pipe does not have slippage built into it. It appears the product behind the wall is discharged into the existing trench that is on the river side of the sheet pile wall. This is unclear.

Sheet 9/10
The quantities noted need to be split between above and below OHW. There are no coordinates on the drawings, so it is unclear where this material comes from.

There is a note on page 3 of 5 of an August 25, 2004 that discusses the volume of excavation (150 cy) and fill (250 cy) and that 75 cubic yards will be place on Port of Portland property. There is no information where and what is going to happen during this excavation and fill part of the project on the drawings.

COP0019321

CITY OF PORTLAND, OREGON - BUREAU OF DEVELOPMENT SERVICES

1900 SW Fourth Avenue, Suite 5000 • Portland, Oregon 97201 • www.bds.ci.portland.or.us

Landscape Certification

Site Information

Date _____ Permit Number 04-052768 / 04-052771 CO

Site Location/Street Address _____

City _____ State _____ Zip Code _____

Landscape Certifier Information - Check one

Self Certification | **Third Party Certification**

☐ Self Certification | ☐ Landscape Architect ☐ Landscape Contractor ☐ Arborist ☐ Other

Name _____

Registration or License Type and Number _____ exp Date _____

Street Address _____

City _____ State _____ Zip Code _____

Day Phone _____ FAX _____ email _____

Number of required trees planted
Number of required shrubs planted
Irrigation ☐ **Temporary** ☐ **Permanent** ☐ **None**
Landscaping installed according to approved plans? ☐ **Yes** ☐ **No**
If no, you must attach approved plans showing all substitutions made. All substitutions must be within the limits allowed by City code.

The property owner is responsible for ensuring that the required landscaping is installed correctly

If the landscaping installation is falsely certified, it does not relieve the property owner of the responsibility for providing the required landscaping. The City of Portland does not in any way guarantee the performance of Landscape Certifiers.

If a false or incorrect Certification is submitted, BDS will take one or more of the following steps to seek correction of the situation:

- BDS will work with the Certifier to ensure that the required landscaping is installed in accordance with the approved plans.
- The Site Development Section may withhold final approval of the site work until the landscaping has been installed correctly and verified.
- Where applicable, the issuance of the Certificate of Occupancy may be delayed.
- If necessary, the case may be referred to the Compliance Services Section of BDS to carry out code enforcement activities, which may result in fines being assessed.

By signing this form, I certify that the landscaping at this site was installed in accordance with the approved plans.

_____

Self or Third Party Landscape Certifier's Signature Date

Submit this completed form to BDS Site Development, attn: Donna Ault, 1900 SW Fourth Avenue, Suite 5000, Portland OR, 97201. Third Party Certification must include a copy of the plan showing the approved plantings.

more information on back

COP0019322

An Employee-Owned Company

October 5, 2004
Project 06-6102-00-3980-285
DCN: C03-SAI-1001868-01-06012

City of Portland, Oregon
Bureau of Development Services
1900 S.W. Fourth Street
Portland, Oregon 97201

RE: Urban Forestry (Street Tree) Review Checklist

Chevron Willbridge Distribution Center
5331 NW Doane Avenue
Portland, Oregon

and

Conoco Phillips Terminal
5528 NW Doane Avenue
Portland, Oregon

DEQ WMCSR-NWR-94-06

To Whom It May Concern:

Attached is the completed Urban Forestry (Street Tree) Review Checklist to obtain a Site Development Permit for the installation of a sheet pile wall as a source control measure at the Chevron Willbridge Distribution Center (Chevron) and Conoco Phillips Terminal in Portland, Oregon. Chevron and Conoco Phillips are requesting are requesting permit approval to install the proposed source control measure under Oregon Department of Environmental Quality Consent Order WMCSR-NWR-94-06.

This package includes a narrative summary and a signed Urban Forestry (Street Tree) Review Checklist.

If you have any questions or need additional information, please contact Gerard Koschal at (503) 554-8852 or Kevin Schleh (503) 243-2070.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Kevin Schleh, R.G.
Senior Project Manager

City of Portland
APPROVED
DEC 2 8 2004
Permit Number

Science Applications International Corporation
1220 SW Morrison Avenue, Suite 500 / Portland, Oregon 97205 / tel: 503.243.6175 / fax: 503.243.1863 / www.saic.com

COP0019323

Narrative Summary
Urban Forestry (Street Tree) Review Checklist
Chevron Willbridge Distribution Center and Conoco Phillips Terminal
October 5, 2004

APPLICANTS:

Gerald Henderson
Chevron Products Company
5924 NW Front Avenue
Portland, OR 97210
(503) 221-7714

Martin A. Cramer
Conoco Phillips
5528 NW Doane Avenue
Portland, OR 97210
(503) 248-1517

CONSULTANTS:

Environmental Consultants:
Gerald Koschal, R.G., Senior Geologist
SAIC
1220 SW Morrison St., Ste. 500
Portland, OR 97205
(503) 554-8852

Kevin Schleh, R.G., Senior Project Manager
SAIC
1220 SW Morrison St., Ste. 500
Portland, OR 97205
(503) 243-6421

Engineering Consultant:
Brad Berggren, P.E., R.G.
RSV Engineering, Inc.
31960 SW Charbonneau Dr., Ste. 101
Wilsonville OR 97070
(503) 694-6960

Property Information:

5531 NW Doane Avenue (Tax Lot # 1N1E18C 800)
Owner: Port of Portland
Lessee: Chevron Texaco

5528 NW Doane Avenue (Tax Lot # 1N1E18C 900)
Owner: Port of Portland
Lessee: Conoco Phillips

Owner: Port of Portland
Zone: IH (Heavy Industrial); Overlay: i (River Industrial)
Comprehensive Plan Designation: IS (Industrial Sanctuary)
Plan District: GS (Guild's Lake Industrial Sanctuary Plan District)
Zone Map: 2423

of F
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DEC 2
Permi

COP0019324

Narrative Summary
Urban Forestry (Street Tree) Review Checklist
Chevron Willbridge Distribution Center and Conoco Phillips Terminal
October 5, 2004

Introduction:

Chevron and Conoco Phillips are proposing to install a sheet pile wall as a source control measure under State of Oregon Department of Environmental Quality (DEQ) Consent Order WMCSR-NWR-94-06. The installation of this wall will replace the existing Holbrook Trench recovery system and eliminate seepage of separate phase hydrocarbon (SPH) from the area of the 27-inch sewer outfall and the Holbrook Slough into the Willamette River, enhance recovery of SPH, and control the flow of dissolved-phase petroleum hydrocarbons in groundwater to the river. During high river flow events, SPH and dissolved phase petroleum hydrocarbons could migrate into the Willamette River. The proposed sheet pile wall will meet the DEQ requirements for upland source control of contaminants to the Willamette River. In addition, the mitigation of the SPH seeps will help protect, conserve, enhance, and maintain the natural, scenic, historical, economic, and recreational qualities of lands along Portland's rivers and it provides for a more aesthetically pleasing environment along the Willamette River.

Proposed Project:

Similar projects have been completed in the area of the Site, with the most recent having been completed in 2001 at a 60 inch sewer outfall. The City of Portland Land Use Review Case Number for this project is LUR 01-00517 GW. During these projects, trees have been planted in all available locations along the frontage roads. Currently, an application for Greenway Review has been submitted to the City of Portland Bureau of Development Services (Case Number LU 04-045492 GW). Mr. Mark Walhood has been the primary contact for the Greenway Review. Ms. Rondi Felton of the City of Portland Bureau of Environmental Services Industrial Source Control Division has been contacted regarding the proposed work near the abandoned 27 inch sewer pipeline.

The purpose of the project is to mitigate potential migration pathways for groundwater seeps to the Willamette River by constructing a barrier wall and installing an extraction system on the landward side of the wall to remove SPH. The potential migration pathways include the alignment of an abandoned sewer and the former Holbrook Slough. The sheet pile wall has been proposed as a remedial measure to eliminate seepage of SPH from the area of the 27-inch sewer outfall and the Holbrook Slough into the Willamette River, enhance recovery of SPH, and to control the flow of dissolved-phase petroleum hydrocarbons in groundwater to the river. Chevron and Conoco Phillips propose to replace the existing recovery system with a new sheet pile wall and SPH recovery system that has been designed to encompass the mouth of the historic Holbrook Slough and for continuous operation that will not be affected by river flow stages. The sheet pile cutoff wall is necessary because multiple seeps have been observed in this area, and it is not effective to attempt to identify the source of individual seeps. Accordingly, the most effective solution to the problems at this site is to install the wall to cutoff migration pathways and to collect any SPH or dissolved phase petroleum hydrocarbons in a trench recovery system. Please see the attached "*Proposed Source Control Measure*" for a detailed description of the proposed project.

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Number

COP0019325

RSV
ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists

October 4, 2004

City of Portland
APPROVED
DEC 2 8 2004
Permit Number

Mr. Gerald O'Regan
ChevronTexaco
P.O. Box 6001, Building K, Room 2216
San Ramon, California 94583-2324

Re: PROPOSED CUTOFF WALL
Chevron/ConocoPhillips - Willbridge Former 27-Inch Storm Sewer Area
NW Front & NW Doane Avenue
Portland, Oregon

Dear Mr. O'Regan:

The purpose of this letter is to present a summary of the slope stability evaluation for the Proposed Cutoff Wall at the Willbridge Former 27-Inch Storm Sewer Area. Design elements of the proposed cutoff wall are shown on drawings prepared by RSV Engineering, Inc. (August 2004). Wall pressure loads applicable to the exposed wall face portion of the wall retaining proposed fill and resistance pressures (active earth pressure loading and passive earth pressure resistance) are also estimated.

Slope Stability Evaluation

An evaluation was made of the slope in the project area adjacent to the Willamette River, with the addition of the proposed wall and retained fill. Temporary construction loads were included in a stability analysis as part of the evaluation.

The existing slope has a bench approximately 14 feet in width at approximate elevation 14 feet. The existing slope above the bench is approximately 20 feet in height with a slope of approximately 1.5(H):1.0(V) and with a slope of approximately 1.2:1.0 below the bench downward to river level. It is my understanding that the existing slope has stood for over 30 years and at this time shows no obvious visible signs of instability.

Three soil borings were conducted in March 2004 from the top of the slope, by RSV Engineering, Inc., to explore subsurface conditions of the slope. Logs for these three soil borings are attached (Attachment A). Soil laboratory tests were conducted on selected soil samples recovered during drilling and sampling of the soil borings in order to obtain properties of in-situ soils in the slope. In general, borings indicated granular soils overlying intermediate silts, the top of which are just below the bench. Earlier this year, a water level was recorded just above the top of the intermediate silt zone.

31960 S.W. Charbonneau Dr., Suite 101 • Wilsonville, OR 97070
phone: 503.694.6960 • fax: 503.694.6962

COP0019326

A stability analysis was performed on a critical cross-section through the area of the proposed wall. The section was taken approximately perpendicular to the Willamette River looking in the upstream direction. The ground surface was taken from a partial topography survey at the Willbridge Terminal, dated March 26, 2004, by Chase, Jones & Associates, Inc., registered professional land surveyors. Subsurface conditions were estimated based upon the borings mentioned above. A slope stability analysis of the section was conducted with XSTABL© Version 5 with circular surface search and Simplified Bishop Method features. Three cases analyzed were: construction loading at the top of slope, existing conditions, and proposed permanent conditions. It was found that the factors of safety against a slope shear failure for these three cases were within approximately one percent.

Based upon the results of the soil borings, soil laboratory testing, and stability analysis, it was concluded that between construction conditions, existing conditions, and conditions proposed for permanent improvement, *i.e.* with the addition of the wall and retained fill, there was not a substantial change in the stability of the existing slope.

Wall Pressures

With respect to wall pressures, an active earth pressure loading of 33 psf/ft of depth was estimated based upon $\phi = 36°$, an active earth pressure coefficient (k_a) of 0.26, and a moist unit weight (γ_m) of 125 pcf, for Sand Fill. Similarly, active earth pressures of 38 and 13 psf/ft and passive earth pressures of 390 and 114 psf/ft were estimated for in-situ sand and silt, respectively, with a water level approximately at the top of silt. A pressure distribution diagram for the proposed wall is attached (Attachment B), as well as an evaluation of the wall's embedment length.

Please do not hesitate to let me know if additional information is required or if there are any questions on the analyses and evaluations performed.

Sincerely,
RSV ENGINEERING, INC.

Brad J. Berggren, P.E., R.G.
Principal Engineer/Vice President

REGISTERED PROFESSIONAL ENGINEER
17839PE
OREGON
JULY 25, 1995
BRAD J. BERGGREN
EXPIRES: 12/31/05

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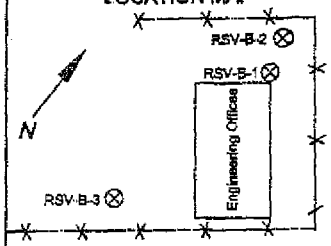
ATTACHMENT A
SOIL BORING LOGS

RSV ENGINEERING, INC.
31960 SW Charbonneau Drive, #101
Wilsonville, Oregon 97070
TEL (503) 694-6960
FAX (503) 694-6962

LOCATION MAP

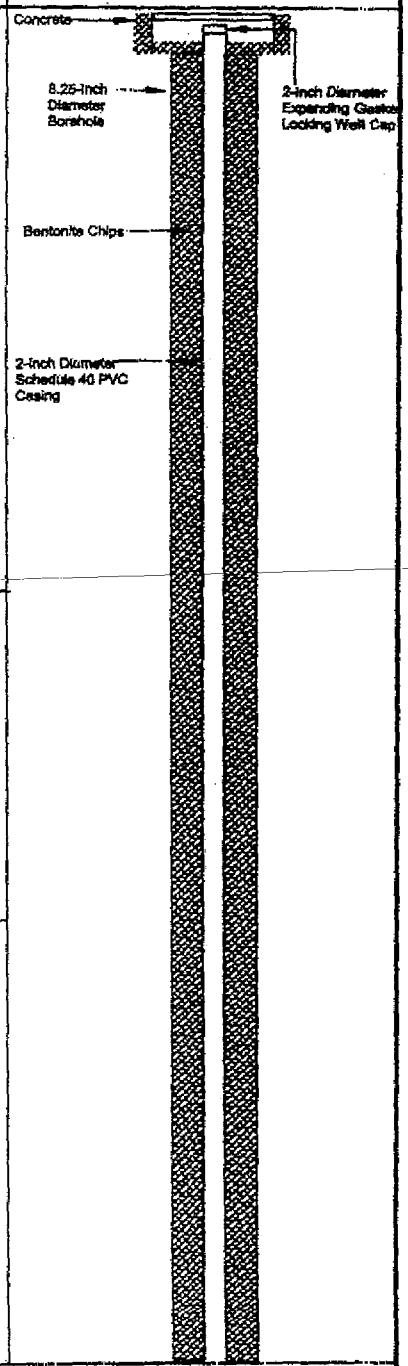


WELL/BORING NUMBER RSV-B-1

PROJECT NAME: 27-Inch Pipeline Cut-off Wall
PROJECT NUMBER: 02-158
LOCATION: Chevron/Texaco Willbridge Terminal
LOGGED BY: Dan Becraft
REVIEWED BY: Brad Berggren
DATE: 3/31/04 - 4/1/04

SAMPLE TYPE	BLOW COUNTS	PID (ppm)	First Water	LAB SAMPLE I.D.	DEPTH (ft) bgs	STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral, Size, Density or Consistency, Moisture, Odor, Geological Interpretation)
	50-1"						GM	Silty Gravel with Sand (GM) gray, subangular occasional cobble, moist, very dense
	28 33 38 22 30							
	32 37			RSV-B-1 @5'	5			Pushed cobble no sample
SS	35 34							Pulled sampler and removed cobble.
	50-6"							Shallow rocks pushing augers off hole, pulled out augers and removed rocks by hand, resumed with 6.5" ID augers.
	10 12 8 7 8							
SS	12 20 16 15 10			RSV-B-1 @10'	10			Shelby tube crushed, no sample.
	12 20 16 10 12 16							
SS	6 5 6 8 7 8			RSV-B-1 @15'	15		SP	Sand (SP), gray, fine-medium grained, loose, wet
	11 9 3 8		▽					
SS	8 6			RSV-B-1 @20'	20			As Above Shelby Tube from 21 - 23'
	12 6 6 8							Silt (ML), greenish gray, soft, wet
SS	1 2 1 1 2 3 3 5			RSV-B-1 @25'	25			
SS	8 4 5 5 1 2 3 5 9 5 6 6			RSV-B-1 @30'	30			@ 30': brown

BOREHOLE/WELL CONSTRUCTION DETAIL



DRILLING CONTRACTOR: GeoTech Explorations
DRILLING METHOD: Hollow-Stem Auger
SAMPLING METHOD: Split Spoon
DRILLING START TIME: 9:00
DRILLING END TIME:13:00

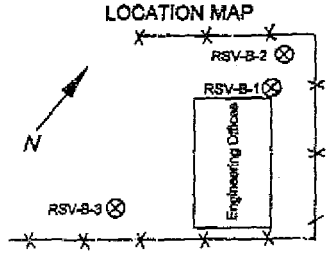
WELL ID TAG: L67967
WELL START CARD NO.: 164581
RIM ELEVATION:
CASING ELEVATION:
DATUM:

TIME	DATE	DTW

COP001932

RSV ENGINEERING, INC.
31960 SW Charbonneau Drive, #101
Wilsonville, Oregon 97070
TEL (503) 694-6960
FAX (503) 694-6962

LOCATION MAP



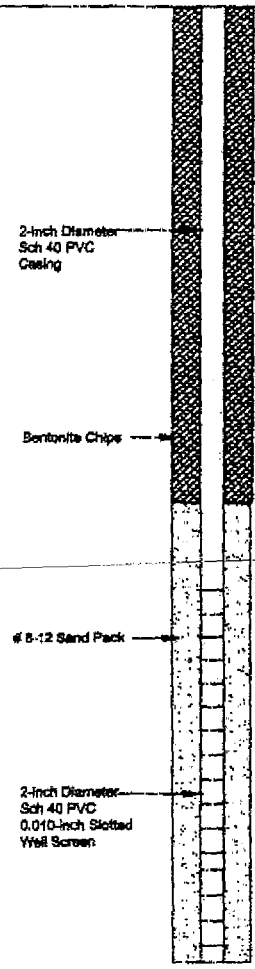
WELL/BORING NUMBER RSV-B-1

PROJECT NAME: 27-Inch Pipeline Cut-off Wall
PROJECT NUMBER: 02-158
LOCATION: Chevron/Texaco Willbridge Terminal
LOGGED BY: Dan Becraft
REVIEWED BY: Brad Berggren
DATE: 3/31/04 - 4/1/04

SAMPLE INFORMATION

SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH (bgs ft)	SAMPLE LOCATION	SAMPLE INTERVAL	REC %	STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Size, Density or Consistency, Moisture, Odor, Geological Interpretation)
	4				RSV-B-1 @35'	35					ML	Shelby Tube from 35' - 37'
	5						SS					
	6											
	6											
	4											
	4											
	5											
	5											organics: wood fragments
	1											
	3											As Above
	4				RSV-B-1 @40'	40						
	5						SS					
	2											
	3											
	7											
	7											
	3											
	7											
	8											
	11											
	3				RSV-B-1 @45'	45						As Above
	7						SS					
	9											
	12											
	1											
	4											
	9											
	9											
	4											
	7											
	7				RSV-B-1 @50'	50						As Above
	6						SS					
	4											
	6											
	9											
	13											
	3											
	3											
	5											
	10											As Above
	5				RSV-B-1 @55'	55						
	7						SS					
	11											
	23											
	7											
	12											
	14											
	22											
	16											
	8											As Above
	13				RSV-B-1 @60'	60	SS					
						65						

BOREHOLE/WELL CONSTRUCTION DETAIL



DRILLING CONTRACTOR: GeoTech Explorations
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHOD: Split Spoon
DRILLING START TIME: 9:00
DRILLING END TIME: 13:00

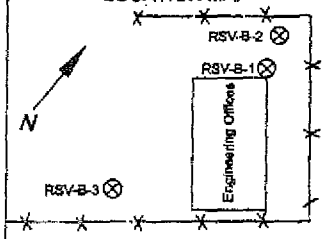
WELL ID TAG: L67967
WELL START CARD NO.: 164581
RIM ELEVATION:
CASING ELEVATION:
DATUM:

TIME	DATE	DTW

COP001933

RSV
ENGINEERING, INC.
31960 SW Charbonneau Drive, #101
Wilsonville, Oregon 97070
TEL (503) 694-6960
FAX (503) 694-6962

LOCATION MAP



WELL/BORING NUMBER **RSV-B-2**

PROJECT NAME: 27-Inch Pipeline Cut-off Wall
PROJECT NUMBER: 02-158
LOCATION: Chevron/Texaco Willbridge Terminal
LOGGED BY: Dan Becraft
REVIEWED BY: Brad Berggren
DATE: 3/30/04

SAMPLE TYPE	BLOW COUNTS	PID (ppm)	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	SAMPLE LOCATION / SAMPLE INTERVAL / REC %	STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Size, Density or Consistency, Moisture, Odor, Geological Interpretation)	BOREHOLE/WELL CONSTRUCTION DETAIL
								GW	Gravel, brown, well graded, occasional cobble, some sand and fines, very dense, dry	
									@3ft : refusal, moved boring 5' toward Front Ave.	
	50-6"				5				Pushed cobble with sampler.	
SS	12/9/8			RSV-B-2 @10'	10				As Above	bentonite
SS	9/10/11			RSV-B-2 @15'	15				As Above	
SS	1/3/5		▽	RSV-B-2 @20'	20			SP	SAND, gray, fine-medium grained, loose, wet.	
SS	3/5/3			RSV-B-2 @25'	25				As Above	
SS	5/6/5			RSV-B-2 @30'	30				SILT, greenish gray, soft, wet.	

DRILLING CONTRACTOR: GeoTech Explorations
DRILLING METHOD: Hollow-Stem Auger
SAMPLING METHOD: Split Spoon
DRILLING START TIME:
DRILLING END TIME:

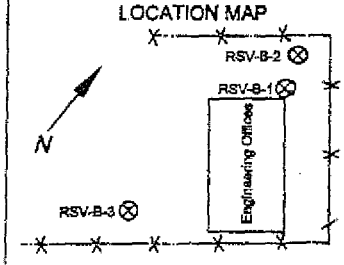
WELL ID TAG:
WELL START CARD NO.:
RIM ELEVATION:
CASING ELEVATION:
DATUM:

TIME	DATE	DTW

COP001933

RSV
ENGINEERING, INC.
31960 SW Charbonneau Drive, #101
Wilsonville, Oregon 97070
TEL (503) 694-6960
FAX (503) 694-6962

LOCATION MAP



WELL/BORING NUMBER **RSV-B-2**
Page 2 of 2

PROJECT NAME: 27-Inch Pipeline Cut-off Wall
PROJECT NUMBER: 02-158
LOCATION: Chevron/Texaco Willbridge Terminal
LOGGED BY: Dan Becraft
REVIEWED BY: Brad Berggren
DATE: 3/30/04

SAMPLE INFORMATION									STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color Grain Size, Plasticity, Shapes, Mineral Size, Density or Consistency, Moisture, Odor, Geological Interpretation)	BOREHOLE/WELL CONSTRUCTION DETAIL
SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	SAMPLE LOCATION	SAMPLE INTERVAL	REC %			
SS	4/8/8				RSV-B-2 @35'	35				ML	gravelly medium SAND gravels to 4"	
SS	4/5/6				RSV-B-2 @40'	40					@40 ft: brown, organics (grasses, wood chips)	
SS	7/13/15				RSV-B-2 @45'	45					As Above	bentonite
SS	6/8/9				RSV-B-2 @50'	50					As Above	
	50-6"					55						
						60						
						65						

DRILLING CONTRACTOR: GeoTech Explorations
DRILLING METHOD:Hollow-Stem Auger
SAMPLING METHOD: Split Spoon
DRILLING START TIME:
DRILLING END TIME:

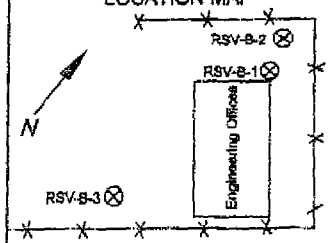
WELL ID TAG:
WELL START CARD NO.:
RIM ELEVATION:
CASING ELEVATION:
DATUM:

TIME	DATE	DTW

COP001933

RSV ENGINEERING, INC.
31960 SW Charbonneau Drive, #101
Wilsonville, Oregon 97070
TEL (503) 694-6960
FAX (503) 694-6962

LOCATION MAP



WELL/BORING NUMBER RSV-B-3

PROJECT NAME: 27-Inch Pipeline Cut-off Wall
PROJECT NUMBER: 02-158
LOCATION: Chevron/Texaco Willbridge Terminal
LOGGED BY: Dan Becraft
REVIEWED BY: Brad Berggren
DATE: 3/30/04

SAMPLE TYPE	BLOW COUNTS	PID (ppm)	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Size, Density or Consistency, Moisture, Odor, Geological Interpretation)	BOREHOLE/WELL CONSTRUCTION DETAIL
	20/20/15				5		GM	Silty Gravel with sand (GM-GW), brown, angular-subangular, dense, moist	
SS	11/9/9			RSV-B-3 @10'	10		SP	Sand (SP), gray, fine-medium grained, loose, wet.	bentonite
SS	6/8/7		▽	RSV-B-3 @15'	15			Shelby Tube from 15' - 17' @ 16': wet	
SS	1/2/3			RSV-B-3 @20'	20			SILT (ML), greenish gray, soft, wet.	
SS	3/5/4			RSV-B-3 @25'	25			As Above	
SS	3/4/5			RSV-B-3 @30'	30			@ 30': brown, some organics	

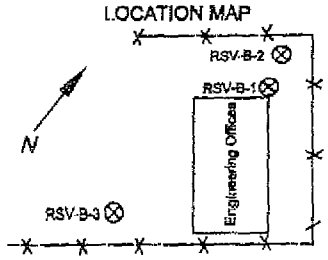
DRILLING CONTRACTOR: GeoTech Explorations
DRILLING METHOD: Hollow-Stem Auger
SAMPLING METHOD: Split Spoon
DRILLING START TIME:
DRILLING END TIME:

WELL ID TAG:
WELL START CARD NO :
RIM ELEVATION:
CASING ELEVATION:
DATUM:

TIME	DATE	DTW

RSV ENGINEERING, INC.
31960 SW Charbonneau Drive, #101
Wilsonville, Oregon 97070
TEL (503) 694-6960
FAX (503) 694-6962

LOCATION MAP



WELL/BORING NUMBER **RSV-B-3**

PROJECT NAME: 27-Inch Pipeline Cut-off Wall
PROJECT NUMBER: 02-158
LOCATION: Chevron/Texaco Willbridge Terminal
LOGGED BY: Dan Becraft
REVIEWED BY: Brad Berggren
DATE: 3/30/04

SAMPLE INFORMATION									STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Size, Density or Consistency, Moisture, Odor, Geological Interpretation)	BOREHOLE/WELL CONSTRUCTION DETAIL
SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH (ft) bgs	SOURCE LOCATION SAMPLE INTERVAL	REC %				
SS	1/4/5				RSV-B-3 @35'	35				ML	As Above	bentonite
SS	4/6/7				RSV-B-3 @40'	40					As Above	
						45						
						50						
						55						
						60						
						65						

DRILLING CONTRACTOR: GeoTech Explorations
DRILLING METHOD: Hollow-Stem Auger
SAMPLING METHOD: Split Spoon
DRILLING START TIME:
DRILLING END TIME:

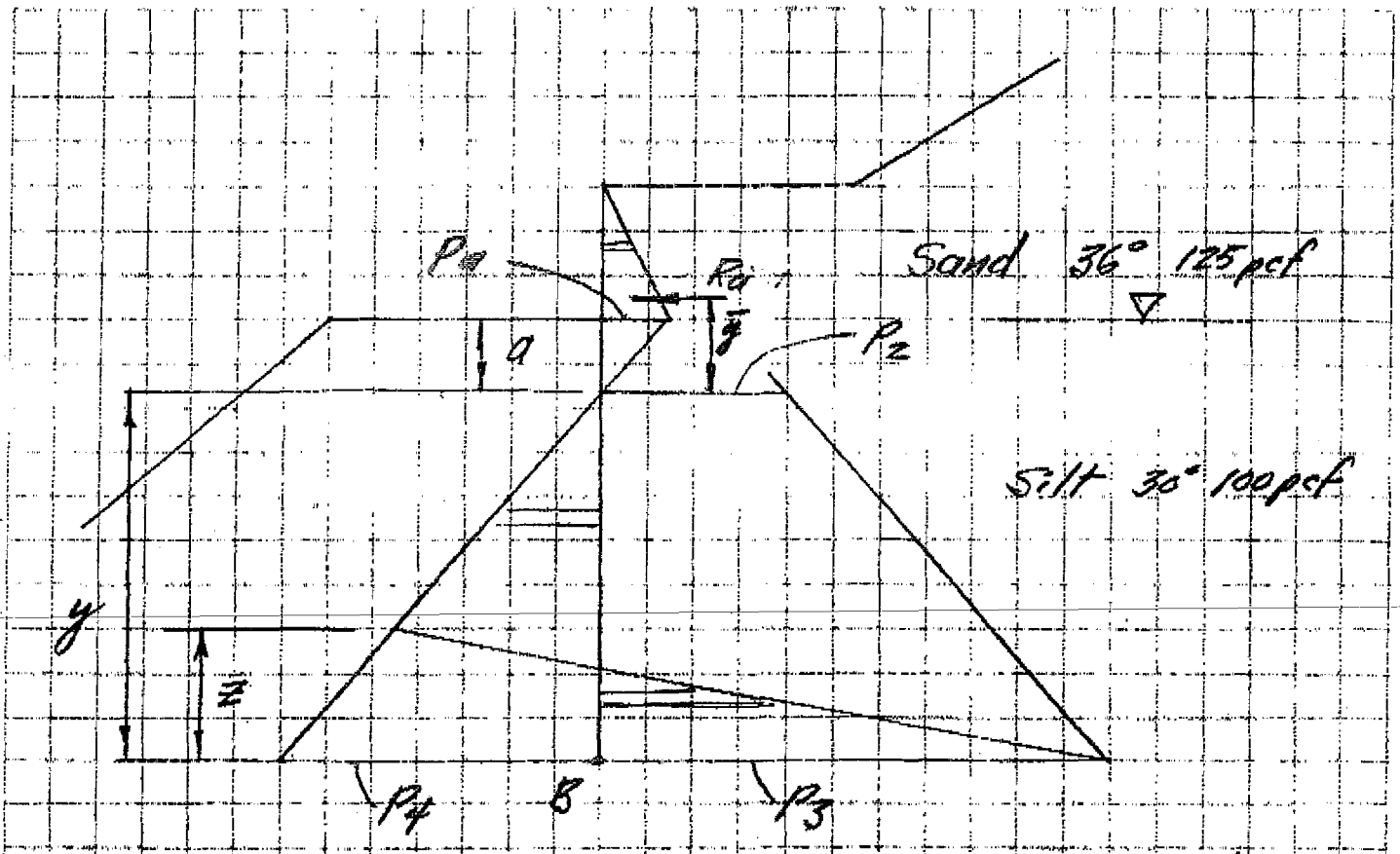
WELL ID TAG:
WELL START CARD NO.:
RIM ELEVATION:
CASING ELEVATION:
DATUM:

TIME	DATE	DTW

ATTACHMENT B
PRESSURE DISTRIBUTION DIAGRAM

BLOOM CONSULTANTS, LLC 1870 North Roselle Road, Suite 101 • Schaumburg, IL 60195 • Phone (847) 781-5353 • Fax (847) 843-3047

Client: RSV Engineering, Inc.		Page: 1
Project: Willbridge Cutoff Wall		Project No: BM3-1118
Calculations For: Sheetpile Wall	Prepared By: Andrew J. Frano	Date: 10-4-04
	Reviewed By:	Date:



Bowles '68 p. 374

$p_a = 33(6) = 198$ psf

$a = \frac{198}{33(3.00 - 0.33)} = 1.95'$

$R_a = \frac{1}{2}(198)(6 + 1.95) = 787.05$ #

$p_2 = 6(125)3.00 + 1.95(33)2.67 = 2447.85$ psf

Bl... irg, IL 60195 • Phone (847) 781-5353 • Fax (847) 843-3047

Post-it® Fax Note 7671	Date 10-4-04	# of pages ▶ 3
To Brad Berggren	From Andy Frano	
Co./Dept. RSV	Co. Bloom	
Phone # (503) 694-6960	Phone # (847) 781-5353	
Fax # (503) 694-6962	Fax # (847) 843-3047	

Client:	Page: 2
Project:	Project No:
Calculation	Date:
	Date:

$$P_3 = P_2 + 38(2.67)y$$

$$P_4 = 38(2.67)y$$

Try $F.S. = 1.5$

$$P_2 = 6(125)\frac{3}{1.5} + 1.95(38)\left(\frac{3}{1.5} - .33\right) = 1623.75 \text{ psf}$$

$$P_3 = P_2 + 38\left(\frac{3}{1.5} - .33\right)y = 1624 + 63.46y$$

$$P_4 = 38\left(\frac{3}{1.5} - .33\right)y = 63.46y$$

$$\Sigma F_x = 0$$

$$R_a + (P_4 + P_3)\frac{z}{2} - P_3\frac{y}{2} = 0$$

$$z = \frac{P_3\frac{y}{2} - R_a(2)}{P_4 + P_3} = \frac{P_3 y + 2R_a}{P_4 + P_3}$$

$$\Sigma M_B = 0$$

$$R_a(y + \bar{y}) + \frac{z}{3}(P_4 + P_3)\frac{z}{2} - P_4\frac{y}{2}\frac{y}{3} = 0$$

COP0019337

BLOOM CONSULTANTS, LLC 1870 North Roselle Road Suite 101 • Schaumburg, IL 60195 • Phone (847) 781-5353 • Fax (847) 843-3047

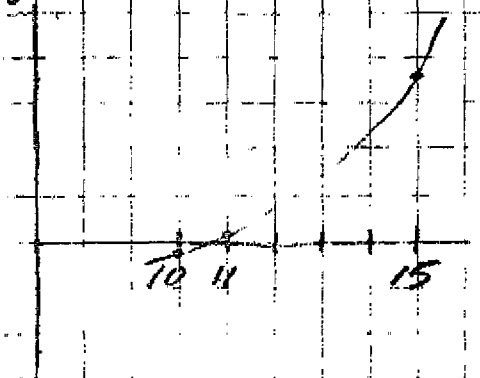
Client:		Page: 3
Project:		Project No:
Calculations For:	Prepared By:	Date:
	Reviewed By:	Date:

$$y^4 + y^3\left(\frac{P_2}{38 \times 1.67}\right) - y^2\frac{6R_a}{63.5} - y\left(\frac{6R_a}{63.5^2}(2y\,63.5 + P_2)\right) - \frac{6R_a y P_2 + 4R_a^2}{63.5^2} = 0$$

$$\bar{y} = \frac{6 + 1.95(2)}{3} = 3.3'$$

$$y^4 + y^3(25.6) - y^2(99.2) - y(3392.7) - 6,890.8 = 0$$

y	f(y)
15	71,923.7
10	-5,137.8
11	3,500.9



Required embedment for FS of 1.5 = 1.95 + 10.60

= 12.55' < 20' ok

SAIC
An Employee-Owned Company

September 22, 2004
Project 06-6102-00-3980-285
DCN No.: CO3-SAI-1001868-01-05933

Mr. Mark Walhood
City of Portland, Bureau of Development Services
Land Use Review
1900 SW 4th Avenue, Suite 4500
Portland, Oregon 97201

RE: Landscape Plan for the Proposed Source Control Measure

Chevron Willbridge Distribution Center
5331 NW Doane Avenue
Portland, Oregon
and
Conoco Phillips Terminal
5528 NW Doane Avenue
Portland, Oregon
DEQ WMCSR-NWR-94-06

Dear Mr. Walhood:

In accordance with your September 15, 2004 letter regarding Land Use Review (LU-045492 GW), Science Application International Corporation (SAIC) has prepared the attached Landscape Plan. As stated in your letter, one tree was selected for every 20 feet of river frontage, and one shrub was selected for every 2 feet of river frontage. Because the entire area is covered with a flexible pavement, no groundcover will be required.

Requirements set forth by the US Coast Guard dictate that trees may not be planted near security fences. Based on this requirement, trees and shrubs will be planted in a clustered area along the upland portion of the source control wall on the ConocoPhillips portion of the project area. The approximate location and species of tree or shrub is identified on the attached Landscape Plan. As specified in the City of Portland's Tree and Landscaping Manual, tree size will be a minimum of 2 inches and shrubs will be a minimum of 2 gallons. Irrigation will be completed by hand methods until the plants are established.

If you have any questions or need additional information, please contact Kevin Schleh (503) 243-2070.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Kevin Schleh, R.G.
Senior Project Manager

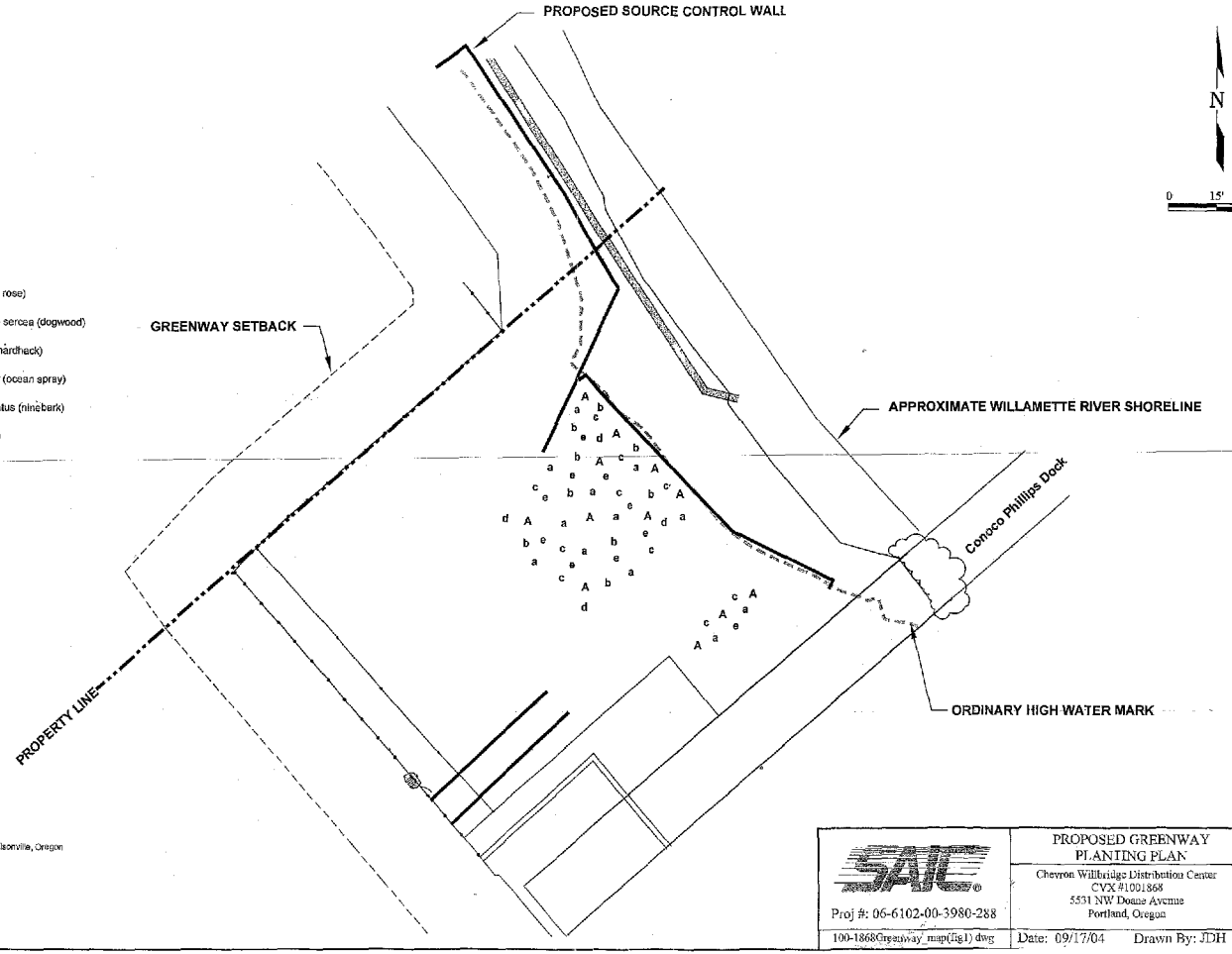
City of Portland
APPROVED
DEC 28 2004
Permit Number

04.052771.00

City of Po
APPRO
DEC 2
Permit

Science Applications International Corporation
220 SW Morrison Avenue, Suite 500 | Portland, Oregon 97205 | tel: 503.243.6175 | fax: 503.243.1863 | www.saic.com

COP0019339



TES

Map Provided by RSV Engineering Wilsonville, Oregon

tland
VED
2004

SAIC	PROPOSED GREENWAY PLANTING PLAN	FIGURE
Proj #: 06-6102-00-3980-288	Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon	1
100-1868Greenway map(fig1).dwg	Date: 09/17/04 Drawn By: JDH	

PROPOSAL FOR SOURCE CONTROL MEASURE

Chevron Willbridge Distribution Center
5531 NW Doane Avenue
Portland, Oregon
And
Conoco Phillips Terminal
5528 NW Doane Avenue
Portland, Oregon

DEQ WMCSR-NWR-94-06

August 13, 2004

Prepared for:

ChevronTexaco

6001 Bollinger Canyon Road K2240
San Ramon, CA 94583

Prepared by:

SAIC®
An Employee-Owned Company

Science Applications International Corporation
1220 SW Morrison Avenue, Suite 500
Portland, Oregon 97205

City of Portland
APPROVED
DEC 28 2004
Permit Number

Contract No. 99014508
SAIC Project 06-6102-00-3980-285

04-052768 & 04-052770

PROPOSAL FOR SOURCE CONTROL MEASURE

Chevron Willbridge Distribution Center
5531 NW Doane Avenue
Portland, Oregon
And
Conoco Phillips Terminal
5528 NW Doane Avenue
Portland, Oregon

DEQ WMCSR-NWR-94-06

August 13, 2004

Prepared by:

An Employee-Owned Company
Science Applications International Corporation
1220 SW Morrison Avenue, Suite 500
Portland, Oregon 97205

Kevin Schleh, R.G.
Senior Project Manager

Gerard Koschal, R.G.
Senior Geologist

SAIC Project 06-6102-00-3980-285
DCN: C03-SAI-1001868-01-05715

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2.0 **INTERIM INVESTIGATION AND REMEDIAL MEASURES** 2

3.0 **PROPOSED PROJECT** 4
3.1 New Wall Design 4

4.0 **SCHEDULE** 6

5.0 **CONCLUSION** 6

6.0 **LIMITATIONS** 6

FIGURES

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Figure 2 Historic Site Features
Figure 3 1988 Holbrook Trench Recovery System
Figure 4 May 2002 Geoprobe Boring Location Map
Figure 5 June/August 2002 Test Pit Location Map
Figure 6 Monitoring Well Location Map

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Table 2 Summary of Soil Analytical Data from June 2002 Test Pits – VOCs
Table 3 Summary of Soil Analytical Data from June 2002 Test Pits – PAHs
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Table 8 Summary of Groundwater Analytical Results – PAHs
Table 9 Summary of Groundwater Analytical Results – Total Metals

APPENDICES

Appendix A Summary of Historic Boring and Test Pit Logs

ATTACHMENTS

Attachment A Sheet Pile Wall Engineering Design

1.0 INTRODUCTION

Science Applications International Corporation (SAIC) is submitting this proposal to the Oregon Department of Environmental Quality (DEQ) for the installation of a sheet pile wall as a source control measure at the Chevron (Chevron) Willbridge Distribution Center and the Conoco Phillips Terminal in Portland, Oregon (Figure 1). Chevron and Conoco Phillips are requesting DEQ approval to install the wall as a source control measure under DEQ Consent Order WMCSR-NWR-94-06.

The purpose of the wall is to mitigate potential migration pathways for groundwater seeps to the Willamette River. The potential migration pathways include the alignment of an abandoned sewer and the former Holbrook Slough. The location of the proposed wall is at river mile 7.8 along the west bank of the Willamette River between the Chevron and Conoco Phillips docks. The property is owned by the Port of Portland and the Oregon Division of State Lands, and is leased to Chevron and Conoco Phillips.

1.1 Background

Portions of the Chevron and Conoco Phillips terminals overlie the historic Holbrook Slough and Kittridge Lake. A silt ridge (natural levee) separated Kittridge Lake from the Willamette River. As the Holbrook Slough formed, it cut through the silt ridge, connecting Kittridge Lake to the Willamette River. With development of the terminals, the Holbrook Slough and Kittridge Lake were filled with dredge sand. During this period of development, a sewer pipe was constructed parallel to NW Doane Avenue with an outfall at the mouth of the Holbrook Slough. In 1927, the sewer was replaced with a 27-inch diameter wood stave sewer (27-inch sewer).

Separate phase hydrocarbons (SPH) have been observed being conveyed through the 27-inch sewer, and seeping from the area around the outfall. In an effort to mitigate these migration pathways, a weir was constructed at the outfall to collect SPH being conveyed through the 27-inch sewer, and absorbent booms were placed in the Willamette River around the area where SPH was observed to be seeping. In 1982, the City of Portland Bureau of Environmental Services (BES) replaced the 27-inch sewer with a 60-inch diameter concrete storm water pipeline located south of the Conoco Phillips dock (Figure 2). The BES reportedly abandoned the 27-inch sewer and outfall by filling them with concrete. After the 27-inch sewer and outfall had been abandoned, SPH was periodically observed seeping from the area around the outfall.

In 1988, at the direction of DEQ, the Holbrook Trench recovery system was installed to intercept and prevent seepage of SPH into the Willamette River (Figure 3). The Holbrook Trench recovery system is comprised of a barrier wall with a synthetic liner, two trenches, and a recovery sump. At installation, the system recovered SPH and effectively minimized seepage into the river. The system was operated continuously until 1992, and intermittently until 1997. By 1997, SPH seepage was only observed during periodic events that occurred with specific flow conditions in the Willamette River. The system was not operated between 1997 and 2001. Since 2001, the system has been used during periods of low river flow.

Based on the results of prior site investigations and remedial efforts, SPH appears to be migrating through the dredge sand fill in the historic channel of the Holbrook Slough, periodically seeping into the Willamette River from the area of the 27-inch sewer outfall.

2.0 INTERIM INVESTIGATION AND REMEDIAL MEASURES

Since 1997, SPH has been observed to seep from the area around the 27-inch sewer outfall during stages of low river flow, and when the river flow decreases from high stages at an approximate elevation of 16 feet to an approximate elevation of 11 feet. Globules of SPH are observed in the river beyond the existing trench system during low flow stages. When the river flow decreases from high to low flow conditions, SPH is observed seeping from the toe of the Chevron rip rap slope. Based on these observations, the SPH migration appears to be affected with specific changes in river flow levels.

2001

In the summer of 2001, the Holbrook Trench recovery system was re-started to conduct a groundwater pumping test. The recovery sump was operated at a pump removal rate of three gallons per minute to assess groundwater drawdown in and around the Holbrook Trench recovery system. As the river stages increased during the winter months, the river flow rose over the top of the barrier wall of the Holbrook Trench recovery system at an elevation of approximately 11 feet. At this point, the recovery system was inundated with river water and the system was shut down. Based on observations from operating the recovery system and the river flow conditions exhibiting SPH seepage, a new barrier wall and recovery system were proposed to replace the Holbrook Trench recovery system to eliminate SPH seepage and improve the future remedial efforts.

2002

The Holbrook Trench recovery system was operated in the summer of 2002 after river levels fell below an elevation of 11 feet. Several phases of sub-surface exploration were completed to assess the feasibility of the proposed wall system, and to begin the design process. Delta Consultants provided the environmental services during this time period. A summary of exploratory boring and test pit logs are provided in Appendix A.

On May 8, 2002, 19 exploratory geoprobe borings were drilled in an effort to define the contact of the dredge sand fill material and native silt in the Holbrook Slough, and to identify the alignment of the abandoned 27-inch sewer pipeline (Figure 4). The results of this exploration provided a baseline delineation of the fill material within the slough, including mapping a depression in the silt ridge south of the inferred location of the 27-inch sewer outfall. The location of the 27-inch sewer pipeline was not identified during this phase of exploration. Due to limiting factors associated with geoprobe sampling methodology, sample recovery was observed to be poor and the exact elevation of the dredge sand/silt contact was not determined

On June 24, 2002, 13 exploratory test pits were excavated parallel to the river between an elevation of 18 and 22 feet, and near the inferred confluence of the 27-inch sewer outfall and Holbrook Slough, to supplement the findings of the geoprobe exploration and to continue efforts to identify the alignment of the 27-inch sewer (Figure 5). The test pits allowed for better observations of sub-surface conditions for the identification of the contact of the dredge sand and silt, and characterization of petroleum hydrocarbon impacts in the area of the former Holbrook Slough at the boundary between the Chevron and Conoco Phillips properties. Groundwater was observed to seep from the dredge sand fill in the test pits at a slow rate (less than 1 gallon per minute), with an increase in flow to moderate rates (1 to 3 gallons per minute) at lower elevations where it is influenced by the river. SPH was only encountered in the dredge sand fill extending from the base of the rip rap slope, and measurable thicknesses of SPH were only encountered in test pits

completed at the base of the slope. The native silt was not observed to be impacted by petroleum hydrocarbons and was observed to be moist. These observations indicated that groundwater encountered in the dredge sand fill is perched above the native silt, and that SPH is confined to the channel of the historic Holbrook Slough. The alignment of the abandoned 27-inch sewer pipeline was not identified during this phase of exploration; however, pieces of vitreous clay pipe were encountered and were suspected to be remnants of the sewer line replaced by the 27-inch sewer.

Six soil samples were collected from the dredge sand at the contact with the native silt for laboratory analyses of gasoline range petroleum hydrocarbons by North West Method NWTPH-Gx, and diesel range petroleum hydrocarbons by North West Method NWTPH-Dx, and volatile organic compounds (VOC's) by Environmental Protection Agency (EPA) Method 8260B. The analytical results are summarized in Tables 1 through 5. The analytical results showed detection diesel range petroleum hydrocarbons and VOC's in soil samples T-1, T-6, T-7 and T-8. Based on the results for soil samples T-1 and T-8, follow-up analyses were performed for polynuclear aromatic hydrocarbons (PAH's) by EPA Method 8270C SIM, heavy metals by EPA 6000/7000 series Methods, and polychlorinated biphenyls (PCB's) by EPA Method 8082.

The results of laboratory analysis showed the presence of diesel range petroleum hydrocarbons and associated fractions of VOC's and PAH's in T-1, T-6, T-7 and T-8. Low concentrations of gasoline range petroleum hydrocarbons were detected in T-6 and T-7, however, based on the setting where the impacts are present, these detections may be anomalous as a result of fractionation or degradation of the diesel range petroleum hydrocarbons. The follow-up analyses for heavy metals and PCBs showed no detection at or above the respective method detection limits. The analytical results for T-8 showed a detection of diesel range petroleum hydrocarbons at 20,600 milligrams per kilogram (mg/kg). It was later observed that test pit 8 (where T-8 was collected) was excavated in the backfill of the Holbrook Trench recovery system. Because T-8 was collected from a trench backfill designed to intercept and impound SPH along an extended area, the analytical results probably do not accurately represent subsurface conditions and should not be utilized to assess SPH migration. The analytical results suggest that SPH is migrating through the dredge sand fill along the inferred alignment of the 27-inch sewer.

In June 2002, 3 monitoring wells were installed in the beach area of the Conoco Phillips property (Figure 6). Well U-10 (4-inch diameter, 25 foot depth) was installed as a pump test well to determine potential infiltration for a recovery system, and wells U-11 and U-12 were installed to determine vertical groundwater flow. No SPH was observed in these wells. A pump test was initiated in U-10; however, after a short period the well was pumped dry.

In August 2002, 5 additional exploratory test pits were excavated parallel to the river at an approximate surface elevation of 15 feet to assess subsurface conditions along the alignment of the proposed wall at the base of the rip rap slope (Figure 5). Petroleum hydrocarbon affected soil and perched groundwater were observed in the dredge sand fill material of the Holbrook Slough along the contact with the native silt, near the base of the Chevron rip rap slope on Conoco Phillips property. To test the feasibility of using a pneumatic belt skimmer to remove SPH, approximately 47 tons of impacted soil was excavated from the area of the former 27-inch sewer outfall (Figure 6). The excavation was backfilled with washed, 1- to 2-inch diameter, rounded drain rock to form a sump. Two temporary 12-inch diameter recovery sumps were installed in the drain rock to intercept SPH infiltration. SPH did not accumulate in the sumps, and the use of removal actions with a belt skimmer were considered unfeasible. Based on these investigations, a sheet pile wall with a top elevation of 16 feet was selected as the remedial option.

2003 to Present

In February 2003, Chevron assigned this project to SAIC. During the spring runoff in April 2003, the river flow stages rose above the top of the Holbrook Trench recovery system. A sheen was observed contained in the boom area in the Willamette River. Stain on the rip rap slope indicated that SPH was seeping at a higher elevation than the top elevation of the proposed sheet pile wall. The proposed design was re-evaluated, and the top elevation of the wall was modified to 20 feet.

The Holbrook Trench recovery system re-started in the summer of 2003 and was operated until December 2003 as a continued effort to mitigate SPH seepage. Since December 2003, SAIC has been performing weekly groundwater monitoring, maintenance of the passive recovery system, and maintaining the absorbent booms in the Willamette River. In February 2004, SAIC installed absorbent socks in the recovery sumps to remove SPH, and has been monitoring this system during the weekly site visits. During these site visits, the absorbent socks are removed from the sumps and are wringed out to recover any SPH that may have accumulated. Typically, about one gallon of SPH and water is recovered from the socks, which is subsequently transferred into a treatment system at the Chevron facility.

Groundwater samples have been collected from select monitoring wells for analysis of benzene, toluene, ethyl-benzene and total xylene (BTEX) by EPA Method 8021, PAH's by EPA Method 8270C SIM and total metals by EPA 6000/7000 Series Methods. A summary of the analytical results are presented in tables 6 through 9. A review of the analytical data and well measurements show that small amounts of SPH have been measured in B-7, and low concentrations of BTEX and PAH's have been detected in B-7, P-2, U-10, U-11 and U-12. Total metals have been detected in all of the wells in the monitoring network, and appear to be at concentrations with normal background levels.

In July 2004, the Holbrook Trench recovery system was re-started, and is operating at an approximate removal rate of 4 gallons per minute.

3.0 PROPOSED PROJECT

The sheet pile wall has been proposed as a remedial measure to eliminate seepage of SPH from the area of the 27-inch sewer outfall and the Holbrook Slough into the Willamette River, enhance recovery of SPH, and to control the flow of dissolved-phase petroleum hydrocarbons in groundwater to the river. Chevron and Conoco Phillips propose to replace the existing recovery system with a new sheet pile wall and SPH recovery system that has been designed to encompass the mouth of the historic Holbrook Slough and for continuous operation that will not be affected by river flow stages.

3.1 New Wall Design

The sheet pile wall was engineered and designed by RSV Engineering Incorporated. The concept of this design is to eliminate SPH migration through the dredge sand fill in the Holbrook Slough by driving the steel sheet piles through the fill and embedding the bottom into the underlying silt ridge. A copy of the design plans are provided in Attachment A, and the design details are discussed below.

The design of the proposed sheet pile wall is presented on 10 sheets in the attached plan set. Sheets 1 and 2 contain general information about the project location and construction details. Additional

Project Notes on Sheet 2 specify acceptable construction materials that may be used, including sheet pile make and model, use of watertight seals, and the gradation of sand backfill in the collection trenches. Sheet 3 illustrates the area of the project Site, showing the location of the Willamette River, surrounding terminals and docks, 60-inch storm sewer, and the approximate location of the 27-inch sewer. Sheet 4 shows the existing site features including the property boundaries, the ordinary high water mark at an elevation of 16 feet, the chevron rip rap slope, and the location of the existing Holbrook Trench recovery system.

Sheets 5 and 6 show the alignment and cross section of the proposed sheet pile wall (Figure 8). The wall would consist of two sections, with one section extending between Bends A and C (northern section), and the other section extending between Bends D and E (southern section). The northern section would be constructed of 25 foot long sheet piles along a 160 foot long alignment. The sheets would be driven from an approximate surface elevation between 14 and 20 feet, through the dredge sand fill, and would be embedded in approximately 15 feet of native silt with a bottom elevation of -5 feet. The top of this section of the wall would be at an elevation of 20 feet, with the sheet piles extending approximately 7 feet above ground surface between Bends A and B, and would gradually match the existing grade between Bends B and C. The southern wall section would be constructed of 20 foot long sheet piles in a 105 foot long alignment. The top of the sheets would be driven to the ground surface at an elevation of 16 feet, through the dredge sand fill and embedded in the native silt that would be encountered at an elevation between 11 and 4, and would have a bottom elevation of -4 feet.

Sheets 7 and 8 show the collection trench details for both sections of the wall, including vaults and sumps, drainage pipes, fill details, and groundwater release conduits. A trench will be excavated on the up gradient side of both wall sections to intercept SPH and impacted groundwater migrating through the dredge sand fill towards the Willamette River. The trenches will be sloped towards a collection sump that will have two 12-inch diameter PVC extraction sumps that will be completed at finished ground surface with 24-inch concrete vaults. A 4-inch diameter perforated pipe will be placed in the bottom of the trench to enhance drainage towards the extraction sumps, and the trenches will be backfilled with sand to two feet below ground surface. Three 4-inch diameter PVC maintenance sumps will be attached to the perforated drainage pipe at various distances from the extraction sumps that will be completed at finished ground surface with 12-inch concrete vaults. Groundwater release conduits will be installed in the collection sumps to provide a drainage pathway that may be opened at some time in the future for post-remediation monitoring. The top of the trenches will be capped with multi-dimensional rip rap to match the surrounding surface. A non-woven geotextile fabric will be placed around the sand fill to prevent sediment flow that may decrease its desired drainage properties. As shown on Sheet 7, the length of the trench in the northern wall section will be 160 feet long, with the bottom of the collection trench at an elevation of 10 feet, and the bottom of the collection sump at an elevation of 3 feet. Because the sheet pile wall will extend up to 7 feet above existing ground surface, the down slope side of the wall will be covered with multi-dimensional rip rap to match the existing surface. Sheet 8 shows the length of the collection trench behind the south wall section to be 105 feet long, with the bottom elevation of the trench at 6 feet and the bottom elevation of the collection sump at 3 feet. Recovery systems would be installed in the extraction sumps remove any SPH or impacted groundwater that collects in the trenches. The recovery systems would be connected to a redundant network of effluent pipelines, that will allow the capability for groundwater treatment at compounds located at either the Chevron terminal or Conoco Phillips terminal.

Sheet 9 illustrates the final grading around the northern wall section. Fill will be placed to match the top elevation of the wall 20 feet, and will cover the existing Chevron rip rap slope to complete it as a flat area. The down slope side of the protruding sheet pile wall will be covered with multi-dimensional rip rap, with the base of this fill section founding on the slope between the base of the wall and the 13 foot elevation contour (Figure 9). Sheet 10 specifies erosion control materials and methods that will be utilized for this project. A silt fence will be properly notched into the ground surface, and will encompass the down slope area of the project site The base of the silt fence will be at an approximate elevation of 13 feet. The silt fence will wrap around the north side of the project area and to connect with the base of the Chevron rip rap slope, and will wrap around the southern portion of the project area below the Conoco Phillips dock and will extend up-slope to an approximate elevation of 25 feet.

4.0 SCHEDULE

Chevron and Conoco Phillips would like to begin work on this project as soon as possible, in order to have it installed by October 2004.

5.0 CONCLUSION

Chevron and Conoco Phillips are requesting DEQ approval to install a sheet pile wall as a source control measure under DEQ Consent Order WMCSR-NWR-94-06. The installation of this wall will replace the existing Holbrook Trench recovery system and eliminate seepage of SPH from the area of the 27-inch sewer outfall and the Holbrook Slough into the Willamette River, enhance recovery of SPH, and to control the flow of dissolved-phase petroleum hydrocarbons in groundwater to the river. During high river flow events, SPH and dissolved phase petroleum hydrocarbons could migrate into the Willamette River. The proposed sheet pile wall will meet the DEQ requirements for upland source control of contaminants to the Willamette River. In addition, the mitigation of the SPH seeps will help protect, conserve, enhance, and maintain the natural, scenic, historical, economic, and recreational qualities of lands along Portland's rivers and it provides for a more aesthetically pleasing environment along the Willamette River.

6.0 LIMITATIONS

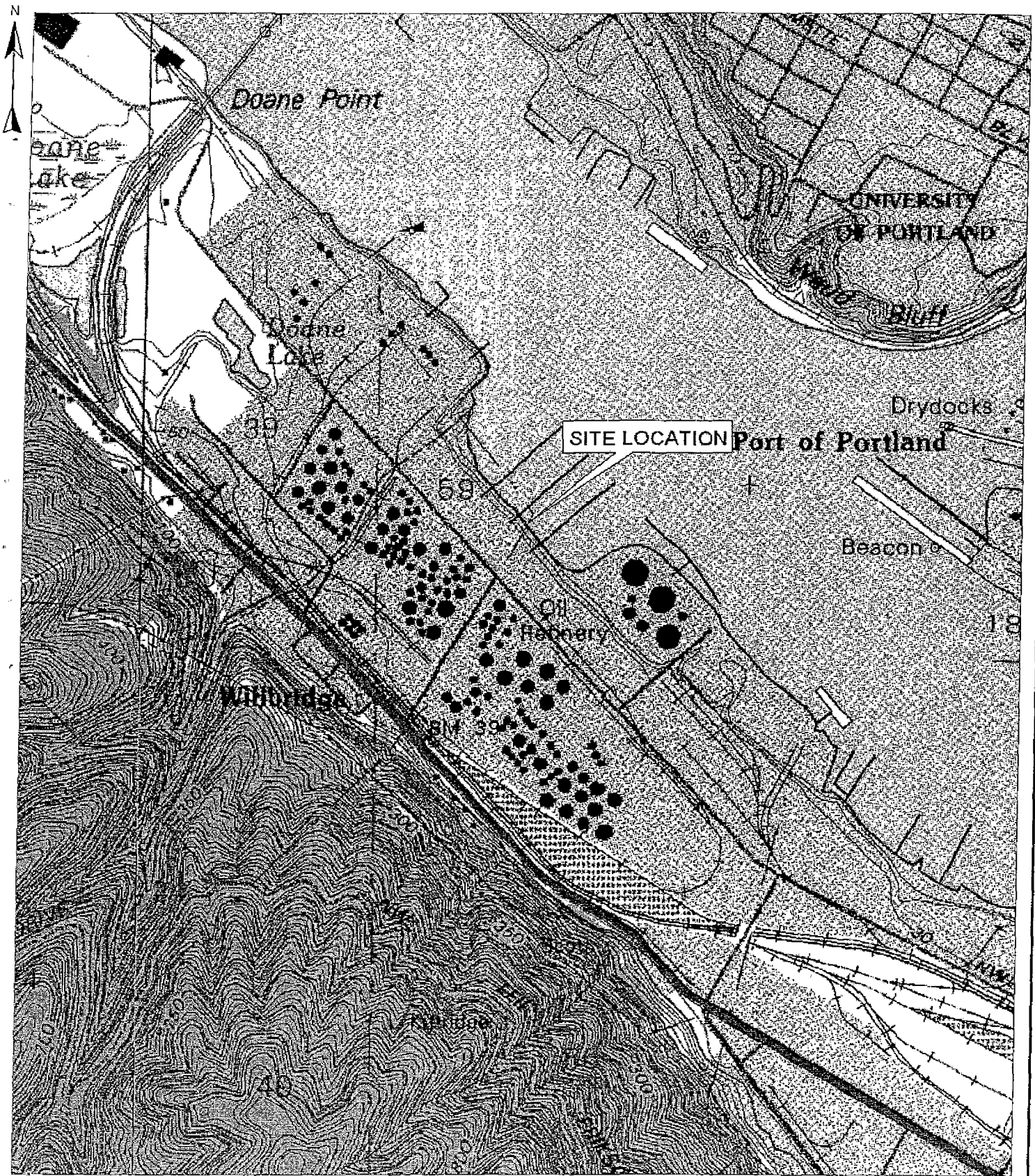
This proposal has been prepared by Science Applications International Corporation (SAIC) for the sole and exclusive use of Chevron. This proposal is not intended for use or reliance by any other party. Any other person or entity obtaining, using, or relying on this proposal hereby acknowledges that they do so at their own risk, and that SAIC shall have no responsibility or liability for the consequences thereof. This proposal is intended to be used in its entirety. Taking or using in any way excerpts from this proposal is not permitted. Excerpts, which are taken out of context, run the risk of being misinterpreted and are, therefore, not representative of the findings of this assessment.

In preparing this proposal, SAIC has relied on verbal and written information provided by secondary sources and interviews. Because the assessment consisted of evaluating a limited supply of information, SAIC may not have identified all potential items of concern and/or discrepancies. SAIC has made no independent investigations concerning the accuracy or completeness of the information relied upon. SAIC cannot and does not guarantee the authenticity or reliability of the information on which conclusions and judgments in this proposal are based In addition, conclusions and judgments may be formed based on conditions at the time of the assessment not being representative of the manner in which business is conducted, past business practices, and/or

changing conditions since the time of the on-site part of the assessment. To the extent that SAIC has, in whole or in part, based any conclusions or judgments in this proposal on such information, the conclusions and judgments are contingent on the validity of the information provided. A full and complete determination as to whether or not the subject property is free from environmental contamination cannot be made under the scope of this investigation, SAIC is not making such a determination, either expressed or implied, in this proposal and any such reliance by Chevron is at Chevron's own risk.

SAIC warrants only that project activities under this contract have been performed, within the parameters communicated by Chevron, with that degree of skill and judgment normally exercised by recognized professional firms performing services of a similar nature and that SAIC has documented findings in an objective and technically defensible manner. SAIC specifically disclaims and client waives any expressed or implied standards, guarantees, or warranties, including but not limited to warranties of merchantability or fitness for a particular purpose, custom or usage, or otherwise as to any goods or services that are the subject of this contract.

FIGURES



Scale 1:25,000

Reference:
Topographic Map from
Delorme® 3-D Topo Quads - 2002
from USGS Topographic Map
Portland, OR-WA - 1995

SAIC®

Proj #: 06-6102-00-3980-288

100-1868figure1 dwg

SITE LOCATION MAP

Chevron Willbridge Distribution Center
CVX #1001868
5531 NW Doane Avenue
Portland, Oregon

Date: 8-8-04 Drawn By: JDH

FIGURE
1

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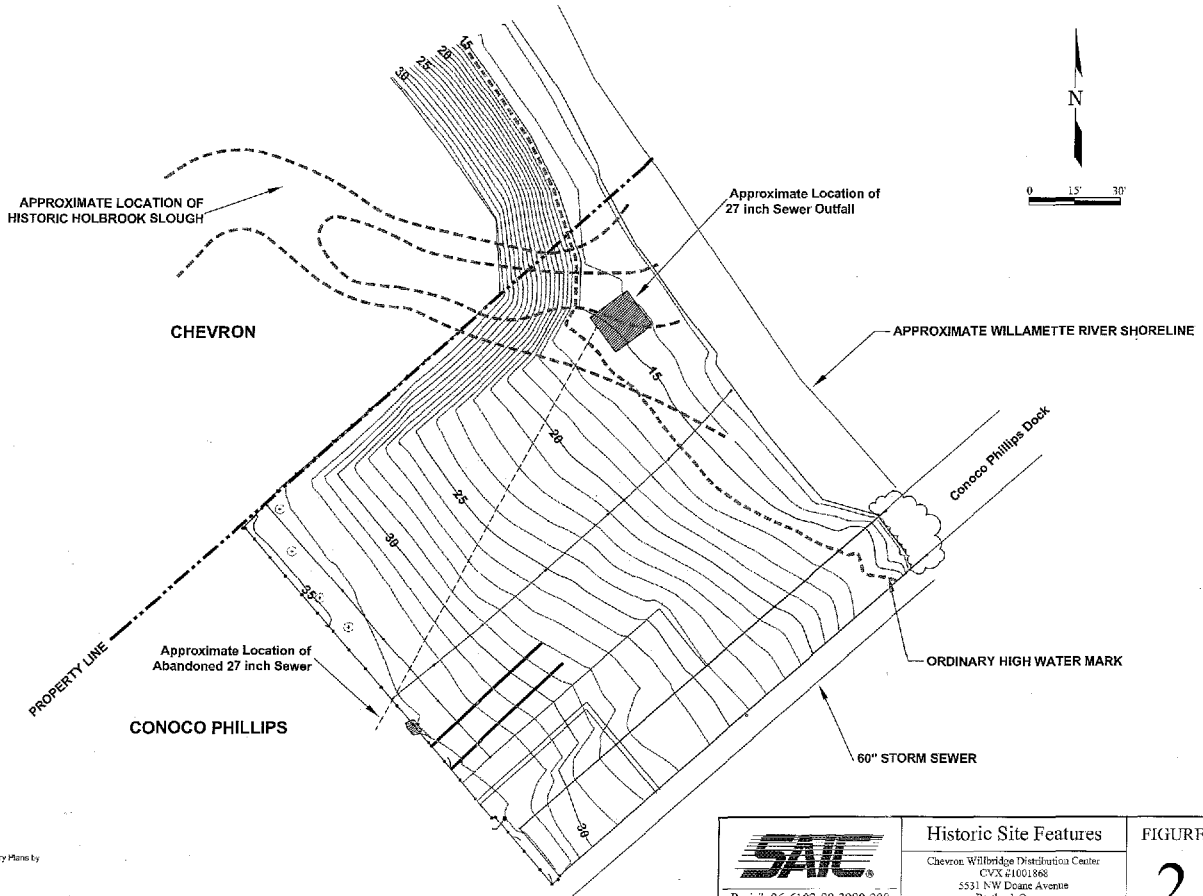

NOTES

1) Location of Holbrook Slough Inferred from 5/98 Trench Recovery Plans by Riedel Environmental

2) Base Map Provided by RSV Engineering Wilsonville, Oregon

SAIC	Historic Site Features	FIGURE
Proj #: 06-6102-00-3980-288	Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon	2
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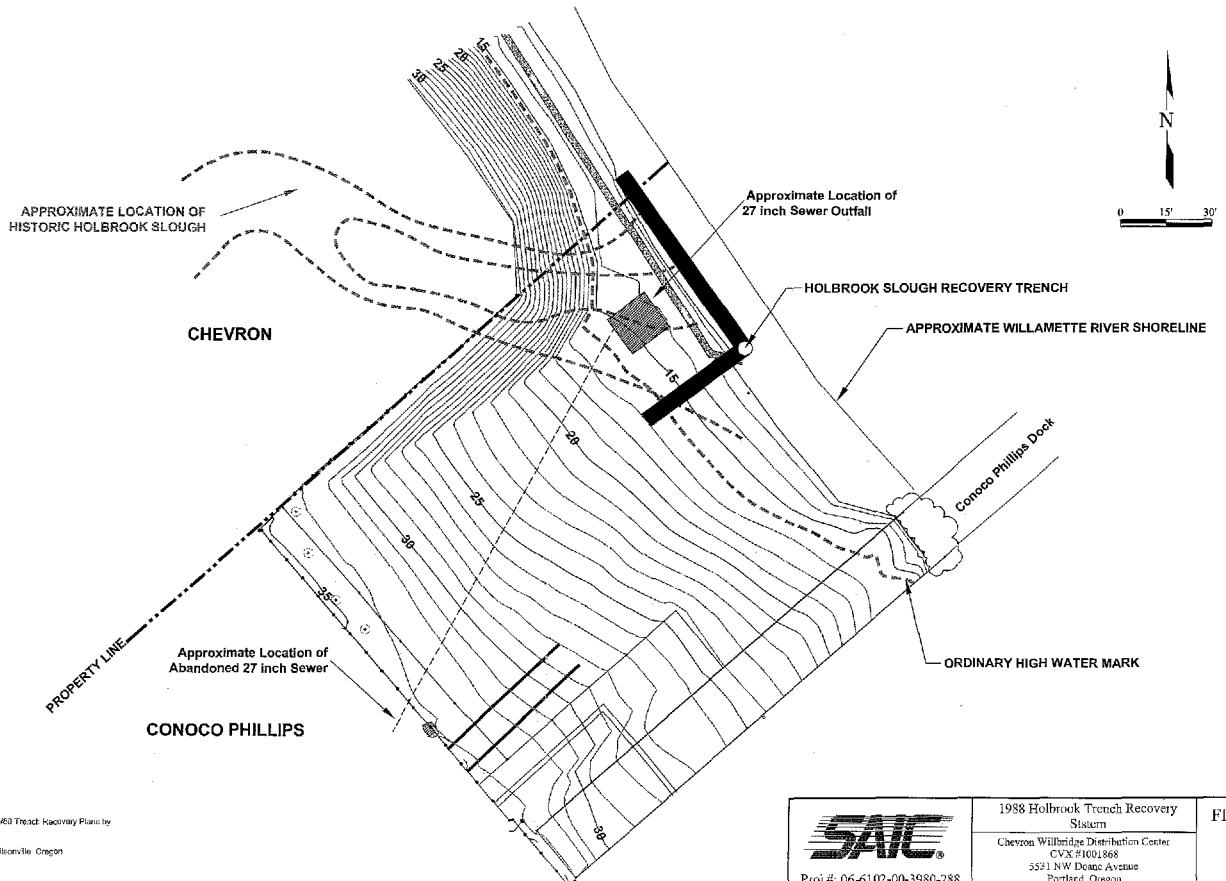
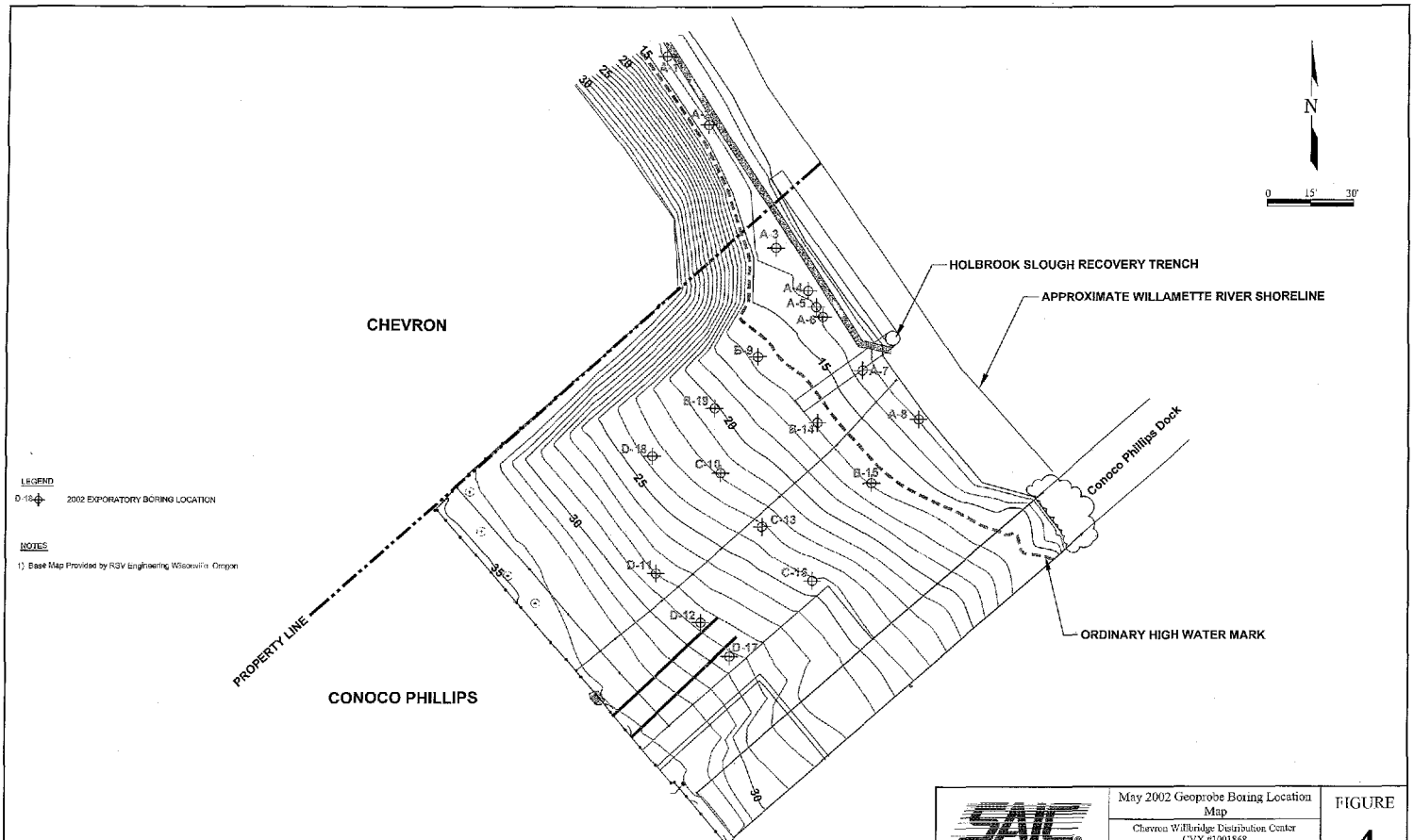


NOTES

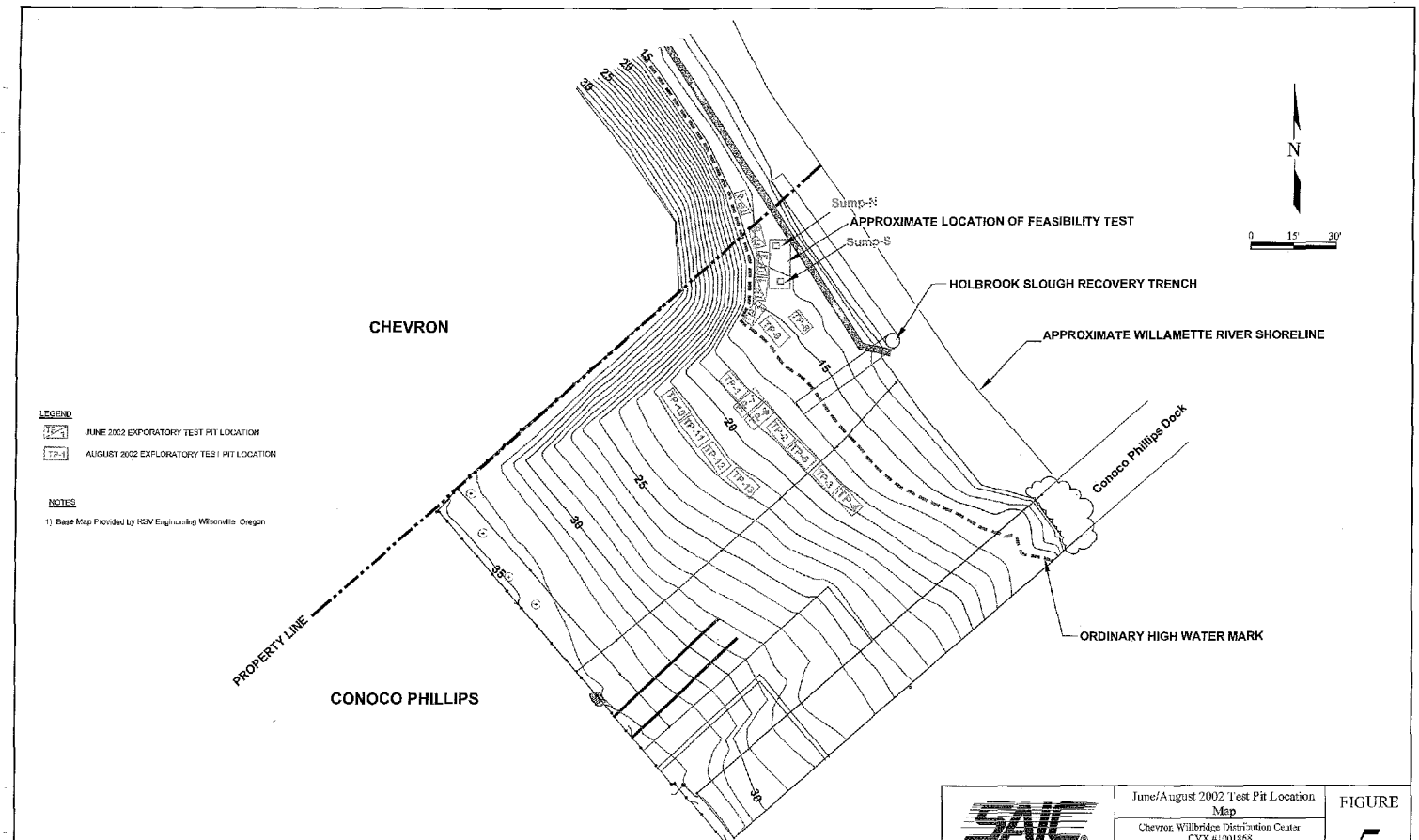
1) Location of Holbrook Slough Inferred from SRS Trench Recovery Plans by Rizzo Environmental

2) Base Map Provided by RSV Engineering Wilsonville Oregon

SAIC	1988 Holbrook Trench Recovery System	FIGURE
	Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon	3
Proj #: 06-6102-00-3980-288		
100-1868HolbrookBaseMap(fig3).dwg	Date: 07/28/04 Drawn By: EML	



SAIC® Proj #: 06-6102-00-3980-288	May 2002 Geoprobe Boring Location Map Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon	FIGURE 4
100-1868HolbrookBaseMap(fig4).cwg	Date: 07/28/04 Drawn By: EML	



SAIC Proj #: 06-6102-00-3980-288 100-1868HolbrookBaseMap(fig5).cwg	June/August 2002 Test Pit Location Map Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon Date: 07/28/04 Drawn By: EMT	FIGURE 5

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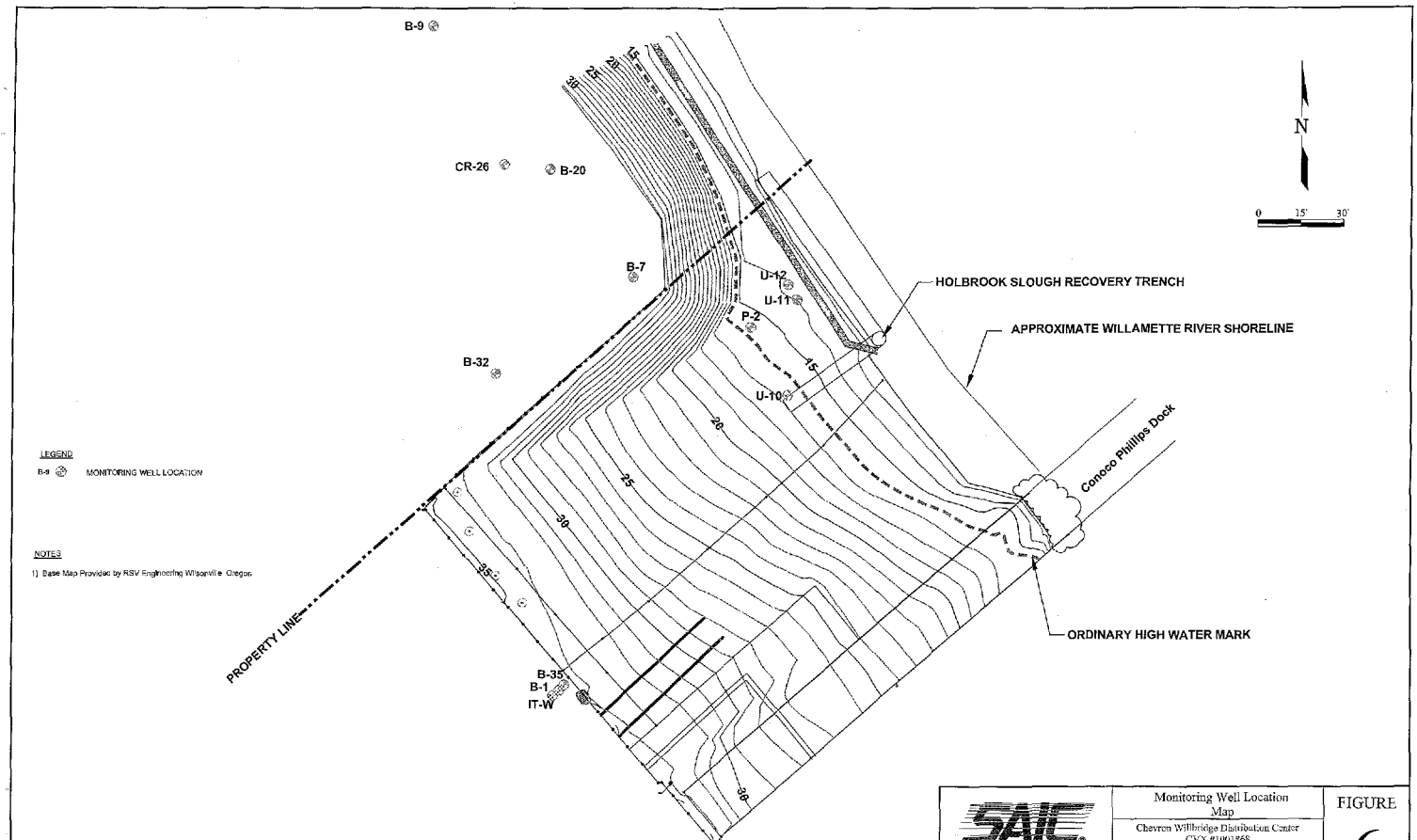

SAIC Proj #: 06-6102-00-3980-288 100-1868HolbrookBaseMap(fig6).dwg	Monitoring Well Location Map Chevron Willbridge Distribution Center CVX #1001868 5531 NW Doane Avenue Portland, Oregon Date: 07/28/04 Drawn By: BML	FIGURE 6

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TABLES

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TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA FROM JUNE 2002 TEST PITS - TPH
Chevron Willbridge Distribution Center
Portland, Oregon

Sample Location (depth in feet)	Sample Date	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-O (mg/kg)
T-1	6/24/02	<20.0	**6,940**	<100
T-4	6/24/02	<20.0	<50.0	<100
T-5	6/24/02	<20.0	<50.0	<100
T-6	6/24/02	**189**	**941**	<100
T-7	6/24/02	**329**	**2,670**	<100
T-8	6/24/02	<20.0	**20,600**	<100

Notes:
mk/kg = milligrams per kilogram (parts per million)
"<" = Indicates analyte not detected above detection limit shown
TPH-G = Total Petroleum Hydrocarbons as Gasoline by Northwest Method NWTPH-Gx.
TPH-D = Total Petroleum Hydrocarbons as Diesel Fuel by Northwest Method NWTPH-Dx.
TPH-O = Total Petroleum Hydrocarbons as Heavy Oil by Northwest Method NWTPH-Dx.
BOLD = Analyte detected above the method reporting limit

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TABLE 2
SUMMARY OF SOIL ANALYTICAL DATA FROM JUNE 2002 TEST PITS - VOCs
Chevron Willbridge Distribution Center
Portland, Oregon

Analyte	T-1 6/24/02 (ug/kg)	T-4 6/24/02 (ug/kg)	T-5 6/24/02 (ug/kg)	T-6 6/24/02 (ug/kg)	T-7 6/24/02 (ug/kg)	T-8 6/24/02 (ug/kg)
Benzene	<500	<100	<100	<100	<100	<100
Toluene	<500	<100	<100	<100	<100	<100
Ethylbenzene	<500	<100	<100	<100	<100	<100
Total Xylenes	<1500	<300	<300	<300	<300	<300
1,2-Dibromoethane	<500	<100	<100	<100	<100	<100
1,2-Dichloroethane	<500	<100	<100	<100	<100	<100
1,2,4-Trimethylbenzene	<500	<100	<100	<100	<100	<100
1,3,5-Trimethylbenzene	<500	<100	<100	<100	<100	<100
Isopropylbenzene	**1140**	<200	<200	**454**	**773**	**494**
MTBE	<500	<100	<100	<100	<100	<100
n-Butylbenzene	**2740**	<500	<500	**1020**	**3060**	**2420**
n-Propylbenzene	**3710**	<100	<100	**1860**	**3630**	**1110**
Naphthalene	<1000	<200	<200	<200	<200	<200
Methylene Chloride	<2500	<500	<500	<500	<500	<500
p-Isopropyltoluene	<1000	<200	<200	<200	**426**	<200
sec-Butylbenzene	**974**	<100	<100	**301**	**819**	**1570**
tert-Butylbenzene	<500	<100	<100	<100	**185**	**205**
Other VOCs	ND	ND	ND	ND	-	ND

Notes:
ug/kg = micrograms per kilogram (parts per billion)
MTBE = Methyl tert-butyl ether
Volatile Organic Compound (VOC) analysis by EPA Method 8260B
- = Not available or not applicable
"<" = Indicates analyte not detected above detection limit shown
BOLD = Analyte detected above the method reporting limit
ND = Not detected above method reporting limits

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TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA FROM JUNE 2002 TEST PITS - PAHs
Chevron Willbridge Distribution Center
Portland, Oregon

Analyte	T-1 6/24/02 (ppb)	T-8 6/24/02 (ppb)
Acenaphthene	<670	**1,130**
Acenaphthylene	<670	<670
Anthracene	**469**	**1,060**
Benzo(a)anthracene	<134	<134
Benzo(a)pyrene	<134	<134
Benzo(b)fluoranthene	<134	<134
Benzo(g,h,i)perylene	<134	<134
Benzo(k)fluoranthene	<134	<134
Chrysene	<134	**146**
Dibenzo(a,h)anthracene	<134	<134
Fluoranthene	**143**	<670
Fluorene	**3,370**	**4,530**
Indeno(1,2,3-cd)pyrene	<134	<134
Naphthalene	<1,340	<3,350
Phenanthrene	**4,150**	**5,640**
Pyrene	**142**	**820**

Notes:
ug/kg = micrograms per kilogram
PAH = Polynuclear Aromatic Hydrocarbons by EPA Method 8270M-SIM
"<" = Indicates analyte not detected above detection limit shown
BOLD = Analyte detected above the method reporting limit

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TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA FROM JUNE 2002 TEST PITS - METALS
Chevron Willbridge Distribution Center
Portland, Oregon

Analyte	T-1 6/24/02 (mg/kg)	T-8 6/24/02 (mg/kg)
Arsenic	**2.30**	**2.61**
Barium	**145**	**77.3**
Cadmium	<0.439	<0.424
Chromium	**27.5**	**16.6**
Lead	**12.9**	**12.9**
Mercury	<0.0862	<0.0862
Selenium	<0.439	<0.424
Silver	<0.439	<0.424

Notes:
mk/kg = milligrams per kilogram (parts per million)
ND = Not detected above method reporting limits
"<" = Indicates analyte not detected above detection limit shown
Total Metals analysis by EPA 6000/7000 Series Methods
BOLD = detected above Method Reporting Limit

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TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA FROM JUNE 2002 TEST PITS - PCBs
Chevron Willbridge Distribution Center
Portland, Oregon

Analyte	T-1 6/24/02 (ug/kg)	T-8 6/24/02 (ug/kg)
Aroclor 1016	<67.0	<67.0
Aroclor 1221	<134	<134
Aroclor 1232	<67.0	<67.0
Aroclor 1242	<67.0	<67.0
Aroclor 1248	<67.0	<67.0
Aroclor 1254	<67.0	<67.0
Aroclor 1260	<67.0	<67.0

Notes:
ug/kg = micrograms per kilogram (parts per million)
PCB = Polychlorinated Biphenyl by EPA Method 8082
"<" = Indicates analyte not detected above detection limit shown

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TABLE 6
SUMMARY OF GROUNDWATER ELEVATION AND SPH RECOVERY DATA
Chevron Willbridge Distribution Center
Portland, Oregon

Well I D (TOC)	Date Gauged	Depth to Groundwater	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation	SPH Recovered* (gallons)
B-1	2/14/2000	16.82	NP	-	17.86	NA
(34.68)	5/22/2000	17.05	NP	-	17.63	NA
	8/22/2000	17.48	NP	-	17.20	NA
	11/27/2000	17.82	NP	-	16.86	NA
	2/20/2001	17.71	NP	-	16.97	NA
	5/15/2001	17.68	NP	-	17.00	NA
	9/18/2001	18.01	NP	-	16.67	NA
	12/20/2001	17.10	NP	-	17.58	NA
	3/13/2002	16.77	NP	-	17.91	NA
	6/24/2002	17.32	NP	-	17.36	NA
	9/26/2002	17.74	NP	-	16.94	NA
	12/20/2002	17.57	NP	-	17.11	NA
	3/17/2003	16.97	NP	-	17.71	NA
	6/26/2003	17.24	NP	-	17.44	NA
B-7	2/14/2000	18.33	NP	-	17.40	0.1
(35.73)	5/22/2000	18.60	NP	-	17.13	NA
	8/22/2000	19.31	19.30	0.01	16.43	0.1
	11/27/2000	19.47	sheen	-	16.26	NA
	2/20/2001	19.37	NP	-	16.36	NA
	5/15/2001	19.36	sheen	-	16.37	NA
	9/19/2001	19.74	NP	-	15.99	NA
	12/20/2001	18.30	NP	-	17.43	NA
	3/15/2002	18.28	NP	-	17.45	NA
	9/23/2002	18.79	18.78	0.01	16.95	NA
	12/19/2002	19.78	19.79	0.01	15.96	NA
	3/19/2003	18.58	18.57	0.01	17.16	NA
B-9	2/14/2000	16.29	16.20	0.09	19.35	0.0
(35.57)	5/22/2000	16.90	NP	-	18.67	NA
	8/22/2000	17.48	NP	-	18.09	NA
	11/27/2000	17.29	NP	-	18.28	NA
	2/20/2001	17.41	NP	-	18.16	NA
	5/15/2001	17.04	NP	-	18.53	NA
	9/19/2001	17.84	NP	-	17.73	NA
	12/20/2001	15.92	NP	-	19.65	NA
	3/5/2002	15.92	NP	-	19.65	NA
	9/23/2002	17.75	NP	-	17.82	NA
	12/19/2002	17.28	NP	-	18.29	NA
	3/19/2003	16.18	NP	-	19.39	NA

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TABLE 6
SUMMARY OF GROUNDWATER ELEVATION AND SPH RECOVERY DATA
Chevron Willbridge Distribution Center
Portland, Oregon

Well I.D (TOC)	Date Gauged	Depth to Groundwater	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation	SPH Recovered* (gallons)
B-20	2/14/2000	16.62	NP	-	16.70	NA
(33.32)	5/22/2000	16.93	NP	-	16.39	NA
	8/22/2000	17.78	NP	-	15.54	NA
	11/27/2000	17.99	sheen	-	15.33	NA
	2/20/2001	17.79	sheen	-	15.53	NA
	5/15/2001	17.89	NP	-	15.43	NA
	9/19/2001	18.40	NP	-	14.92	NA
	12/20/2001	16.61	NP	-	16.71	NA
	3/15/2002	16.45	NP	-	16.87	NA
	9/23/2002	18.27	NP	-	15.05	NA
	12/19/2002	18.22	NP	-	15.10	NA
	3/19/2003	15.96	NP	-	17.36	NA
B-32	2/14/2000	16.37	NP	-	17.86	NA
(34.23)	5/22/2000	26.84	NP	-	7.39	NA
	8/22/2000	17.65	NP	-	16.58	NA
	11/27/2000	17.93	NP	-	16.30	NA
	2/20/2001	17.71	NP	-	16.52	NA
	5/15/2001	17.74	NP	-	16.49	NA
	9/19/2001	18.17	NP	-	16.06	NA
	12/20/2001	16.74	NP	-	17.49	NA
	3/15/2002	16.55	NP	-	17.68	NA
	9/23/2002	18.32	18.32	Sheen	15.91	NA
	12/19/2002	18.15	NP	-	16.08	NA
	3/19/2003	16.83	NP	-	17.40	NA
B-35	2/14/2000	15.71	NP	-	17.85	NA
(33.56)	5/22/2000	16.00	NP	-	17.56	NA
	8/22/2000	16.36	NP	-	17.20	NA
	11/27/2000	16.71	NP	-	16.85	NA
	2/20/2001	16.65	NP	-	16.91	NA
	5/15/2001	15.56	NP	-	18.00	NA
	9/18/2001	16.90	NP	-	16.66	NA
	12/20/2001	15.95	NP	-	17.61	NA
	3/13/2002	15.70	NP	-	17.86	NA
	6/24/2002	16.22	NP	-	17.34	NA
	9/26/2002	16.64	NP	-	16 92	NA
	12/20/2002	16.48	NP	-	17.08	NA
	3/17/2003	15.91	NP	-	17.65	NA
	6/26/2003	16.13	NP	-	17.43	NA

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TABLE 6
SUMMARY OF GROUNDWATER ELEVATION AND SPH RECOVERY DATA
Chevron Willbridge Distribution Center
Portland, Oregon

Well I D (TOC)	Date Gauged	Depth to Groundwater	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation	SPH Recovered* (gallons)
IT-W	2/14/2000	17.46	NP	-	18.53	NA
(35.99)	5/22/2000	17.75	NP	-	18.24	NA
	8/22/2000	18.17	NP	-	17.82	NA
	11/27/2000	18.51	NP	-	17.48	NA
	2/20/2001	18.43	NP	-	17.56	NA
	5/15/2001	18.33	NP	-	17.66	NA
	9/18/2001	18.68	NP	-	17.31	NA
	12/20/2001	17.76	NP	-	18.23	NA
	3/13/2002	17.50	NP	-	18.49	NA
	6/24/2002	17.98	NP	-	18.01	NA
	9/26/2002	18.40	NP	-	17.59	NA
	12/20/2002	18.28	NP	-	17.71	NA
	3/17/2003	17.70	NP	-	18.29	NA
	6/26/2003	17.94	NP	-	18.05	NA
P-2	2/14/2000	4.18	NP	-	13.67	NA
(17.85)	5/22/2000	4.66	NP	-	13.19	NA
	8/22/2000	5.27	NP	-	12.58	NA
	11/27/2000	5.28	NP	-	12.57	NA
	2/20/2001	5.32	NP	-	12.53	NA
	5/15/2001	5.18	NP	-	12.67	NA
	9/18/2001	5.50	NP	-	12.35	NA
	12/20/2001	4.21	NP	-	13.64	NA
	3/13/2002	4.40	NP	-	13.45	NA
	6/24/2002	3.26	NP	-	14.59	NA
	9/26/2002	5.74	NP	-	12.11	NA
	12/20/2002	5.93	NP	-	11.92	NA
	3/17/2003	4.84	NP	-	13.01	NA
	6/26/2003	5.31	NP	-	12.54	NA

NOTES:
NP = No measurable product
NA = Not Applicable
NM = Not Measured
NR = None Recovered
* = SPH Recovered for latest quarter monitored
- = No measurable product thickness
Groundwater elevations for wells with product thicknesses have been corrected using 0 8
GWE = TOC -(DTW - (0.8 x DTP - DTW)) Where 0.8 = The density of the SPH

COP0019366

TABLE 7
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX COMPOUNDS
Chevron Willbridge Distribution Center
Portland, Oregon

Well Identification	Date Sampled	Benzene (µg/l)	Ethylbenzene (µg/l)	Toluene (µg/l)	Xylenes (µg/l)
B-7	02/18/00	ND	ND	20.1	44.8
	05/23/00	ND	1.41	0.678	1.22
dup	05/23/00	ND	1.06	0.691	ND
	08/25/00	NS/F	NS/F	NS/F	NS/F
	11/30/00	NS/S	NS/S	NS/S	NS/S
	02/22/01	0.690	ND	0.736	ND
	05/17/01	ND	ND	0.700	ND
	03/20/03	ND	ND	0.740	ND
	09/29/03	<0.500	<0.500	0.870	1.93
	03/30/04	<0.500	<0.500	0.750	<1.00
B-9	05/23/00	ND	0.737	0.535	ND
	08/25/00	ND	ND	ND	ND
	11/30/00	ND	ND	ND	ND
	02/22/01	ND	ND	ND	ND
	05/17/01	ND	ND	ND	ND
	09/19/01	ND	0.913	ND	ND
	03/21/02	ND	ND	ND	ND
	09/24/02	ND	ND	ND	ND
	03/20/03	ND	ND	ND	ND
	03/30/04	<0.500	<0.500	0.560	<1.00
B-20	03/20/03	ND	ND	ND	ND
	09/29/03	<0.500	<0.500	<0.500	1.38
	03/30/04	<0.500	<0.500	<0.500	<1.00
B-32	03/20/03	ND	ND	ND	ND
	09/29/03	<0.500	0.636	<0.500	<1.00
	03/29/04	<0.500	<0.500	<0.500	<1.00
B-35	02/17/00	31.6	11	13.5	27.4
	05/26/00	194	12.5	16.3	39.8
	08/28/00	287	8.42	15.3	ND
	11/29/00	384	12.0	17.0	30.2
	02/23/01	45.6	12.4	4.87	20.5
	05/17/01	15.2	5.62	4.32	7.99
	09/20/01	58.0	9.78	3.31	15.9
	03/14/02	34.1	2.41	15.8	11.4
	09/26/02	95.8	14.0	11.3	26.3
	03/18/03	8 11	1.42	6 39	3 20
	09/25/03	66.7	3 74	7.41	19 2
	03/30/04	15.1	6.49	1.39	13.0
P-2	03/17/03	ND	ND	0.534	ND
	09/25/03	<0.500	0.823	<0.500	<1.00
	03/30/04	0.540	<0.500	<0.500	<1.00
U-10	03/18/03	ND	ND	ND	ND
	09/25/03	<0.500	<0.500	<0.500	<1.00
	03/30/04	0.680	<0.500	2.08	4.01

COP0019367

TABLE 7
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX COMPOUNDS
Chevron Willbridge Distribution Center
Portland, Oregon

Well Identification	Date Sampled	Benzene (µg/l)	Ethylbenzene (µg/l)	Toluene (µg/l)	Xylenes (µg/l)
U-11	03/18/03	ND	ND	ND	ND
	09/25/03	1.74	1.04	1.37	1.74
	03/30/04	<0.500	<0.500	<0.500	<1.00
dup	03/30/04	0.650	<0.500	1.93	3.26
U-12	03/18/03	5.30	0.642	2.12	3.72
	09/25/03	<0.500	<0.500	0.563	2.00
	03/30/04	<0.500	<0.500	<0.500	<1.00

Notes:
2/00 and 5/00 data from II Corporation
8/00, 11/00, 2/01 and 5/01 data from KHM Environmental Management, Inc
NS/F = Not sampled floating product present
NS/S = Not sampled sheen present
µg/l = Micrograms per Liter (parts per billion)
ND = Not detected at or above detection limit
< = Indicates analyte not detected above detection limit shown
BTEX analysis by USEPA Method 8021B
dup* = duplicate for B-30 submitted as blind duplicate labeled as B-50
dup**= duplicate for B-30 submitted as blind duplicate labled as B-31
dup*** = duplicate for B-30 submitted as blind duplicate labeled as B-99
TB-LB = trip blank

COP0019368

TABLE 8
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PAH COMPOUNDS
ChevronTexaco ConocoPhillips Terminals-
Portland, Oregon

Well I.D.	Date Sampled	Acenaphthene (µg/l)	Acenaphthylene (µg/l)	Anthracene (µg/l)	Benzo (a) anthracene (µg/l)	Benzo (a) pyrene (µg/l)	Benzo (b) fluoranthene (µg/l)	Benzo (g,h,i) perylene (µg/l)	Benzo (k) fluoranthene (µg/l)	Chrysene (µg/l)	Dibenzo (a,h) anthracene (µg/l)	Fluoranthene (µg/l)	Fluorene (µg/l)	Indeno (1,2,3-cd) pyrene (µg/l)	Naphthalene (µg/l)	Phenanthrene (µg/l)	Pyrene (µg/l)
B-7	02/18/00	5.22	ND	ND	ND	ND	ND	ND	ND	0.528	ND	7.26	16.3	ND	ND	17.6	0.962
	05/23/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.2	ND	ND	13.6	ND
dup	05/23/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.9	ND	ND	15.8	ND
	08/25/00	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F
	11/30/00	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S
	02/22/01	1.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.64	ND	ND	2.82	ND
	05/17/01	0.934	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.59	ND	ND	0.564	ND
	03/20/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/29/03	2.12	ND	0.287	ND	ND	ND	ND	ND	ND	ND	ND	7.74	ND	ND	6.11	ND
	03/30/04	1.95	<0.200	0.436	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	7.73	<0.200	<1.60	5.95	<0.200
B-9	02/18/00	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F
	05/23/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.43	ND	ND	1.3	ND
	08/25/00	2.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.40	ND	ND	1.33	ND
	11/30/00	0.700	ND	0.600	0.460	0.240	0.400	ND	ND	ND	ND	ND	6.70	ND	0.780	0.200	0.160
	02/22/01	1.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.20	ND	ND	0.528	ND
	05/17/01	1.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.60	ND	ND	0.386	ND
	09/19/01	1.08	0.240	ND	ND	ND	ND	0.120	ND	ND	0.100	ND	4.00	0.100	0.260	0.780	0.100
	03/21/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/24/02	1.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.09	ND	ND	0.358	ND
	03/20/03	0.242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.508	ND	ND	ND	ND
	09/30/03	1.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.38	ND	ND	0.265	ND
	03/30/04	0.964	<0.300	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	3.10	<0.200	<1.50	0.951	0.234
B-20	03/20/03	0.322	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.577	ND	ND	ND	ND
	09/29/03	1.52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.86	ND	ND	4.27	ND
	03/30/04	1.07	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	3.81	<0.200	<1.50	0.988	<0.200

Historic Lab Data

COP00193

TABLE 8
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PAH COMPOUNDS
ChevronTexaco ConocoPhillips Terminals-
Portland, Oregon

Well I.D.	Date Sampled	Acenaphthene (µg/l)	Acenaphthylene (µg/l)	Anthracene (µg/l)	Benzo (a) anthracene (µg/l)	Benzo (a) pyrene (µg/l)	Benzo (b) fluoranthene (µg/l)	Benzo (g,h,i) perylene (µg/l)	Benzo (k) fluoranthene (µg/l)	Chrysene (µg/l)	Dibenzo (a,h) anthracene (µg/l)	Fluoranthene (µg/l)	Fluorene (µg/l)	Indeno (1,2,3-cd) pyrene (µg/l)	Naphthalene (µg/l)	Phenanthrene (µg/l)	Pyrene (µg/l)
B-32	03/20/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.161	ND	ND	ND	0.108
	09/29/03	ND	ND	ND	0.114	0.112	0.114	ND	0.114	0.188	ND	0.557	1.06	ND	ND	ND	0.498
B-35	02/17/00	11	ND	5.15	1.19	ND	ND	ND	ND	1.1	ND	8.29	30	ND	ND	35.8	4.33
	05/26/00	ND	ND	2.61	ND	ND	ND	ND	ND	ND	ND	2.93	22.5	ND	ND	20.7	1.73
	08/28/00	6.77	ND	0.807	0.123	ND	ND	ND	ND	0.127	ND	1.12	13.7	ND	ND	8.35	0.584
	11/29/00	2.84	0.360	0.520	0.240	ND	ND	ND	ND	0.200	ND	1.46	6.30	ND	1.22	7.16	0.760
	02/23/01	8.44	ND	ND	0.304	ND	0.102	ND	ND	0.330	ND	ND	16.2	ND	ND	17.3	1.15
	05/17/01	4.34	ND	0.493	0.103	ND	ND	ND	ND	0.106	ND	0.692	11.3	ND	ND	5.50	0.425
	09/20/01	2.92	0.360	0.680	0.200	ND	0.120	ND	ND	0.200	ND	1.20	6.74	ND	1.00	10.0	0.700
	03/14/02	3.02	ND	0.620	ND	ND	ND	ND	ND	ND	ND	0.844	7.62	ND	ND	6.78	0.468
	09/26/02	4.76	ND	0.740	0.109	ND	ND	ND	ND	ND	ND	1.00	11.6	ND	ND	9.41	0.570
	03/18/03	3.46	ND	0.493	ND	ND	ND	ND	ND	ND	ND	0.578	14.3	ND	ND	7.51	0.434
	09/25/03	5.36	ND	0.779	ND	ND	ND	ND	ND	ND	ND	0.884	10.2	ND	ND	8.86	0.399
	03/30/04	3.52	<0.200	0.456	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.419	7.21	<0.200	<2.10	5.18	0.274
P-2	03/17/03	2.61	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.62	ND	ND	2.05	ND
	9/25/03[2]	1.93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.85	ND	ND	4.23	ND
	03/30/04	1.97	<0.200	<0.300	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	7.66	<0.200	<1.70	3.28	<0.200
U-10	03/18/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.345	ND	ND
	09/25/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/30/04	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	0.0302	<0.0200	<0.0200
U-11	03/18/03	0.711	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.44	ND	ND	0.951	ND
	09/25/03	1.45	ND	0.229	ND	ND	ND	ND	ND	ND	ND	0.391	4.69	ND	ND	3.25	0.396
	03/30/04	1.73	<0.200	0.395	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.610	5.29	<0.200	<2.60	4.32	0.821

COP001937

TABLE 8
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PAH COMPOUNDS
ChevronTexaco ConocoPhillips Terminals-
Portland, Oregon

Well I.D.	Date Sampled	Acenaphthene (µg/l)	Acenaphthylene (µg/l)	Anthracene (µg/l)	Benzo (a) anthracene (µg/l)	Benzo (a) pyrene (µg/l)	Benzo (b) fluoranthene (µg/l)	Benzo (g,h,i) perylene (µg/l)	Benzo (k) fluoranthene (µg/l)	Chrysene (µg/l)	Dibenzo (a,h) anthracene (µg/l)	Fluoranthene (µg/l)	Fluorene (µg/l)	Indeno (1,2,3-cd) pyrene (µg/l)	Naphthalene (µg/l)	Phenanthrene (µg/l)	Pyrene (µg/l)
U-12	03/18/03	1.72	ND	0.308	ND	ND	ND	ND	ND	ND	ND	0.384	7.94	ND	ND	3.91	0.541
	09/25/03	0.277	ND	0.138	ND	ND	ND	ND	ND	ND	ND	ND	1.25	ND	0.231	1.59	ND
	03/30/04	0.151	<0.0400	<0.0600	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	0.621	<0.0400	<0.320	0.238	0.0434

NOTES:
- = Not sampled, not analyzed, not applicable
µg/l = Micrograms per Liter (parts per billion)
ND = Not detected at or above method detection limit
< = Indicates analyte not detected above detection limit shown
2/00 and 5/00 data from IT Corporation
8/00, 11/00, 2/01 and 5/01 data from KHM Environmental Management, Inc.
IT Corp Data recorded as reported in Second Quarter 2000 Report
NS/F = Not sampled floating product present
NS/S = Not sampled sheen present
1 = Sample rerun outside of hold time due to low surrogate recovery reported in the initial sample as a result of an extraction error.
2 = Sample ID was misidentified by the laboratory as D-2
dup* = duplicate for B-30 submitted as blind duplicate labeled as B-50
dup**= duplicate for B-30 submitted as blind duplicate labled as B-31
dup***= duplicate for B-30 submitted as blind duplicate labeled as B-130
PAHs by EPA Method 8270M-SIM

COP0019371

TABLE 9
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - TOTAL METALS
Chevron Willbridge Distribution Center
Portland, Oregon

Well I.D.	Sample Date	Arsenic (mg/l)	Barium (mg/l)	Cadmium (mg/l)	Chromium (mg/l)	Copper (mg/l)	Lead (mg/l)	Mercury (mg/l)	Selenium (mg/l)	Silver (mg/l)	Zinc (mg/l)
B-7	02/18/00	0.028	0.122	0.00107	0.0066	0.0134	0.00425	ND	0.00125	ND	0.0234
	05/23/00	0.0268	0.228	ND	0.0264	0.0441	0.0115	ND	0.00193	ND	0.0863
dup	05/23/00	0.0276	0.259	ND	0.0304	0.051	0.0137	ND	0.00211	ND	0.104
	08/25/00	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F	NS/F
	11/30/00	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S	NS/S
	02/22/01	0.0310	0.0719	ND	ND	0.00311	ND	ND	ND	ND	0.00513
	05/17/01	0.0364	0.0587	ND	ND	0.00157	ND	ND	ND	ND	ND
	03/20/03	0.0275	0.0642	ND	ND	0.0209	ND	ND	ND	ND	ND
	09/29/03	0.0304	0.0815	ND	0.00278	0.00608	0.00121	ND	0.00132	ND	0.00782
	03/30/04	0.0303	0.0869	0.00138	0.00320	0.00647	0.00175	<0.000200	<0.00100	<0.00100	0.0135
B-9	05/23/00	0.0177	0.139	ND	0.0176	0.0286	0.00848	ND	0.00123	ND	0.0616
	08/25/00	0.0116	0.0534	ND	0.00270	0.00750	0.00214	ND	ND	ND	0.0228
	11/30/00	0.0108	0.153	0.00149	0.0159	0.0354	0.0114	ND	0.00125	ND	0.0823
	02/22/01	0.0173	0.0460	ND	ND	0.00213	ND	ND	0.00127	ND	ND
	05/17/01	0.0208	0.0706	ND	0.00444	0.00634	0.00241	ND	ND	ND	0.0161
	09/19/01	0.0161	0.0753	ND	0.00256	0.00993	0.00266	ND	ND	ND	0.0136
	03/21/02	0.0105	0.0488	ND	0.00257	0.00683	0.00398	ND	ND	ND	0.0506
	09/24/02	0.0185	0.0469	ND	ND	ND	ND	ND	ND	ND	ND
	03/20/03	0.00992	0.0401	ND	0.00165	0.00421	0.00317	ND	ND	ND	0.0283
	09/30/03	0.00905	0.137	0.00136	0.00812	0.0285	0.0155	ND	ND	ND	0.0532
	03/30/04	0.0384	0.349	0.00382	0.0395	0.0991	0.0467	<0.000200	0.00147	<0.00100	0.331
B-20	03/20/03	0.0107	0.0459	ND	0.00109	0.00389	ND	ND	ND	ND	0.00501
	09/29/03	0.130	4.35	0.0494	0.808	1.14	0.643	0.000934	0.00840	ND	3.96
	03/30/04	0.00165	0.0417	<0.00100	0.00184	0.00508	0.00121	<0.00200	<0.00100	<0.00100	0.00910
B-32	03/20/03	0.00367	0.0429	ND	0.00110	ND	ND	ND	ND	ND	ND
	09/29/03	0.122	6.84	0.0170	1.04	1.64	1.15	0.000754	0.0190	ND	3.74
	03/29/04	0.00917	0.434	0.00202	0.0615	0.108	0.0387	0.000221	0.0224	<0.00100	0.215
B-35	02/17/00	0.0602	0.480	0.00062	0.0893	0.122	0.0828	ND	0.00164	0.00021	0.311
	05/26/00	0.0102	0.116	ND	0.00786	0.0114	0.00264	ND	0.0013	ND	0.0233
	08/28/00	0.0377	0.128	0.00153	0.00467	0.00612	0.00643	ND	ND	ND	0.0339
	11/29/00	0.0468	0.131	ND	0.00316	0.00691	0.00619	ND	0.00212	ND	0.0208
	02/23/01	0.0347	0.0816	ND	0.00200	0.00380	0.00305	ND	0.00100	ND	0.0308
	05/17/01	0.0504	0.153	ND	0.0107	0.0141	0.0106	ND	ND	ND	0.0511
	09/20/01	0.0344	0.0901	ND	0.00178	0.00420	0.00160	ND	ND	ND	0.00632
	03/14/02	0.0335	0.308	ND	0.0463	0.0534	0.0298	ND	0.00139	0.00145	0.146
	09/26/02	0.0296	0.225	ND	0.0298	0.0314	0.0147	ND	0.00131	ND	0.0816
	03/18/03	0.0387	0.0958	ND	0.00155	0.00422	0.00277	ND	ND	ND	0.00700
	09/25/03	0.0517	0.132	ND	0.00334	0.00631	0.00536	ND	ND	ND	0.0171
	3/30/04	0.0291	0.135	<0.00100	0.0119	0.0149	0.00779	<0.000200	<0.00100	<0.00100	0.0152
P-2	03/17/03	0.0111	0.0783	ND	0.00232	0.00722	0.00288	ND	ND	0.00106	0.00979
	9/25/03[1]	0.00966	0.116	ND	0.00443	0.0116	0.00553	ND	0.00109	ND	0.0137
	03/30/04	0.00805	0.131	<0.00100	0.00187	0.00447	0.00126	<0.000200	<0.00100	<0.00100	0.0123
U-10	03/18/03	0.107	3.39	ND	0.313	0.403	0.176	0.000551	ND	ND	1.22
	09/25/03	0.00975	0.196	ND	0.0132	0.0149	0.00904	ND	ND	ND	0.0493
	03/30/04	0.0316	0.128	<0.00100	0.00481	0.00573	0.0225	<0.000200	<0.00100	<0.00100	0.0288

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TABLE 9
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - TOTAL METALS
Chevron Willbridge Distribution Center
Portland, Oregon

Well I.D.	Sample Date	Arsenic (mg/l)	Barium (mg/l)	Cadmium (mg/l)	Chromium (mg/l)	Copper (mg/l)	Lead (mg/l)	Mercury (mg/l)	Selenium (mg/l)	Silver (mg/l)	Zinc (mg/l)
U-11	03/18/03	0.00942	0.372	ND	0.0297	0.0339	0.0336	0.000211	0.00153	ND	0.110
	09/25/03	0.0343	0.0893	ND	0.00220	0.00287	0.00830	ND	0.00101	ND	0.0124
	03/30/04	0.00679	0.363	<0.00100	0.0341	0.312	0.0212	<0.000200	0.00165	<0.00100	0.103
dup	03/30/04	0.0357	0.108	<0.00100	0.00400	0.00594	0.0201	<0.000200	<0.00100	<0.00100	0.0292
U-12	03/18/03	0.0323	0.136	ND	0.00600	0.00711	0.0228	ND	ND	ND	0.0338
	09/25/03	0.0418	1.91	ND	0.362	0.372	0.302	0.000559	0.00480	ND	1.2
	03/30/04	0.00655	0.248	<0.00100	0.0179	0.0233	0.0220	<0.000200	0.00185	<0.00100	0.0728

Notes:
ND - Not detected at laboratory reporting limits
NS/F = Not sampled floating product present
NS/S = Not sampled sheen present
< = Indicates analyte not detected above detection limit shown
mg/l = milligrams per liter (parts per million)
2/00 and 5/00 data from IT Corporation
8/00, 11/00, 2/01 and 5/01 data from KHM Environmental Management, Inc
Sample locations are shown on Figure 2
Analytical Reports are included in Attachment B
dup* = duplicate for B-30 submitted as blind duplicate labeled as B-50
dup**= duplicate for B-30 submitted as blind duplicate labeled as B-31
dup***= duplicate for B-30 submitted as blind duplicate labeled as B-130
1 = Sample ID was misidentified by the laboratory as D-2
Total Metals Analysis by EPA 6000/7000 Series Methods

COP0019373

APPENDIX A

APPENDIX A
SUMMARY OF HISTORIC BORING AND TEST PIT LOGS
Chevron Willbridge Distribution Center
Portland, Oregon

Exploratory Boring or Test Pit ID	Date	Depth (feet)	Soil Description	Photo-Ionization Detector Reading (ppm)	Sample Collection
A1	05/02	0-4	Silty gravel with sand	NA	NA
		4-8	Silt, odor and sheen	NA	NA
			Total Depth = 8 feet below grade surface		
			Moist soil encountered at ~4 feet below grade surface; no groundwater.		
A2	05/02	0-0.5	Gravel cover	NA	NA
		0.5-3	Silty gravel with sand	NA	NA
		3-4	Silt, odor and sheen	NA	NA
			Total Depth = 4 feet below grade surface		
			Groundwater not encountered		
A3	05/02	0-0.5	Gravel cover	NA	NA
		0.5-3.5	Silty gravel with sand (refusal)	NA	NA
			Boring continued 5 feet south due to refusal		
		3.5-4.5	Silty sand, odor	NA	NA
		4.5-8	Silt, no odor, moist		
			Total Depth = 8 feet below grade surface	NA	NA
			Moist soil encountered at ~4.5 feet below		
			grade surface, groundwater not encountered.		
A4	05/02	0-0.5	Gravel cover	NA	NA
		0.5-3	Silty gravel with sand	NA	NA
		3-7	Sand (med-grained) trace fines, odor, sheen	NA	NA
		7-8	Sand, some silt, wet	NA	NA
		8-12	No recovery	NA	NA
			Total Depth = 12 feet below grade surface		
			Wet soil encountered at ~7 feet below grade		
			surface, groundwater not encountered.		
A5	05/02	0-6.5	No soils collected, refusal at 6.5 feet below	NA	NA
			grade surface, groundwater not encountered.		
			Total Depth = 6.5 feet below grade surface		
A6	05/02	0-1.5	Gravel cover with some silty sand	NA	NA
		1.5-12	Sand, odor, wet at 7 feet	NA	NA
		12-16	Silt, no odor	NA	NA
			Total Depth = 16 feet below grade surface		
			Wet soil encountered at 7 feet below grade		
			surface, groundwater encountered at ~14 feet below grade surface.		
A7	05/02	0-0.5	Gravel cover	NA	NA
		0.5-1.5	Silty gravel with sand	NA	NA
		1.5-4	Sand no odor, no sheen, damp	NA	NA
		4-8	Sand (med-grained), low recovery	NA	NA
		8-12	Silt, no odor, no sheen, moist	NA	NA
			Total Depth = 12 feet below grade surface		
			Moist soil encountered at ~8 feet below grade		
			surface, groundwater not encountered.		

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APPENDIX A
SUMMARY OF HISTORIC BORING AND TEST PIT LOGS
Chevron Willbridge Distribution Center
Portland, Oregon

Exploratory Boring or Test Pit ID	Date	Depth (feet)	Soil Description	Photo-Ionization Detector Reading (ppm)	Sample Collection
B-9	05/02	0-0.5	Gravel cover	NA	NA
		0.5-3.5	Sand (med-grained) no odor, no sheen	NA	NA
		3.5-4.5	Silt, no odor, no sheen	NA	NA
		4 5-7	Sand, no odor, no sheen	NA	NA
		7-12	Silt, odor, 6" sand zone, slough	NA	NA
			Total Depth = 12 feet below grade surface		
			Goundwater not encountered.		
B-15	05/02	0-0.5	Gravel cover	NA	NA
		0.5-5	Sand (med-grained) no odor, no sheen	NA	NA
		5-8	Silt, odor, no sheen, wet	NA	NA
			Total Depth = 8 feet below grade surface		
			Wet soil encountered at ~5 feet below grade		
			surface, groundwater not encountered.		
B-19	05/02	0-0.5	Gravel cover	NA	NA
		0.5-7.5	Sand (med-grained), no odor, no sheen, damp	NA	NA
		7.5-8.5	Sand (med-grained), with some silt, odor	NA	NA
		8.5-12	Silt, odor, moist	NA	NA
		12-16	No recovery	NA	NA
			Total Depth = 16 feet below grade surface		
			Moist soil encountered at ~8.5 feet below grade		
			surface, groundwater not encountered.		
C-10	05/02	0-0.5	Gravel cover	NA	NA
		0.5-8.5	Sand (med-grained), no odor, no sheen	NA	NA
		8.5-12	Silt, odor, very moist	NA	NA
			Total Depth = 12 feet below grade surface		
			Very moist soil encountered at ~8.5 feet below		
			grade surface, groundwater not encountered.		
C-13	05/02	0-0.5	Gravel cover	NA	NA
		0.5-10	Sand (med-grained), no odor, no sheen, damp	NA	NA
		10-24	Sand (med-grained) odor, sheen, wet at 11.5	NA	NA
		24-28	Sand (med-grained) no odor, no sheen	NA	NA
			Total Depth = 28 feet below grade surface		
			Groundwater encountered at ~11.5 feet below		
			grade surface.		
C-16	05/02	0-0.5	Gravel cover	NA	NA
		0.5-14	Sand (med-grained), no odor, no sheen, damp	NA	NA
		14-16	Silt, odor, moist	NA	NA
			Total Depth = 16 feet below grade surface		
			Moist soil encountered at ~14 feet below		
			grade surface, groundwater not encountered.		

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APPENDIX A
SUMMARY OF HISTORIC BORING AND TEST PIT LOGS
Chevron Willbridge Distribution Center
Portland, Oregon

Exploratory Boring or Test Pit ID	Date	Depth (feet)	Soil Description	Photo-Ionization Detector Reading (ppm)	Sample Collection
D-11	05/02	0-0.5	Gravel cover	NA	NA
		0.5-9.5	Sand (med-grained) no odor, no sheen, damp	NA	NA
		9.5-10	Wood	NA	NA
		10-11	Sand (med-grained) no odor, no sheen	NA	NA
		11-12	Silt, odor, moist	NA	NA
			Total Depth = 12 feet below grade surface		
			Moist soil encountered at ~11 feet below		
			grade surface, groundwater not encountered.		
D-12	05/02	0-0.5	Gravel cover	NA	NA
		0.5-15	Sand (med-grained) no odor, no sheen, damp	NA	NA
		15-16	Sand (med-grained) odor, wet at ~15	NA	NA
		16-24	Sand (med-grained) no odor, no sheen, very moist	NA	NA
			Total Depth = 24 feet below grade surface		
			Groundwater encountered at ~15 feet below		
			grade surface.		
D-17	05/02	0-1	Sand, damp	NA	NA
		1-2	Gravel cover, no odor, no sheen	NA	NA
		2-15	Sand (med-grained) no odor, no sheen	NA	NA
		15-17	Sand (med-grained) odor, wet at ~15	NA	NA
		17-20	Silt, odor, very moist	NA	NA
			Total Depth = 20 feet below grade surface		
			Groundwater encountered at ~15 feet below		
			grade surface.		
D-18	05/02	0-0.5	Gravel cover	NA	NA
		0.5-9	Sand (med-grained) no, odor, no sheen, damp	NA	NA
		9-12	Silt, odor, moist	NA	NA
			Total Depth = 12 feet below grade surface		
			Moist soil encountered at ~9 feet below		
			grade surface, groundwater not encountered.		
TP-1	06/02	0-1	Gravel/rock		Submitted at sand/silt contact.
		1-5	Brown sand		
		5-6	Gray sandy silt	136	
			Total Depth = 6 feet below grade surface		
			Groundwater encountered at ~5.5 feet below grade		
			surface. Sheen on groundwater.		
TP-2	06/02	0-1	Rock, gravel, sand, geotextile from Holbrook Trench recovery system	NA	NA
			Total Depth = 1 feet below grade surface		
			Groundwater not encountered.		
TP-3	06/02	0-1.5	Rock, brown sand, electrical conduit for Holbrook	NA	NA
			Slough recovery system		
			Total Depth = 1.5 feet below grade surface		
			Groundwater not encountered.		

COP0019377

APPENDIX A
SUMMARY OF HISTORIC BORING AND TEST PIT LOGS
Chevron Willbridge Distribution Center
Portland, Oregon

Exploratory Boring or Test Pit ID	Date	Depth (feet)	Soil Description	Photo-Ionization Detector Reading (ppm)	Sample Collection
TP-4	06/02	0-1	Gravel/rock		Submitted at sand/silt contact.
		1-4.9	Brown sand		
		4.9-5.5	Green/gray silt	0	
			Total Depth = 5 5 feet below grade surface Groundwater encountered at ~5.5 feet below grade		
			surface. No sheen on groundwater.		
TP-5	06/02	0-1	Gravel/rock		Submitted at sand/silt contact.
		1-5.6	Brown sand		
		5.6-6	Green/gray silt	0	
			Total Depth = 6 feet below grade surface		
			Groundwater encountered at ~5.6 feet below grade		
			surface. No sheen on groundwater.		
TP-6	06/02	0-1	Gravel/rock		Submitted at sand/silt contact.
		1-5.5	Brown sand		
		5.5-6	Green/gray silt	250	
			Total Depth = 6 feet below grade surface		
			Groundwater encountered at ~5.5 feet below grade		
			surface. Slight sheen on groundwater.		
TP-7	06/02	0-1	Gravel/rock		Submitted at sand/silt contact.
		1-5.5	Brown sand		
		5.5-6	Green/gray silt	182	
			Total Depth = 6 feet below grade surface		
			Groundwater encountered at ~5.5 feet below grade		
			surface. Sheen on groundwater.		
TP-8	06/02	0-1	Gravel/rock		Submitted from impacted sand.
		1-7	Coarse, dark gray sand and gravel	55	
			Total Depth = 7 feet below grade surface		
			Groundwater encountered at ~5.5 feet below grade		
			surface. Sheen on groundwater, good recharge.		
			Wood in pit.		
TP-9	06/02	0-1	Gravel/rock		NA
		1-6	Gray sand and gravel	15	
			Total Depth = 6 feet below grade surface		
			Groundwater encountered at ~5.5 feet below grade		
			surface. Sheen on groundwater, good recharge Broken pieces of clay sewer pipe in pit.		
TP-10	06/02	0-1	Gravel/rock		NA
		1-3.5	Brown sand		
		3.5-6	Green/gray silt	125	
			Total Depth = 6 feet below grade surface		
			Groundwater not encountered.		

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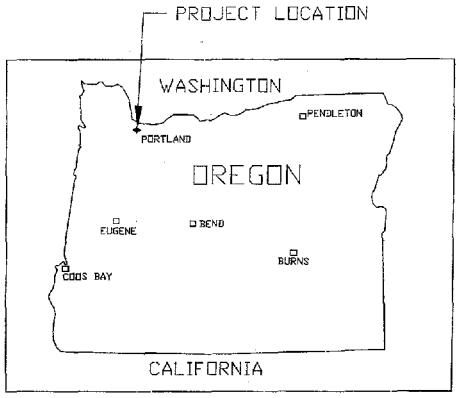
APPENDIX A
SUMMARY OF HISTORIC BORING AND TEST PIT LOGS
Chevron Willbridge Distribution Center
Portland, Oregon

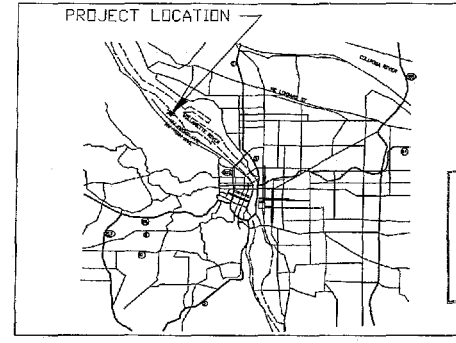
Exploratory Boring or Test Pit ID	Date	Depth (feet)	Soil Description	Photo-Ionization Detector Reading (ppm)	Sample Collection
TP-11	06/02	0-1	Gravel/rock		NA
		1-5	Brown sand		
		5-6	Green/gray silt	140	
			Total Depth = 6 feet below grade surface Groundwater not encountered.		
TP-12	06/02	0-1	Gravel/rock		NA
		1-4	Brown sand		
		4-6	Green/gray silt	166	
			Total Depth = 6 feet below grade surface		
			Groundwater not encountered.		
TP-13	06/02	0-1	Gravel/rock		NA
		1-7	Brown sand		
		7-8	Green/gray silt	13	
			Total Depth = 8 feet below grade surface		
			Groundwater not encountered.		
			Wood in pit in sand at ~5.5 feet, not a sewer pipe,		
			organic odor		

Notes:
*PID = Photo Ionization Detecter
ppm = parts per million
NA = Not available or not applicable
Exploratory test pits or borings completed by either KHM Environmental or Delta Environmental

COP0019379



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

City of Portland
APPROVED
DEC 2 8 2004
Permit Number

INDEX OF DRAWINGS

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GRADING PLAN	9
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CAUTION NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY IN ADVANCE BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

CONSTRUCTION DRAWINGS FOR

CHEVRON AND CONOCO PHILLIPS WILLBRIDGE TERMINAL GROUNDWATER CUTOFF WALL

PORTLAND, OREGON

NO.	DATE	DESCRIPTION
2	2/25/03	Wall design update, February 2003
3		Wall design update, March 2003
4	8/22/03	Wall design change, August 2003
5	10/23/03	Wall design change, October 2003

REVISION

AREA(S) USED: _____
ROTATION ANGLE: _____
CONSTRUCTED BY: _____
WAS/IS/IT COMPLETED _____
MAP CORRECTED BY: _____ CHECKED BY: _____
FINAL MAP DATA

DESIGNED BY	BJB
DRAWN BY	CCA
CHECKED BY	
DESIGN WORK	

DATE APPVD.
PROGRESS WORK
CONST. WORK

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
2185 SW CHANDLER DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6910

TITLE SHEET
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

T/4 SECTION: 2423
JOB NO.: 02-299
SHEET NO.: 1 of 10

COP0019380

GENERAL PROJECT NOTES

1) Contractor shall notify Bureau of Environmental Services at (503) 823-7931 two (2) business days prior to commencement of work.

2) All construction shall conform to City of Portland standard construction specifications, as revised in 1998. Contractor and/or subcontractor shall have a minimum of one set of approved plans and City of Portland standard construction specifications on the job site at all times during construction.

3) Office of Planning and Development Review, Approvals, and Permits required for privately maintained structures constructed. All work approved under OPDR permits shall be privately owned and maintained.

4) Attention Excavators: Oregon law requires you to follow rules adopted by Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of those rules from the Center by calling (503)232-1987. If you have any questions about the rules, you may contact the Center. You must notify the Center at least two (2) business days, but not more than ten (10) business days, before commencing an excavation. Call 503-246-6699.

5) Slope stability evaluation to be completed prior to any disturbance of existing slope on Chevron property.

6) Excavated trench spoil material shall be disposed of at a proper landfill, or applicant shall obtain a fill permit from the Office of Planning and Development Review before being disposed of on-site. A copy of the grading permit and plan should also be provided to the Bureau of Environmental Services for construction inspection

7) Site erosion plan to be approved and controls in place prior to construction. All work under this permit will require site erosion control in compliance with all provisions of the City Title 10.

ADDITIONAL PROJECT NOTES

SHEET PILE WALL

1) Sheet Piling to be Hoesch H-1700 Steel Sheet Piling or equivalent, as approved by Engineer and Client.

2) Sheet Piling joints to include waterstop seals. Waterstop seals shall be ADEKA ULTRA SEAL A-50 or equivalent as approved by Engineer and Client.

3) Sheet Piling and waterstop seals to be installed consistent with manufacturers' recommendations.

COLLECTION TRENCH

1) Trench sand backfill shall be medium to coarse sand, moderately graded. The sand shall be free of silt, clay, loam, friable or soluble materials, or organic matter, conforming to the following gradation (or other as approved by Engineer and Client):

Sieve Size	Percent Passing
No. 4	100
No. 10	10 to 100
No. 40	0 to 10
No. 200	0

2) Geotextile Fabric separating sand and rip rap shall be non-woven fabric that complies with the following properties (unless otherwise approved by Engineer and Client):

Test	Method	Value
Grab Tensile Strength (N)	ASTM D4632	1155
Burst Strength (KPa)	ASTM D3786 Mod.	3000
Puncture Strength (N)	ASTM D4833 or ASTM D3787 Mod.	490
Apparent Opening Size (uM)	ASTM D4751	212
Ultraviolet Stability	ASTM D4355 @500 hrs	70% Strength retained

NO.	DATE	DESCRIPTION	APPD.
2	2/23/03	Well design update, February 2003	
3		Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
4	10/23/03	Well design change, October 2003	

REVISION

XREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
31600 SW CHARBONNEAU DR. SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6990

PROJECT NOTES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

1/4 SECTION 2423
JOB NO. 02-239
SHEET NO. 2 of 10

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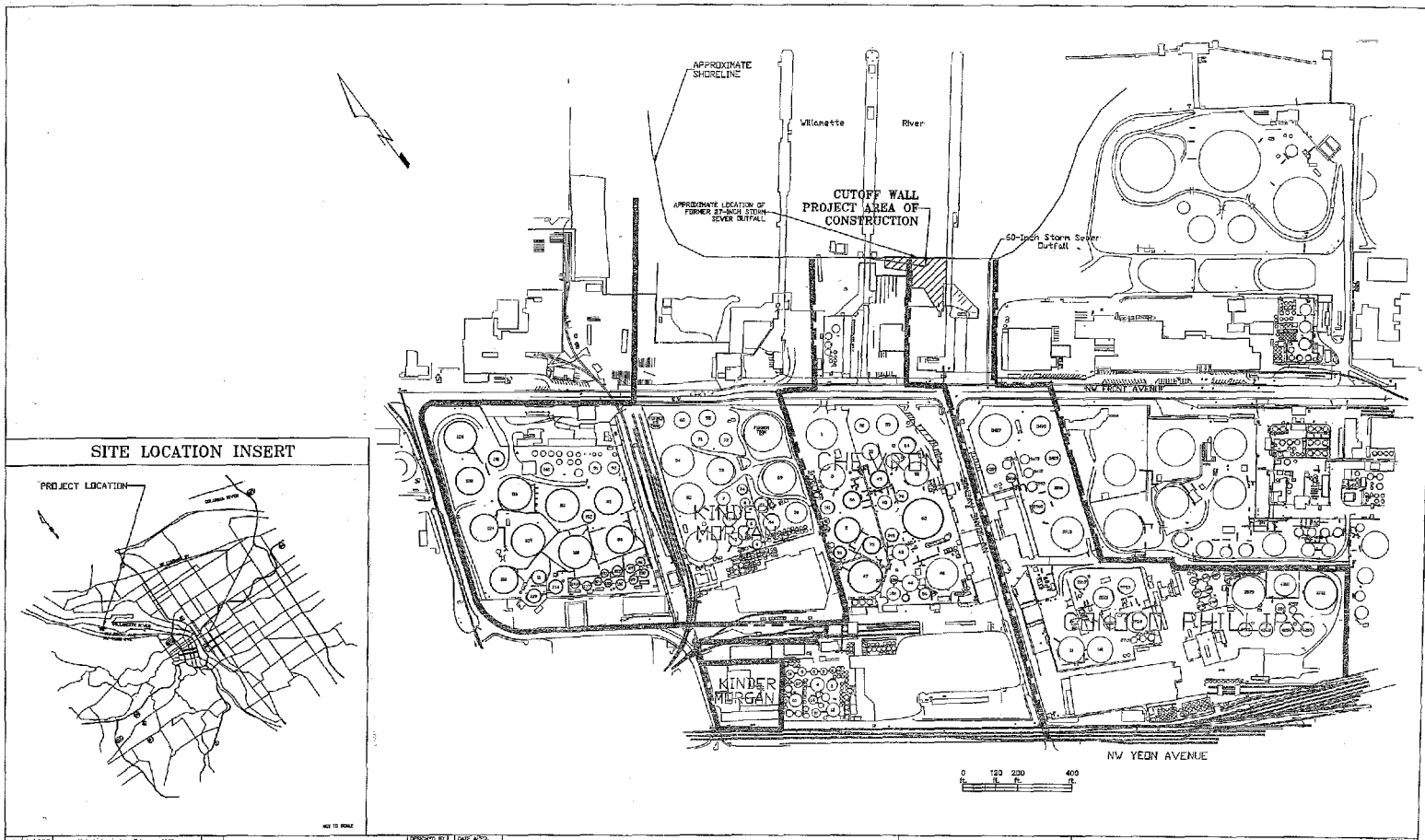


NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	

REVISION

SHEET(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

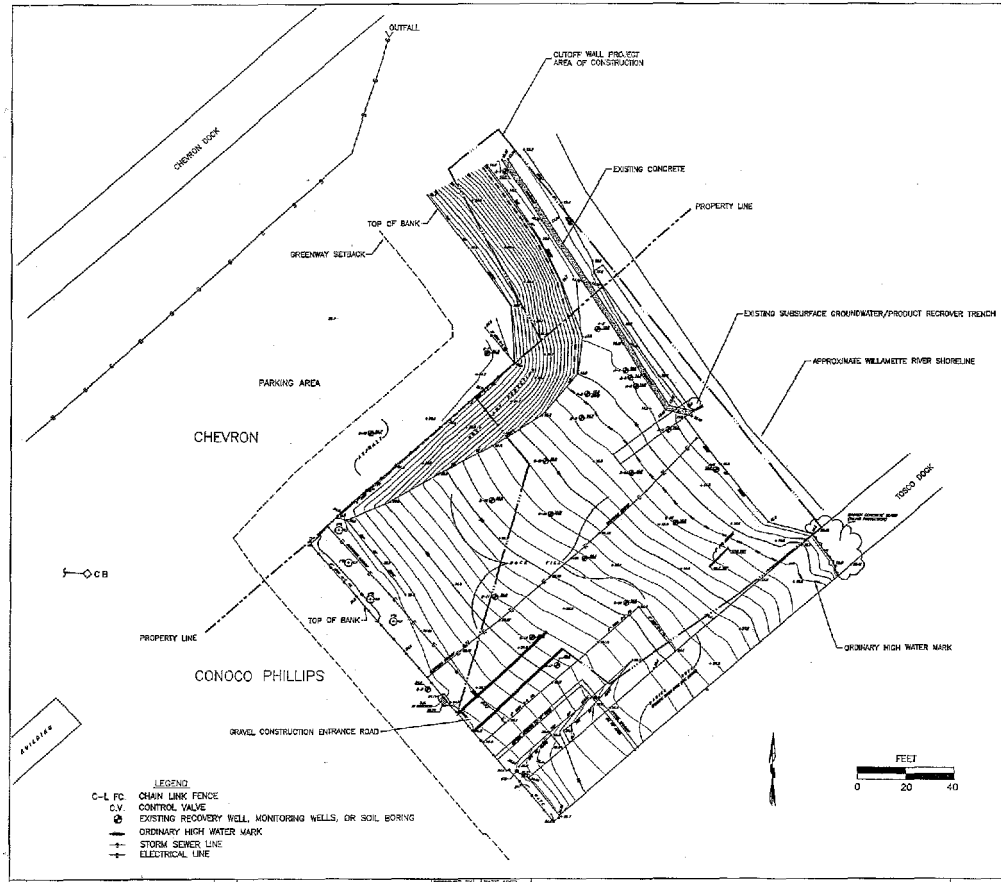
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31960 SW CHARBONNEAU RD, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-8000

PROJECT LOCATION MAP
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 3 of 10

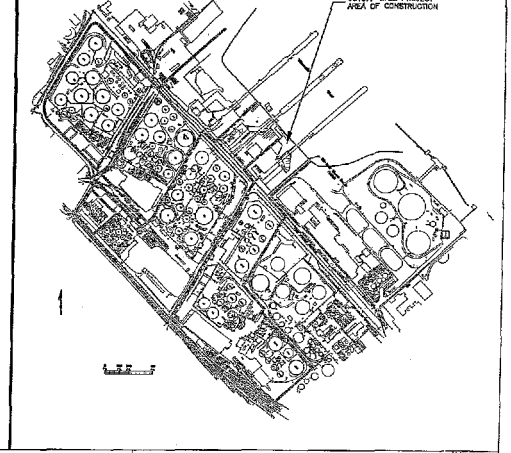
COP0019382



NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.64
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN
6. 4% OF SITE COVERED BY ROOFED STRUCTURES
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.

SITE LOCATION INSERT



NO.	DATE	DESCRIPTION	APPR.
2	8/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	8/26/04	Design change, August 2004	

REVISION

DEFIED USED:
ESTATION AMEED:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

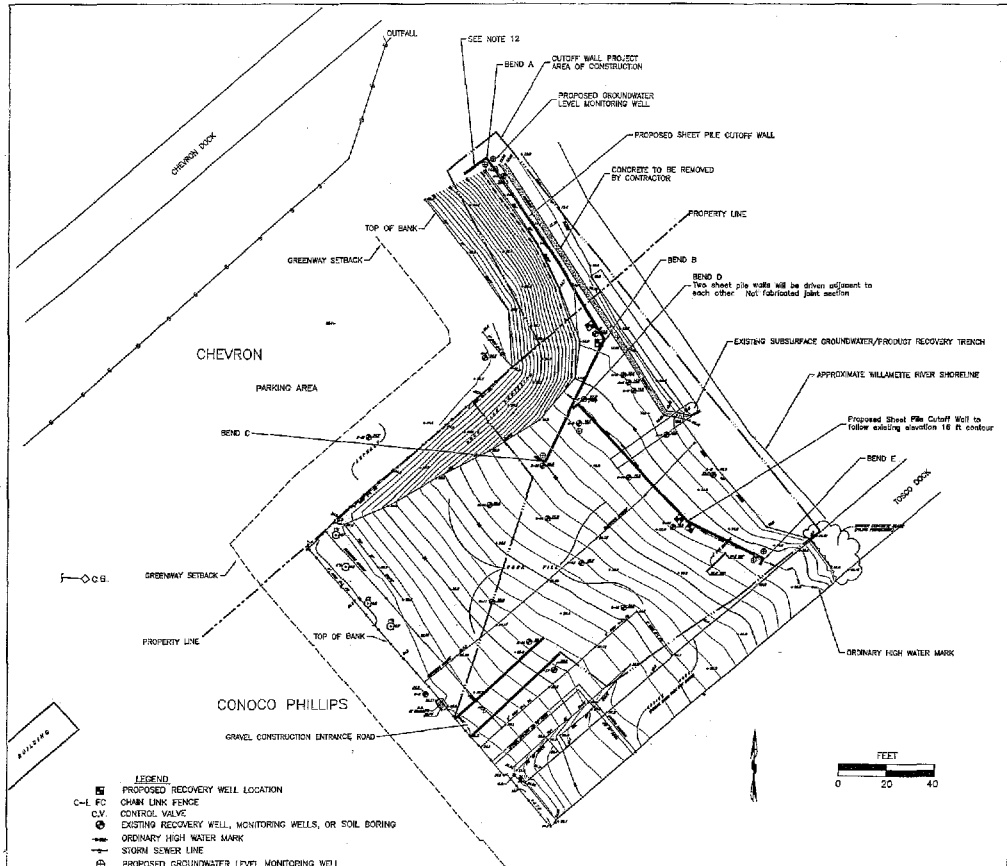
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
3950 SW CHARBONNEAU DR. SUITE 100
WILSONVILLE, OREGON 97070 (503)694-6960

EXISTING SITE FEATURES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

L/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 4 of 10

COP0019383



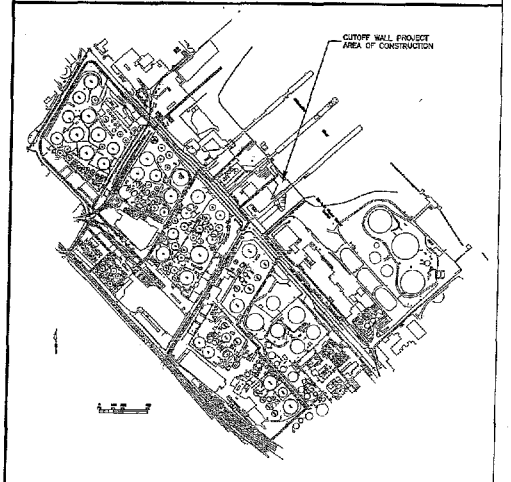
LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE
- PROPOSED GROUNDWATER LEVEL MONITORING WELL

NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.64
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.
12. SLOPE STABILITY EVALUATION TO BE COMPLETED PRIOR TO ANY DISTURBANCE OF EXISTING SLOPE ON CHEVRON PROPERTY

SITE LOCATION INSERT



NO.	DATE	DESCRIPTION	APPD.
2	8/25/03	Wall design update, February, 2003	
3		Wall design update, March, 2003	
4	8/25/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	6/26/04	Design change, August 2004	

REVISION

VERIFIED USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN YEAR:
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
21540 SW CHARBONNEAU DR. SUITE 102
WILLSONVILLE, OREGON 97070 (503)681-6960

SITE PLAN
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

P/N SECTION 2423
JOB NO. 02-158
SHEET NO. 5 of 10

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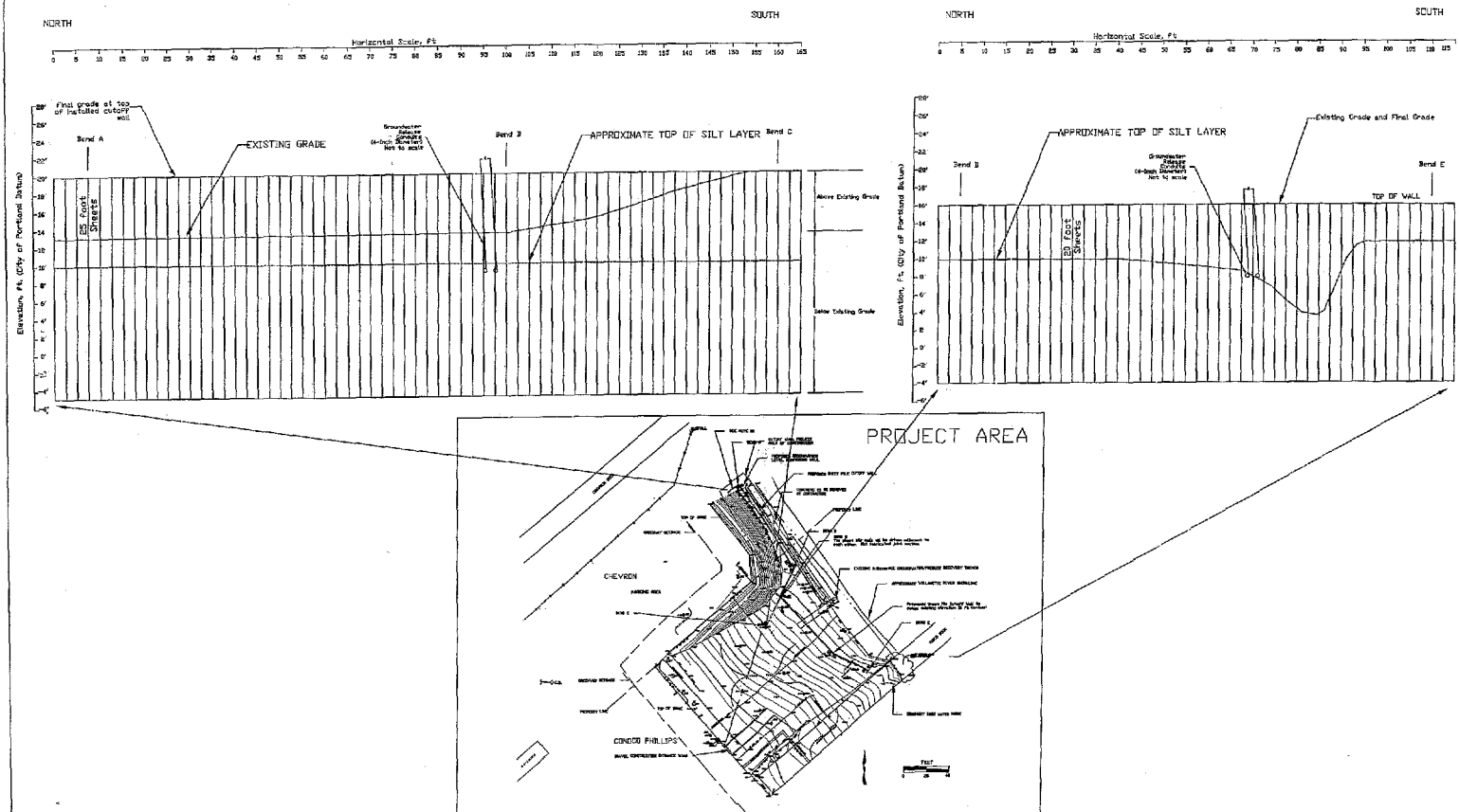

NO.	DATE	DESCRIPTION	APPD.
2	2/23/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	8/26/04	Wall design change, August 2004	

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FINAL MAP DATA

DESIGNED BY: BJB	DATE APPD.
DRAWN BY: CCA	PROGRAM MGR.
CHECKED BY:	CONST. MGR.
DESIGN MGR.	

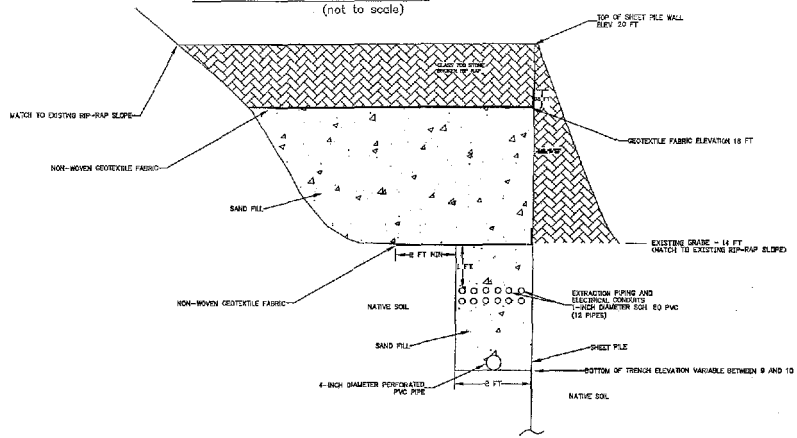
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31950 SW CHAMBERLAIN DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)624-6050

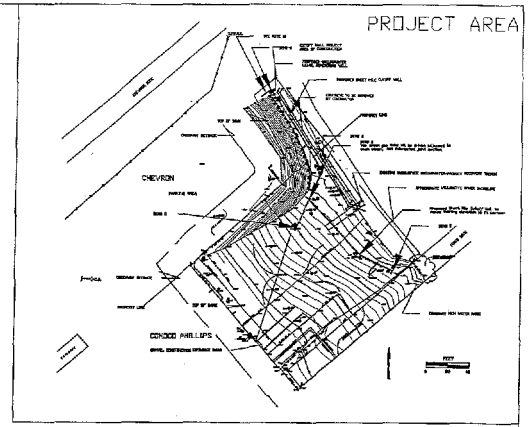
SHEET PILE CROSS SECTION
ALONG ALIGNMENT OF CUTOFF WALL
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane

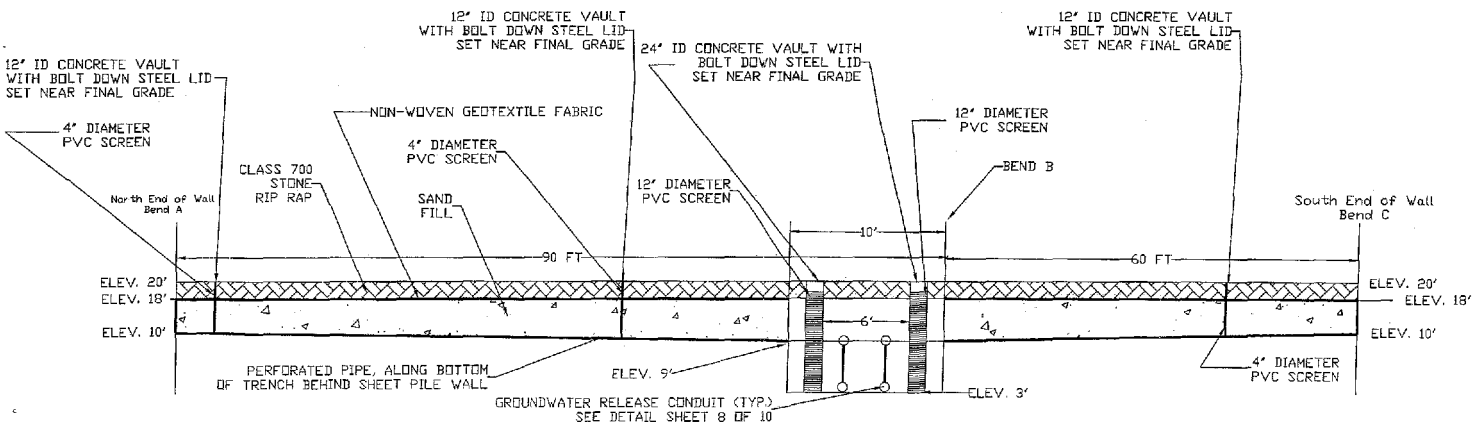
1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 6 of 10

COP0019385

TYPICAL TRENCH CROSS-SECTION DETAIL – NORTH OF BEND B
(not to scale)







NO.	DATE	REVISION	APPD.
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6	08/26/04	Design change, August 2004	

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PROJECT COMPLETED
MAP COMPLETED BY
CHECKED BY
FINAL MAP DATA

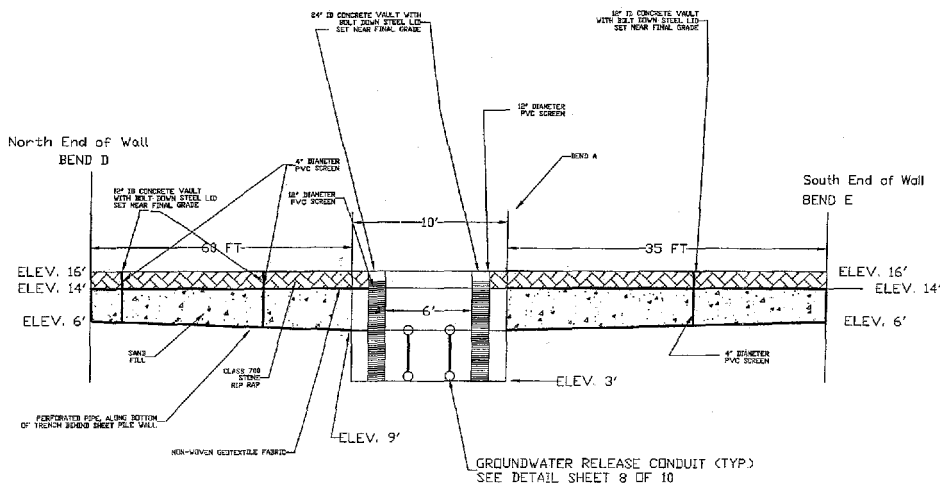
DESIGNED BY BJB
DRAWN BY CCA
CHECKED BY
DESIGN WORK
DATE APPD.
PROGRAM MGR.
QUALITY MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
3180 SW Jamboree Rd, Suite 101
Wilsonville, Oregon 97070 (503)846-0660

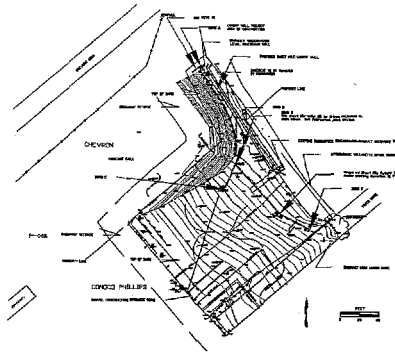
CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

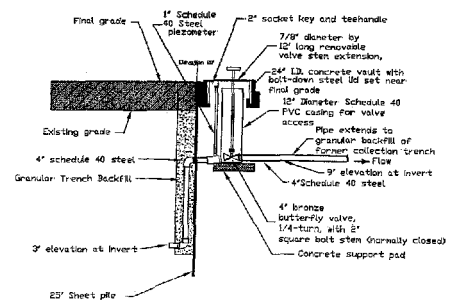
1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 7 of 10

COP0019386



PROJECT AREA





Groundwater Release Conduit A
Wall (not to scale)

NO.	DATE	DESCRIPTION	APPD.
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DATE APPD.
DRAWN BY: CCA
PROGRAM MGR.
CHECKED BY
CONST. MGR.
DESIGN MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31900 SW CHAPMAN RD. SUITE 101
WILSONVILLE, OREGON 97070 (503)694-2900

CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 8 of 10

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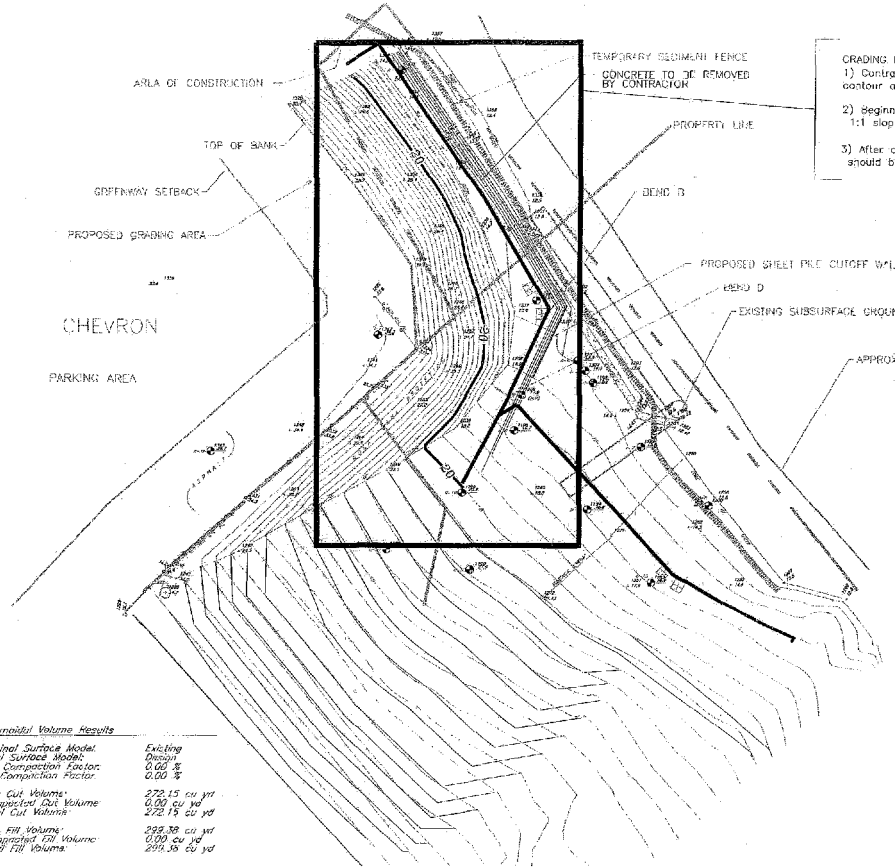

GRADING NOTES

1) Contractor to backfill behind sheetpile wall between Elev =20.0 contour and top-of-wall (Elev =20.0) at 0% slope with onsite riprap

2) Beginning at top of sheetpile wall (Elev =20.0), Contractor to construct 1:1 slope toward river to Elev =14.0 using onsite riprap

3) After construction activities are completed no section of sheet pile wall should be above level of riprap.

LEGEND

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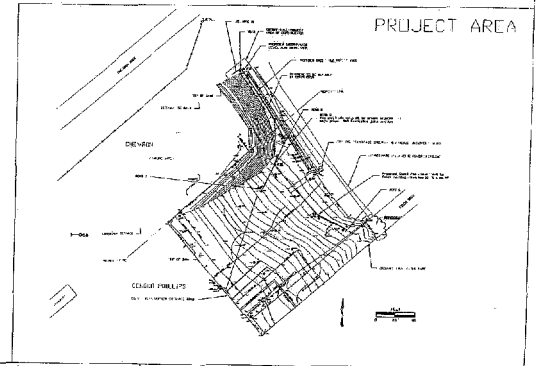
- C-L FC CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

FEET

0 30 60



Prismoidal Volume Results

Original Surface Model:	*Existing*
Final Surface Model:	*Design*
Cut Compaction Factor:	*0.00 %*
Fill Compaction Factor:	*0.00 %*
Raw Cut Volume:	*272.15 cu yd*
Compacted Cut Volume:	*0.00 cu yd*
Total Cut Volume:	*272.15 cu yd*
Raw Fill Volume:	*299.38 cu yd*
Compacted Fill Volume:	*0.00 cu yd*
Total Fill Volume:	*299.38 cu yd*

NO.	DATE	DESCRIPTION	APPD.
1	2/25/03	Well design update, February, 2003	
2	3/	Well design update, March 2003	
4	6/25/03	Well design change, August 2003	
5	10/21/03	Well design change, October 2003	
6	08/25/04	Design change, August 2004	
7	09/28/04	Grading Plan modification, September 2004	

REVISION

ROUTES USED
ROTATION ANGLE
CONSTRUCTED BY
PROJECT COMPLETED
AS CORRECTED BY CHECKED BY
FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31560 SW CHANDLER ROAD SUITE 100
WILSONVILLE, OREGON 97070 (503)694-2000

GRADING PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

T/A SECTION 2423
JOB NO. 02-150
SHEET NO.

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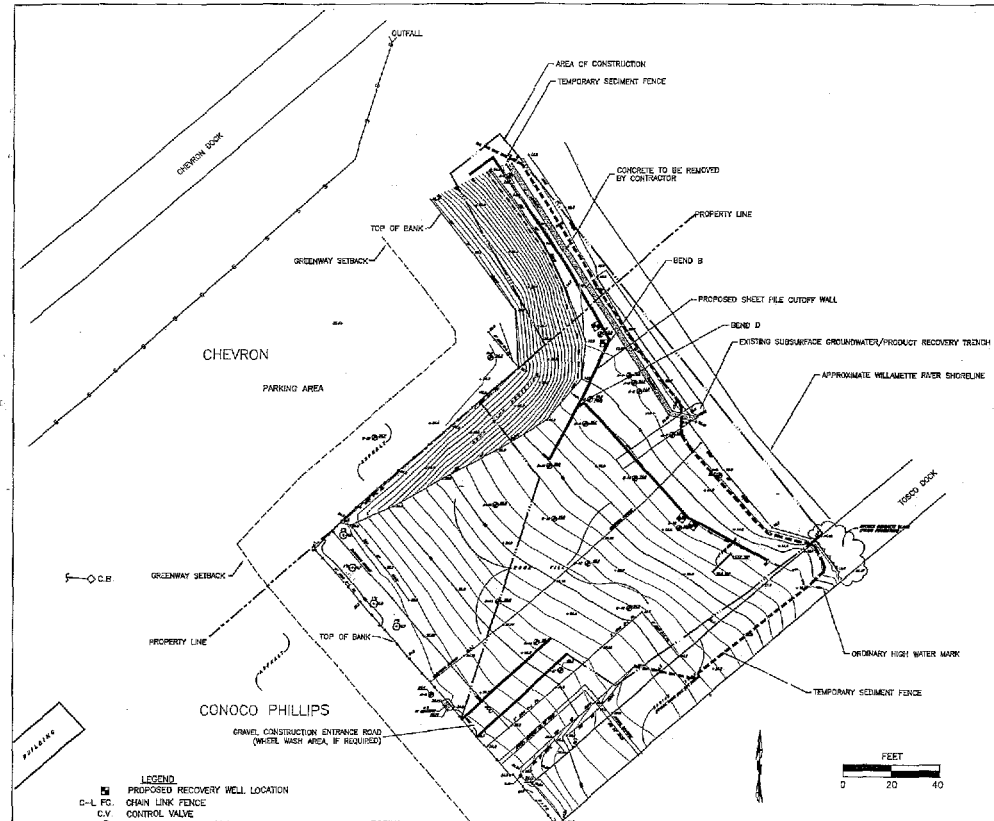


LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

STANDARD NOTES FOR EROSION CONTROL PLANS

A. Approval of this erosion, sediment and pollution control plan (EPCP) does not constitute an approval of permanent road or drainage design (e.g., sites and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.)

B. The implementation of this EPCP and the construction, maintenance, replacement, and upgrading of these EPCP facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.

C. The boundaries of the clearing limits shown on this plan shall be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the applicant/contractor for the duration of construction.

D. The EPCP facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to insure that sediment and sediment laden water do not enter the drainage system, roadways, or violate applicable water standards.

E. The EPCP facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these EPCP facilities shall be expanded as needed for unexpected storm events and to ensure that sediment and sediment-laden water do not leave the site.

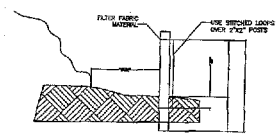
F. The EPCP facilities shall be inspected daily by the applicant/contractor and maintained as necessary to ensure their continued functioning.

G. The EPCP facilities on inactive sites shall be inspected and maintained a minimum of once a month or within the 24 hours following a storm event.

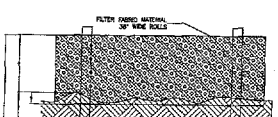
H. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to insure that all paved areas are kept clean for the duration of the project.

STANDARD NOTES FOR SEDIMENT FENCES

1. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to the post, or overlap 2 inch x 2 inch posts and attach as shown on sheet sheet 4-2A.
2. The filter fabric fence shall be installed to follow the contours where feasible. The fence posts shall be spaced a maximum of 6 feet apart and driven securely into the ground a minimum of 24 inches.
3. The filter fabric shall have a minimum vertical height of 6 inches. An embedded material from filter fabric fence installation shall be installed and compacted, along the entire distributed area.
4. Standard or heavy duty filter fabric fence shall have manufactured reflected loops for 2 inch x 2 inch post installation. Stitched loops shall be installed on the uphill side of the sloped area.
5. Filter fabric fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently protected and stabilized.
6. Filter fabric fences shall be inspected by applicant/contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.



SIDE VIEW



SIDE VIEW

TEMPORARY SEDIMENT FENCE DETAIL

NO.	DATE	DESCRIPTION	APPR.
2	2/25/03	Well design update, February, 2003	
3		Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	
6	08/26/04	Design change, August 2004	

REVISION

XREF(S) USED:		DESIGNED BY: BJB	DATE APPR.
RELATION ANGLE:		DRAWN BY: CCA	PROGRAM NO.
CONSTRUCTED BY:		CHECKED BY:	CONST. NO.
PROJECT COMPLETED:			
MAP CORRECTED BY:	CHECKED BY:	DESIGN NO.	
FINAL MAP DATA			

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
3000 SW CLAIMBOWEAU DR, SUITE 200
WILSONVILLE, OREGON 97070 (503)694-9560

EROSION CONTROL PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

LAB SECTION: 2423
JOB NO.: 02-158
SHEET NO.: 10 of 10

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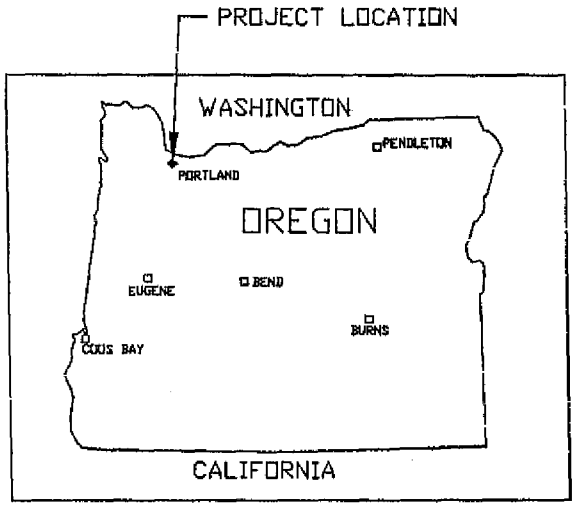
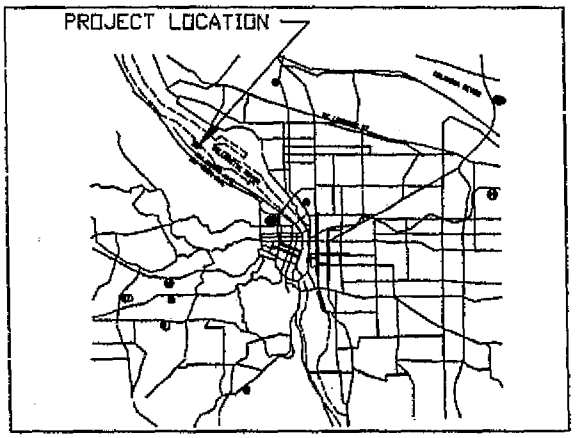


VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

INDEX OF DRAWINGS

DRAWING	SHEET
TITLE SHEET	1
PROJECT NOTES	2
PROJECT LOCATION MAP	3
EXISTING SITE FEATURES	4
SITE PLAN	5
SHEET PILE CROSS-SECTON ALONG ALIGNMENT OF CUTOFF WALL	6
CUTOFF WALL COLLECTION TRENCH DETAILS	7
CUTOFF WALL COLLECTION TRENCH DETAILS	8
GRADING PLAN	9
EROSION CONTROL PLAN	10

CAUTION NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY IN ADVANCE BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

CONSTRUCTION DRAWINGS FOR

CHEVRON AND CONOCO PHILLIPS WILLBRIDGE TERMINAL GROUNDWATER CUTOFF WALL

PORTLAND, OREGON

NO.	DATE	REVISION	APPD.
2	2/26/03	Well design update, February 2003	
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4	8/25/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	

DESIGNED BY BJB
DRAWN BY CCA
CHECKED BY
DESIGN MGR.

RSV ENGINEERING, INC.

TITLE SHEET
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

T/A NUMBER 2423
JOB NO. 02-299
SHEET NO. 1 of 10

COP00193900

GENERAL PROJECT NOTES

1) Contractor shall notify Bureau of Environmental Services at (503) 823-7931 two (2) business days prior to commencement of work.

2) All construction shall conform to City of Portland standard construction specifications, as revised in 1998. Contractor and/or subcontractor shall have a minimum of one set of approved plans and City of Portland standard construction specifications on the job site at all times during construction.

3) Office of Planning and Development Review, Approvals, and Permits required for privately maintained structures constructed. All work approved under OPDR permits shall be privately owned and maintained.

4) Attention Excavators: Oregon law requires you to follow rules adopted by Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of those rules from the Center by calling (503)232-1987. If you have any questions about the rules, you may contact the Center. You must notify the Center at least two (2) business days, but not more than ten (10) business days, before commencing an excavation. Call 503-246-6699.

5) Slope stability evaluation to be completed prior to any disturbance of existing slope on Chevron property.

6) Excavated trench spoil material shall be disposed of at a proper landfill, or applicant shall obtain a fill permit from the Office of Planning and Development Review before being disposed of on-site. A copy of the grading permit and plan should also be provided to the Bureau of Environmental Services for construction inspection.

7) Site erosion plan to be approved and controls in place prior to construction. All work under this permit will require site erosion control in compliance with all provisions of the City Title 10.

ADDITIONAL PROJECT NOTES

SHEET PILE WALL

1) Sheet Piling to be Hoesch H-1700 Steel Sheet Piling or equivalent, as approved by Engineer and Client.

2) Sheet Piling joints to include waterstop seals. Waterstop seals shall be ADEKA ULTRA SEAL A-50 or equivalent as approved by Engineer and Client.

3) Sheet Piling and waterstop seals to be installed consistent with manufacturers' recommendations.

COLLECTION TRENCH

1) Trench sand backfill shall be medium to coarse sand, moderately graded. The sand shall be free of silt, clay, loam, friable or soluble materials, or organic matter, conforming to the following gradation (or other as approved by Engineer and Client):

Sieve Size	Percent Passing
No. 4	100
No. 10	10 to 100
No. 40	0 to 10
No. 200	0

2) Geotextile Fabric separating sand and rip rap shall be non-woven fabric that complies with the following properties (unless otherwise approved by Engineer and Client):

Test	Method	Value
Grab Tensile Strength (N)	ASTM D4632	1155
Burst Strength (KPa)	ASTM D3786 Mod.	3000
Puncture Strength (N)	ASTM D4833 or ASTM D3787 Mod.	490
Apparent Opening Size (uM)	ASTM D4751	212
Ultraviolet Stability	ASTM D4355 @500 hrs	70% Strength retained

NO.	DATE	REVISION	APPD.
3	3/26/03	Well design update, February 2003	
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1	8/22/03	Well design change, August 2003	
4	10/23/03	Well design change, October 2003	

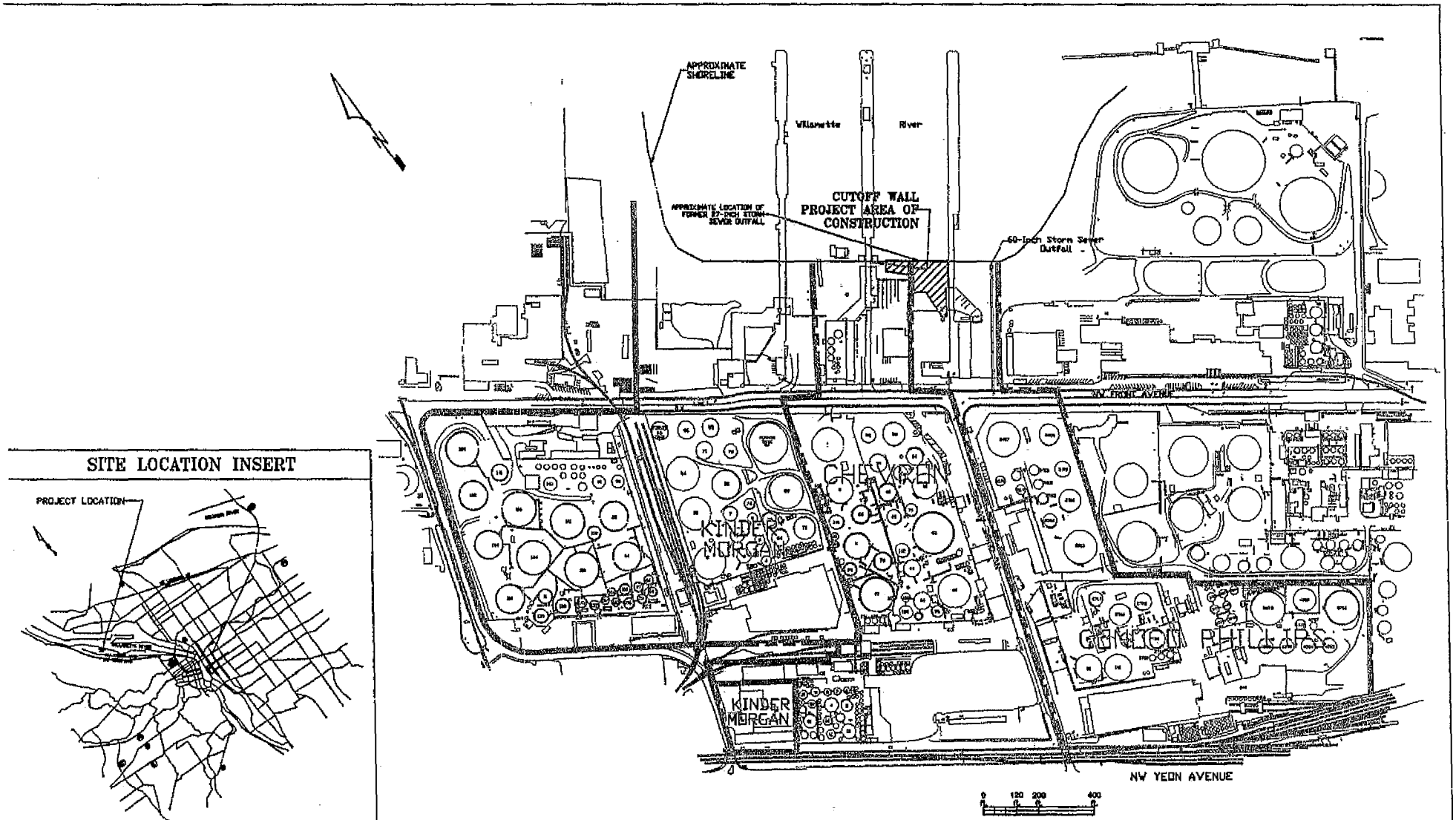
DESIGNED BY: BJB | DRAWN BY: CCA | CHECKED BY: | DATE APPD. | REVIEW MGR. | CONST. MGR. | CHIEF ENGR.

RSV ENGINEERING, INC.

PROJECT NOTES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

I/I SECTION 2423 | JOB NO. 02-299 | SHEET NO. 2 OF 10

COP0019391



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5	10/23/03	Wall design change, October 2003	

REVISION

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MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

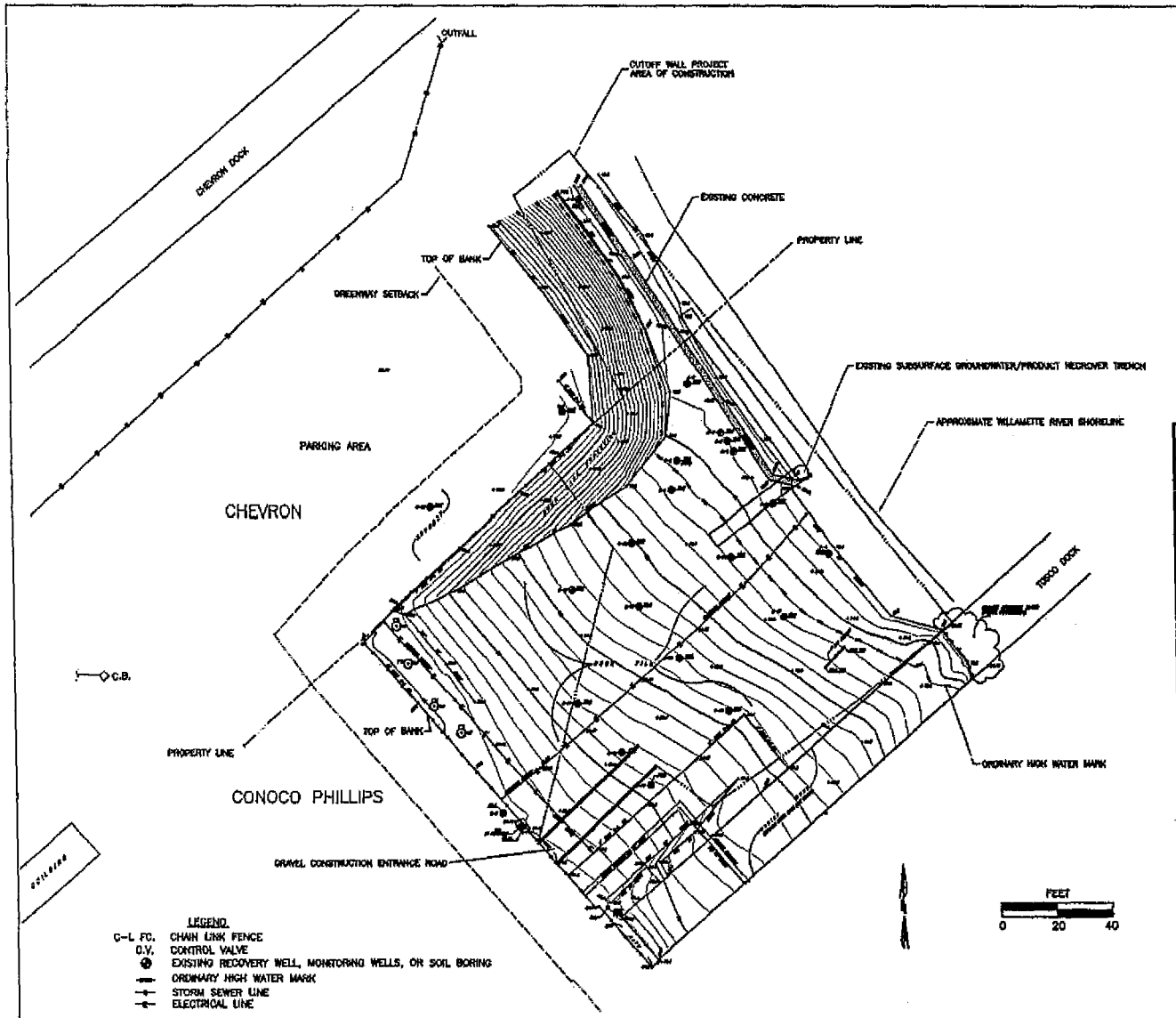
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31904 SW CHAMBERLAIN DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)[illegible]

PROJECT LOCATION MAP
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 3 of 10

COP0019392



NOTES

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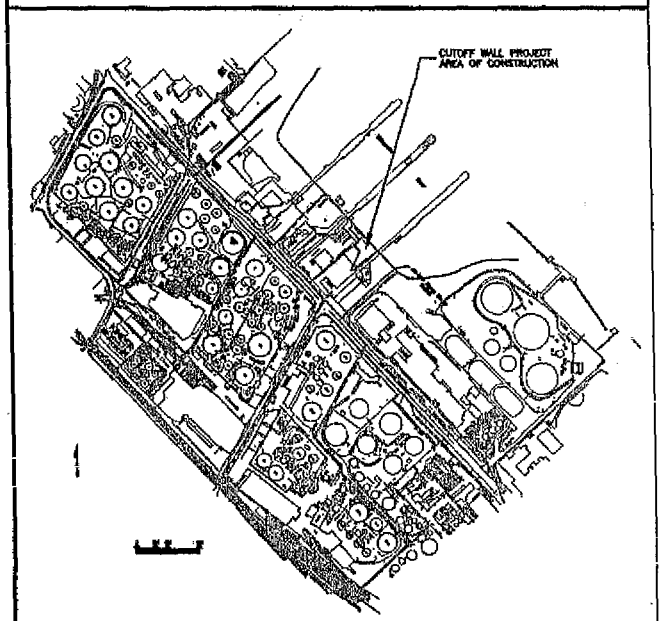
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 15 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.

SITE LOCATION INSERT



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MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

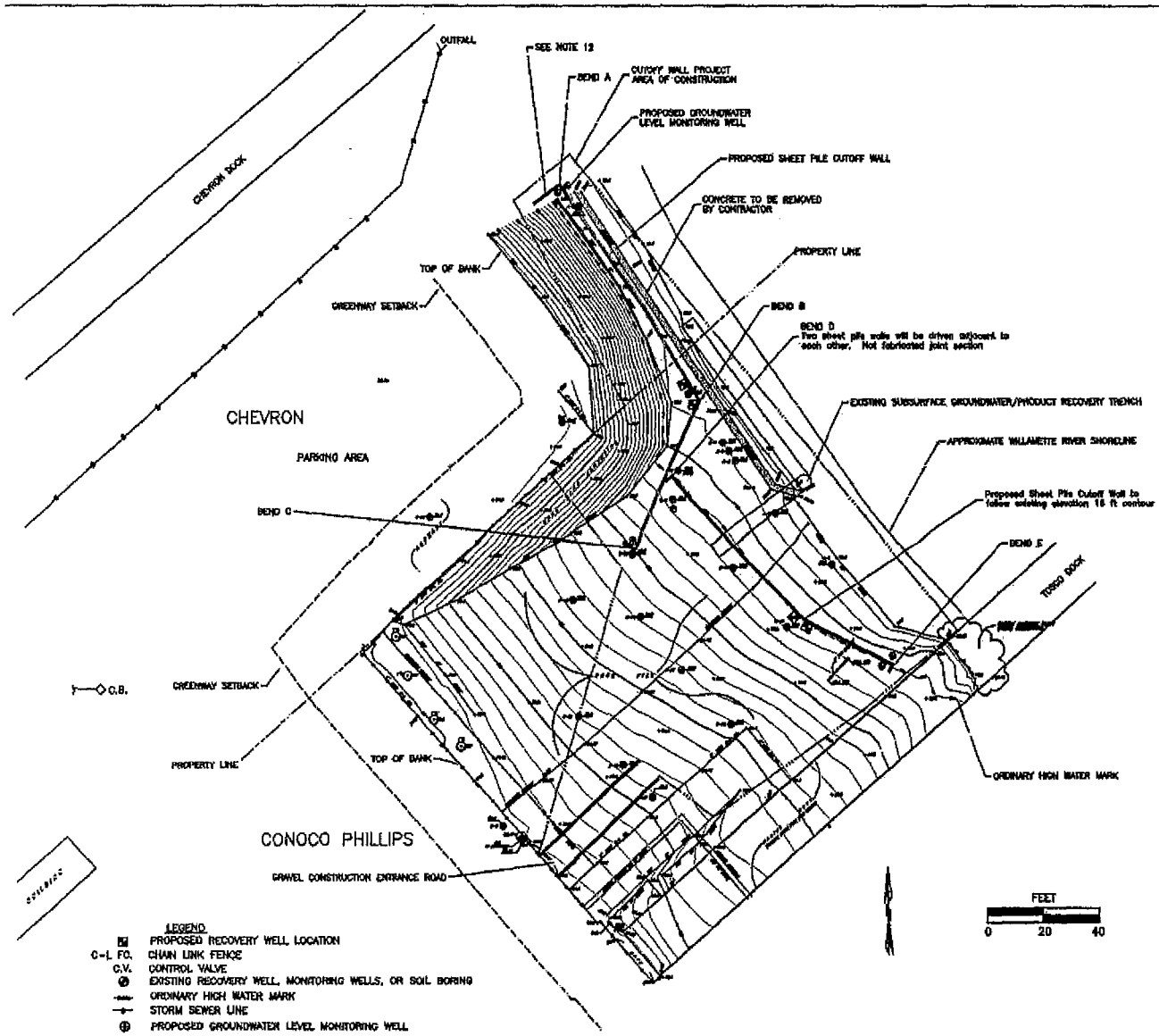
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPR.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
3740 SV CHRONOMEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6200

EXISTING SITE FEATURES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

L/4 SECTION 2423
JOB NO. 08-158
SHEET NO. 4 OF 10

COP0019393



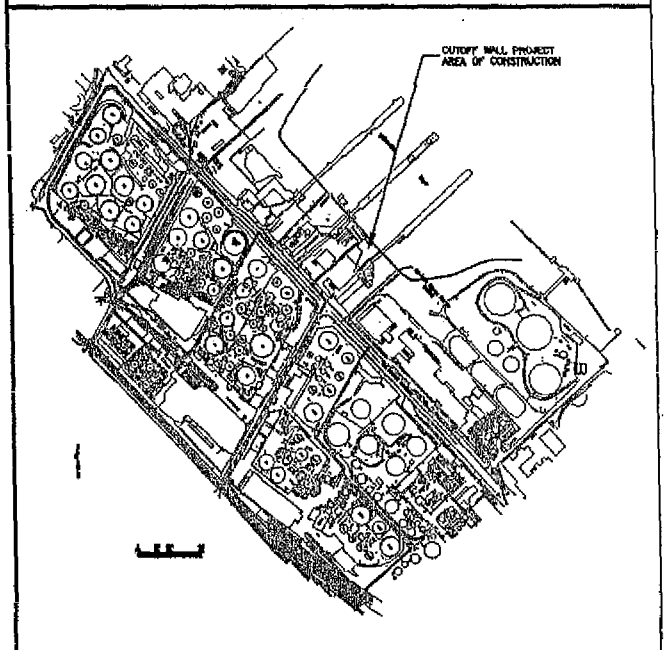
LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE
- PROPOSED GROUNDWATER LEVEL MONITORING WELL

NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2525. ELEVATION 34.64
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.
12. SLOPE STABILITY EVALUATION TO BE COMPLETED PRIOR TO ANY DISTURBANCE OF EXISTING SLOPE ON CHEVRON PROPERTY.

SITE LOCATION INSERT



NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Well design update, February, 2003	
3		Well design update, March, 2003	
4	8/08/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	
6	8/06/04	Design change, August 2004	

REVISION

PROPOSED USED
ROTATION ANGLE
CONSTRUCTED BY
PROJECT COMPLETED
MAP CORRECTED BY ____ CHECKED BY
FINAL MAP DATA

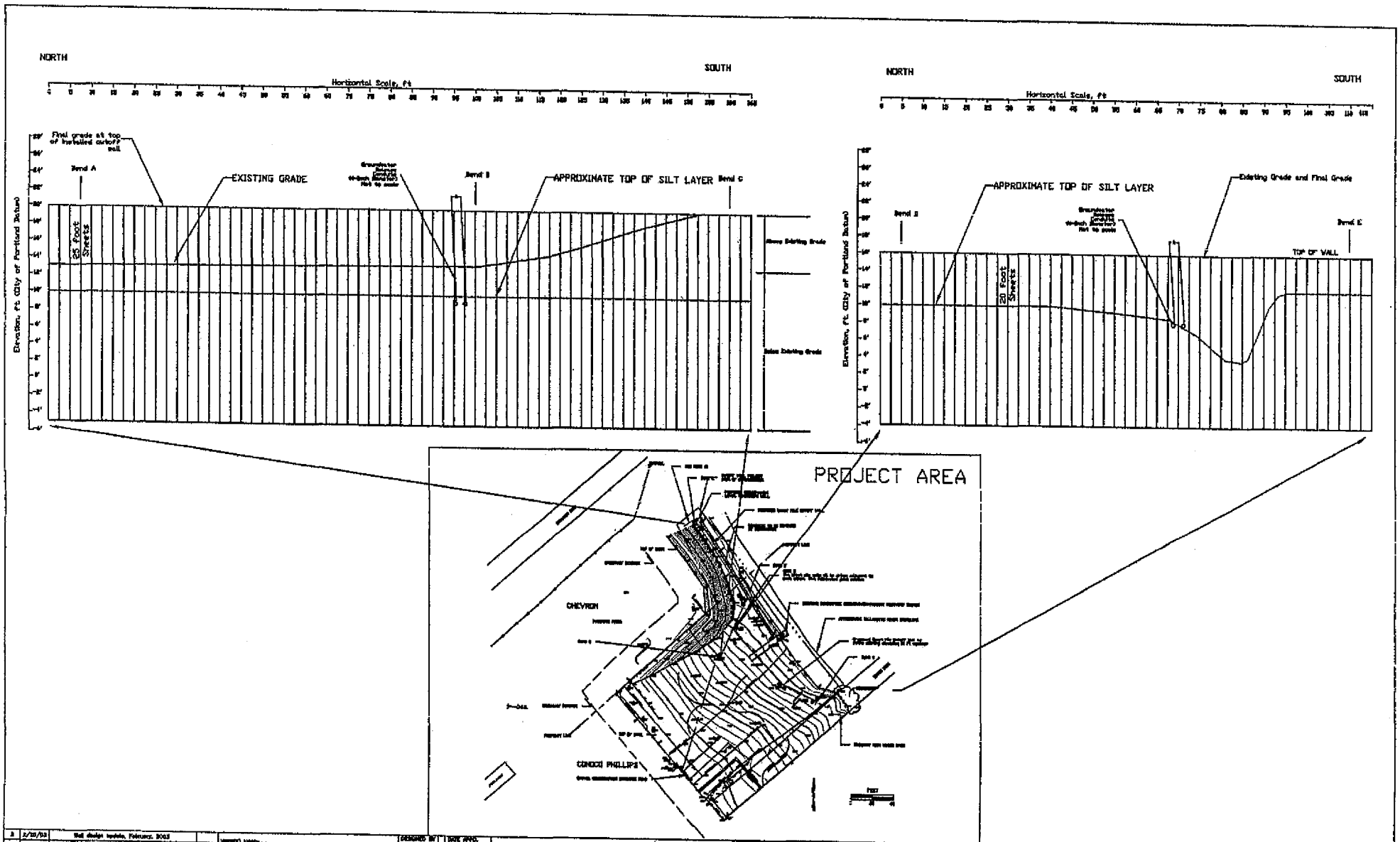
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY
DESIGN NO.
DATE APPD.
PROGRAM NO.
CONST. NO.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
2700 SW CHAMBERLAIN AVE, SUITE 101
VILLEMVILLE, OREGON 97070 (503)684-8940

SITE PLAN
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION 2423
JOB NO. 02-159
SHEET NO. 5 OF 10

COP0019394



NO.	DATE	DESCRIPTION	APPD.
3	2/20/03	Wall design update, February 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/31/03	Wall design change, October 2003	
6	8/20/04	Wall design change, August 2004	

REVISION

SHEET NO. ____
ROTATION ANGLE ____
CONSTRUCTED BY ____
PROJECT COMPLEXITY ____
MAP CORRECTED BY ____ CHECKED BY ____
FINAL MAP DATA

DESIGNED BY BJB
DRAWN BY CCA
CHECKED BY
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

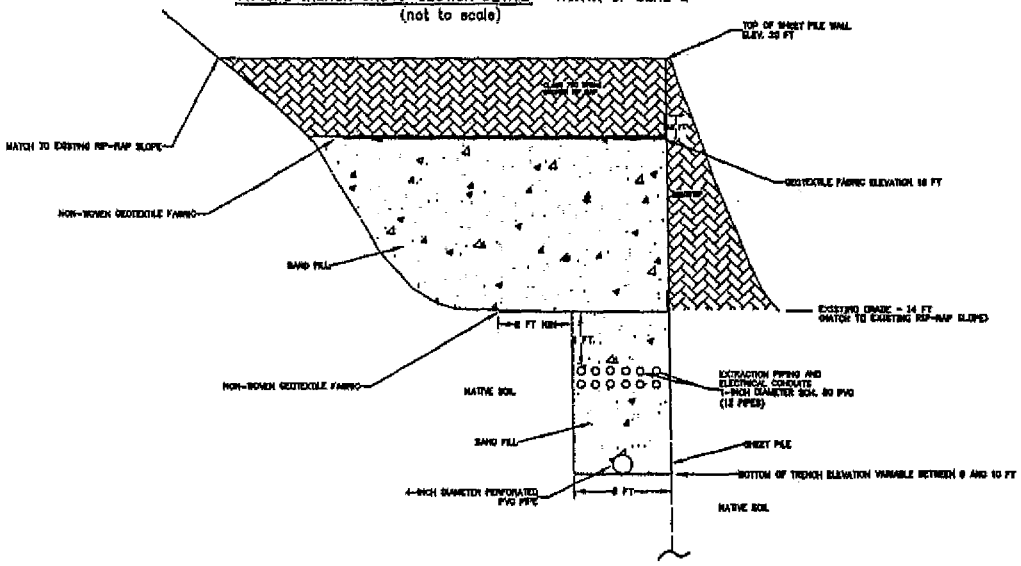
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
51600 SW CHAPMAN RD. SUITE 101
MILWAUKIE, OREGON 97078 (503)654-6880

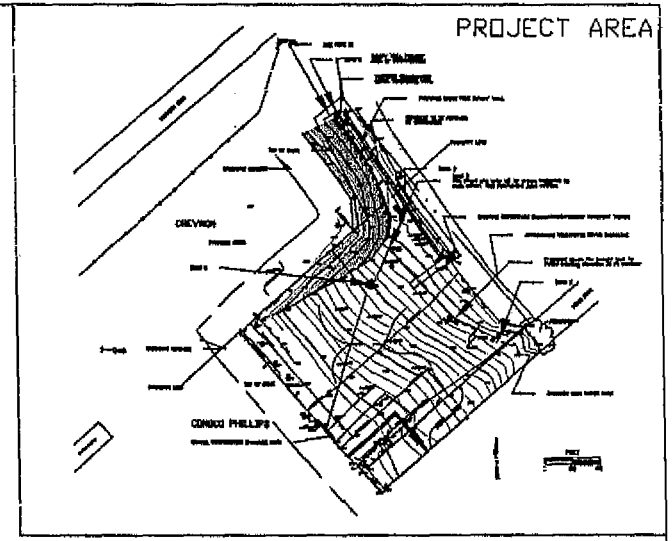
SHEET PILE CROSS SECTION
ALONG ALIGNMENT OF CUTOFF WALL
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane

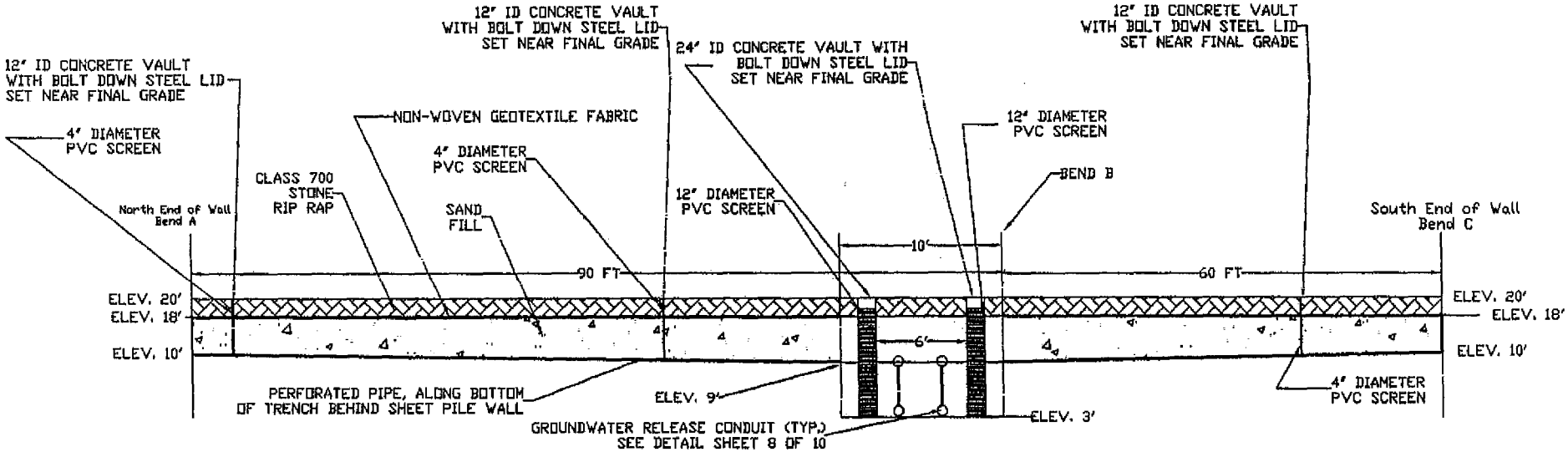
1/4 SECTION 2423
JOB NO. 02-156
SHEET NO. 6 of 10

COP0019395

TYPICAL TRENCH CROSS-SECTION DETAIL - NORTH OF BEND B
(not to scale)







NO.	DATE	DESCRIPTION	APPD.
2	2/26/03	Well design update, February, 2003	
3		Well design update, March 2003	
4	8/21/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	
6	08/08/04	Design change, August 2004	

REVISION

PROJECT USED:
ROCKSON ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

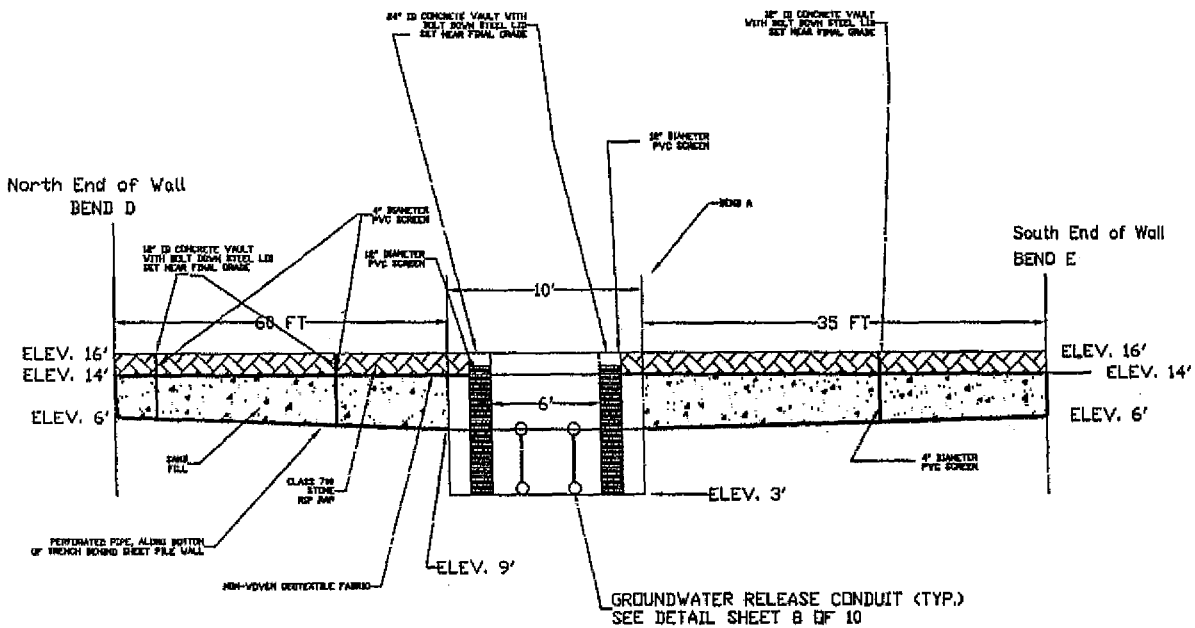
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

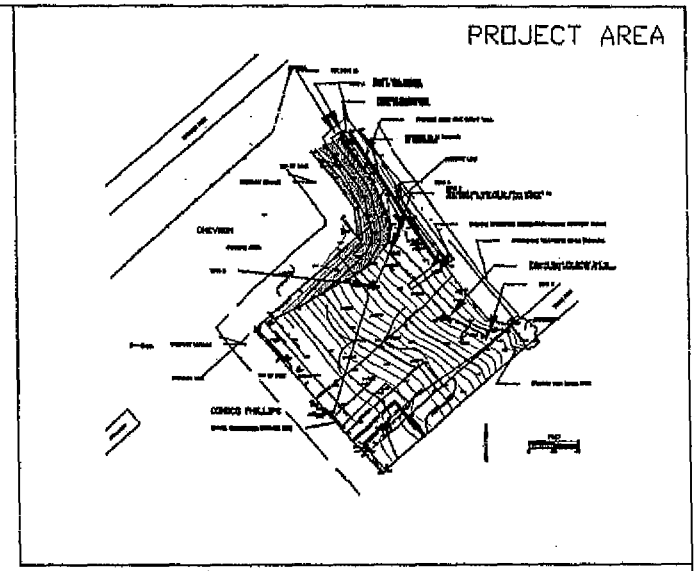
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31000 SW CHANDLER DR. SUITE 101
BEAVERTON, OREGON 97078 (503)684-0000

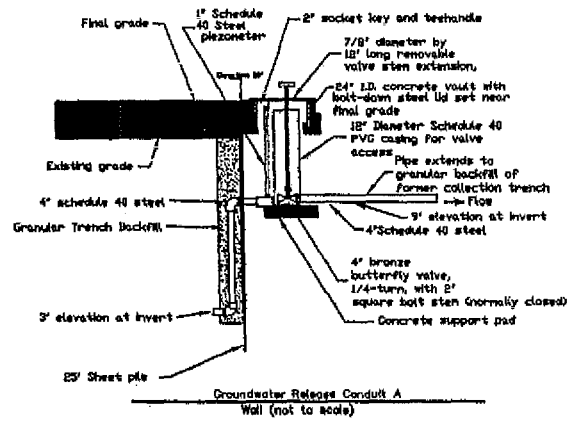
CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 7 of 10

COP0019396







Groundwater Release Conduit A
Wall (not to scale)

NO.	DATE	DESCRIPTION	APPD.
2	2/26/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	8/24/04	Design change, August 2004	

REVISION

MAP(S) USED:
REVISION MADE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

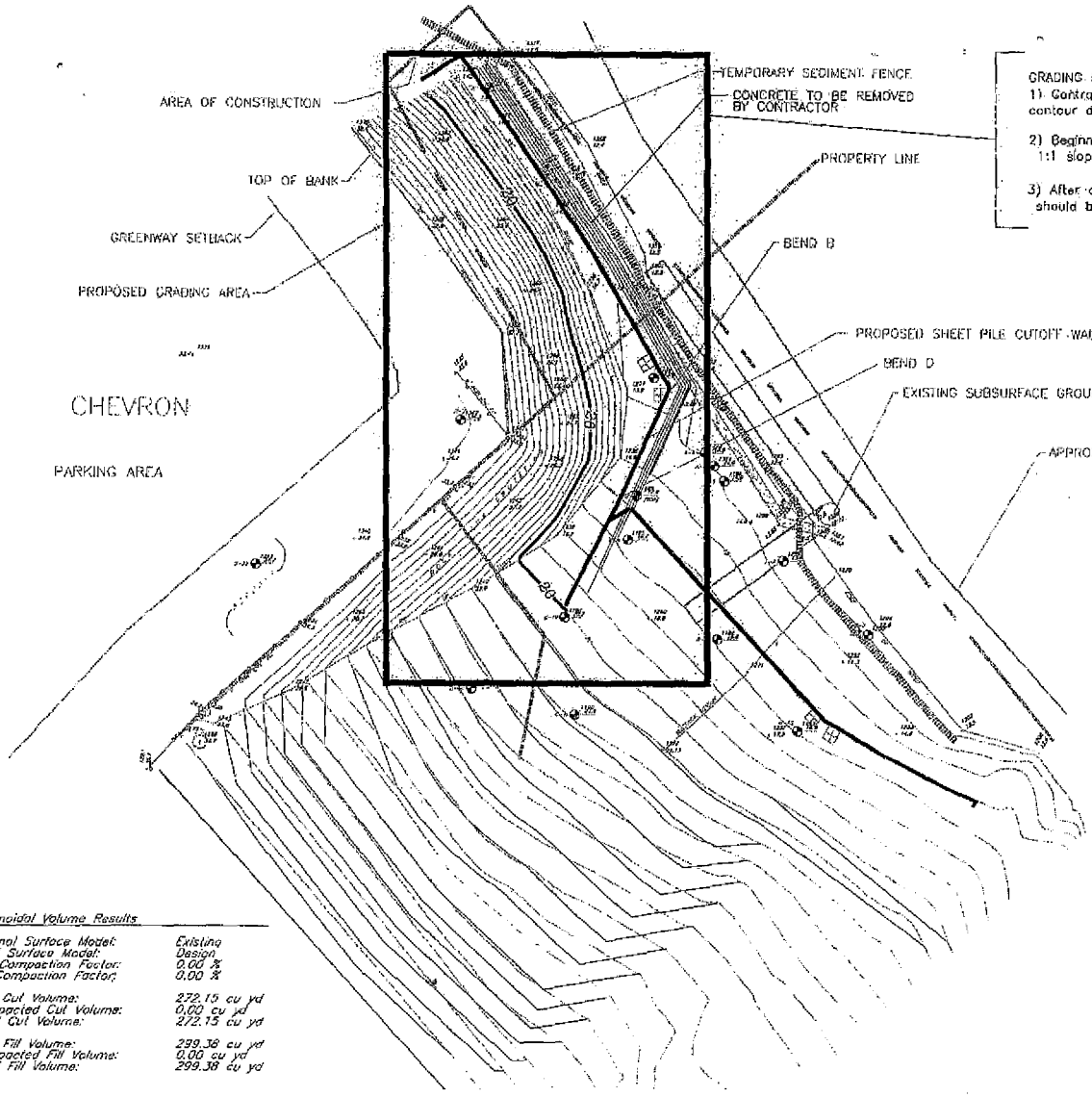
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
21040 SW Charbonneau Dr, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6000

CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 8 of 10

COP0019397



GRADING NOTES

1) Contractor to backfill behind sheetpile wall between Elev.=20.0 contour and top-of-wall (Elev.=20.0) at 0% slope with onsite riprap.

2) Beginning at top of sheetpile wall (Elev.=20.0), Contractor to construct 1:1 slope toward river to Elev.=14.0 using onsite riprap.

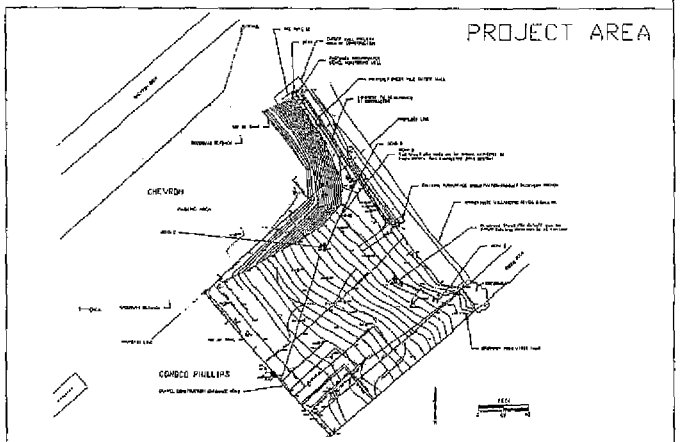
3) After construction activities are completed, no section of sheet pile wall should be above level of riprap.

LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

FEET

0 30 60



Prismoidal Volume Results

Original Surface Model:	*Existing*
Final Surface Model:	*Design*
Cut Compaction Factor:	*0.00 %*
Fill Compaction Factor:	*0.00 %*
Raw Cut Volume:	*272.15 cu yd*
Compacted Cut Volume:	*0.00 cu yd*
Total Cut Volume:	*272.15 cu yd*
Raw Fill Volume:	*299.38 cu yd*
Compacted Fill Volume:	*0.00 cu yd*
Total Fill Volume:	*299.38 cu yd*

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Well design update, February, 2003	
3		Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	
6	09/26/04	Design change, August 2004	
7	09/22/04	Grading Plan modification, September 2004	

REVISION

XREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

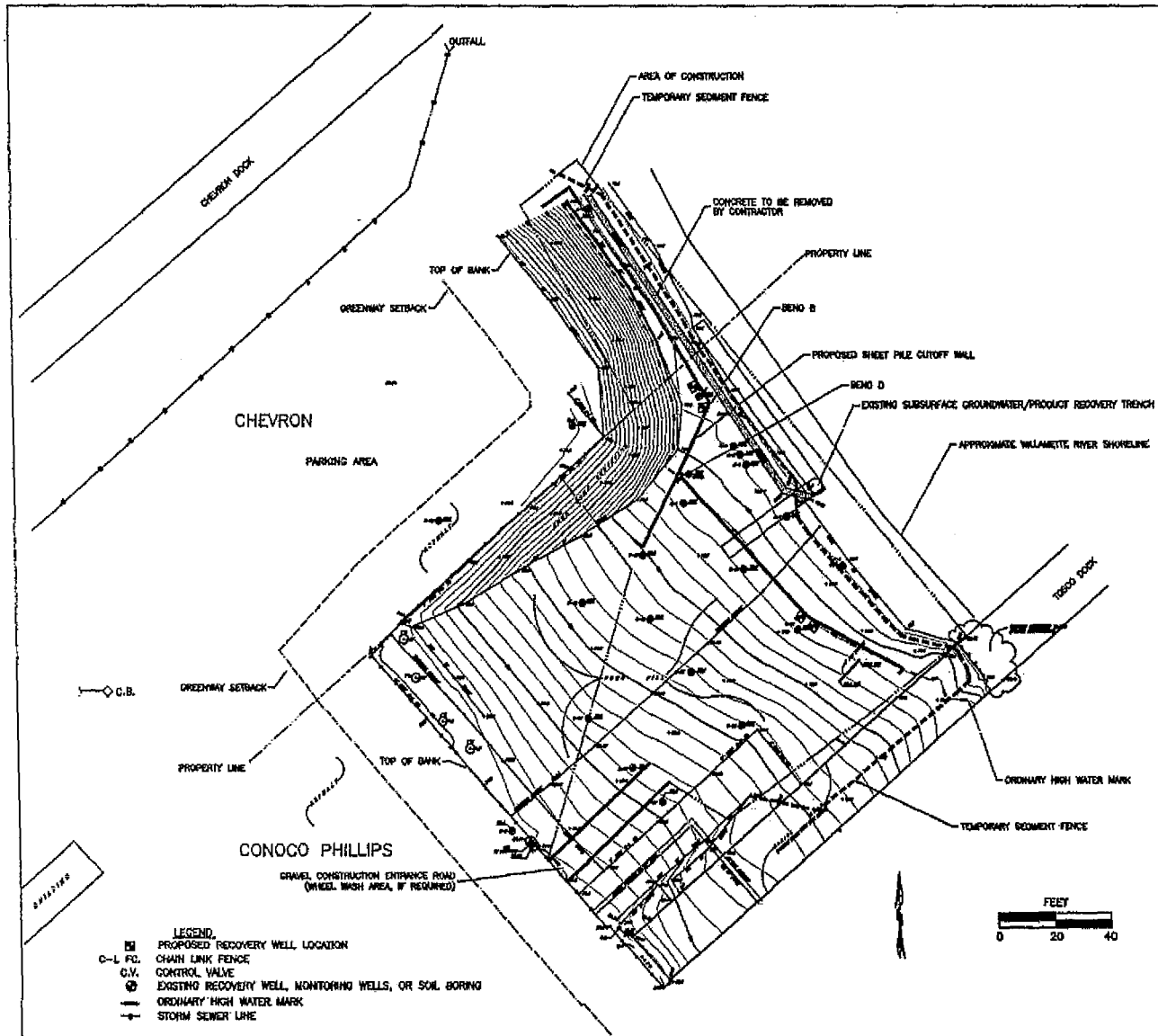
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR:
DATE APPD:
PROGRAM MGR:
CONST. MGR:

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31960 SW CHARBONNEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)691-6960

GRADING PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION: 2423
JOB NO.: 02-158
SHEET NO.: 9 of 10

COP001939



STANDARD NOTES FOR EROSION CONTROL PLANS

A. Approval of this erosion, sediment and pollution control plan (EPCP) does not constitute an approval of permanent road or drainage design (e.g., sizes and location of roads, pipes, restrictions, elevations, channels, location facilities, utilities, etc.)

B. The implementation of this EPCP and the construction, maintenance, replacement, and upgrading of these EPCP facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.

C. The inspection of the clearing limits shown on this plan shall be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the applicant/contractor for the duration of construction.

D. The EPCP facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to insure that sediment and sediment laden water do not enter the drainage system, roadways, or waste applicable water standards.

E. The EPCP facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these EPCP facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment-laden water do not leave the site.

F. The EPCP facilities shall be inspected daily by the applicant/contractor and maintained as necessary to ensure their continued functioning.

G. The EPCP facilities on inactive sites shall be inspected and maintained a minimum of once a month or within the 24 hours following a storm event.

H. Stabilized construction entrance shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to insure that all paved areas are kept clean for the duration of the project.

STANDARD NOTES FOR SEDIMENT FENCES

1. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to the post, or wrapped 2 inch x 2 inch posts and attach as shown on detail sheet 1-10.

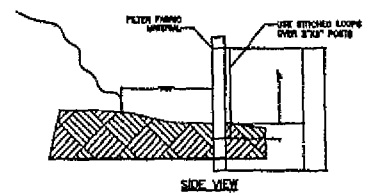
2. The filter fabric fence shall be installed to follow the contours where feasible. The fence posts shall be spaced a maximum of 8 feet apart and shall be driven securely into the ground a minimum of 24 inches.

3. The filter fabric shall have a minimum vertical height of 2 inches. All concrete material from filter fabric fence installation, shall be installed and compacted, along the entire disturbed area.

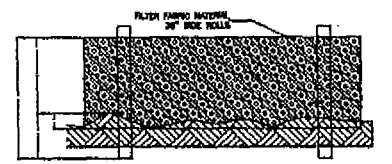
4. Standard or heavy duty filter fabric fence shall have transportation attached loops for 2 inch x 2 inch post installation. Attached loops shall be installed on the spent side of the shaped area.

5. Filter fabric fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently protected and stabilized.

6. Filter fabric fences shall be inspected by applicant/contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.



SIDE VIEW



SIDE VIEW

TEMPORARY SEDIMENT FENCE DETAIL

NO.	DATE	DESCRIPTION	APPR.
2	8/23/93	Well design update, February, 2003	
3		Well design update, March 2003	
4	8/22/93	Well design change, August 2003	
5	10/23/93	Well design change, October 2003	
6	09/26/94	Design change, August 2004	

REVISION

PROFILE USED: ____
ROTATION AREA: ____
CONSTRUCTED BY: ____
PROJECT COMPLETED: ____
MAP CORRECTED BY: ____ CHECKED BY: ____
FINAL MAP DATA

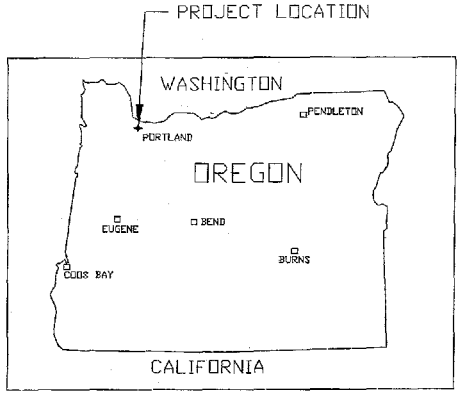
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN NO.:
DATE APPR.:
PROGRAM NO.:
CONST. NO.:

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
[illegible]
WILSONVILLE, OREGON 97070 [illegible]

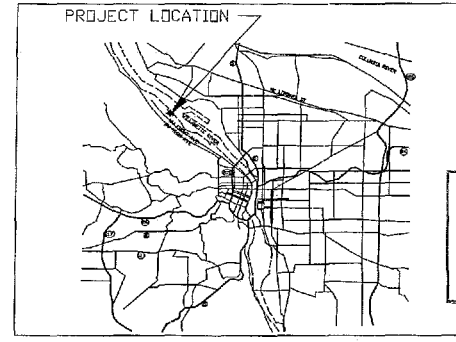
EROSION CONTROL PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

L/A SECTION: 2423
JOB NO.: 02-158
SHEET NO.: 10-10

COP0019399



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

City of Portland
APPROVED
DEC 2 8 2004
Permit Number

INDEX OF DRAWINGS

DRAWING	SHEET
TITLE SHEET	1
PROJECT NOTES	2
PROJECT LOCATION MAP	3
EXISTING SITE FEATURES	4
SITE PLAN	5
SHEET PILE CROSS-SECTON ALONG ALIGNMENT OF CUTOFF WALL	6
CUTOFF WALL COLLECTION TRENCH DETAILS	7
CUTOFF WALL COLLECTION TRENCH DETAILS	8
GRADING PLAN	9
EROSION CONTROL PLAN	10

CAUTION NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY IN ADVANCE BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

CONSTRUCTION DRAWINGS FOR

CHEVRON AND CONOCO PHILLIPS WILLBRIDGE TERMINAL GROUNDWATER CUTOFF WALL

PORTLAND, OREGON

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Wall design update, February 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	

REVISION

KEEP(S) USED: _____
ROTATION ANGLE: _____
CONSTRUCTED BY: _____
PROJECT COMPLETED: _____
MAP CORRECTED BY: _____ CHECKED BY: _____
FINAL MAP DATA

DESIGNED BY: BJB	DATE APPD.
DRAWN BY: CCA	PROGRAM MGR.
CHECKED BY:	CONST. MGR.
DESIGN MGR.	

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
21900 SW CHAMBERLAIN DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-1800

TITLE SHEET
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

1/4 SECTION: 2423
JOB NO.: 02-299
SHEET NO.: 1 OF 10

COP0019400

GENERAL PROJECT NOTES

1) Contractor shall notify Bureau of Environmental Services at (503) 823-7931 two (2) business days prior to commencement of work.

2) All construction shall conform to City of Portland standard construction specifications, as revised in 1998. Contractor and/or subcontractor shall have a minimum of one set of approved plans and City of Portland standard construction specifications on the job site at all times during construction.

3) Office of Planning and Development Review, Approvals, and Permits required for privately maintained structures constructed. All work approved under OPDR permits shall be privately owned and maintained.

4) Attention Excavators: Oregon law requires you to follow rules adopted by Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of those rules from the Center by calling (503)232-1987. If you have any questions about the rules, you may contact the Center. You must notify the Center at least two (2) business days, but not more than ten (10) business days, before commencing an excavation. Call 503-246-6699.

5) Slope stability evaluation to be completed prior to any disturbance of existing slope on Chevron property

6) Excavated trench spoil material shall be disposed of at a proper landfill, or applicant shall obtain a fill permit from the Office of Planning and Development Review before being disposed of on-site. A copy of the grading permit and plan should also be provided to the Bureau of Environmental Services for construction inspection.

7) Site erosion plan to be approved and controls in place prior to construction. All work under this permit will require site erosion control in compliance with all provisions of the City Title 10.

ADDITIONAL PROJECT NOTES

SHEET PILE WALL

1) Sheet Piling to be Hoesch H-1700 Steel Sheet Piling or equivalent, as approved by Engineer and Client.

2) Sheet Piling joints to include waterstop seals. Waterstop seals shall be ADEKA ULTRA SEAL A-50 or equivalent as approved by Engineer and Client.

3) Sheet Piling and waterstop seals to be installed consistent with manufacturers' recommendations.

COLLECTION TRENCH

1) Trench sand backfill shall be medium to coarse sand, moderately graded. The sand shall be free of silt, clay, loam, friable or soluble materials, or organic matter, conforming to the following gradation (or other as approved by Engineer and Client):

Sieve Size	Percent Passing
No. 4	100
No. 10	10 to 100
No. 40	0 to 10
No. 200	0

2) Geotextile Fabric separating sand and rip rap shall be non-woven fabric that complies with the following properties (unless otherwise approved by Engineer and Client):

Test	Method	Value
Grab Tensile Strength (N)	ASTM D4632	1155
Burst Strength (KPa)	ASTM D3786 Mod.	3000
Puncture Strength (N)	ASTM D4833 or ASTM D3787 Mod.	490
Apparent Opening Size (uM)	ASTM D4751	212
Ultraviolet Stability	ASTM D4355 @500 hrs	70% Strength retained

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Well design update, February 2003	
3		Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
4	10/23/03	Well design change, October 2003	

REVISION

KEY(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

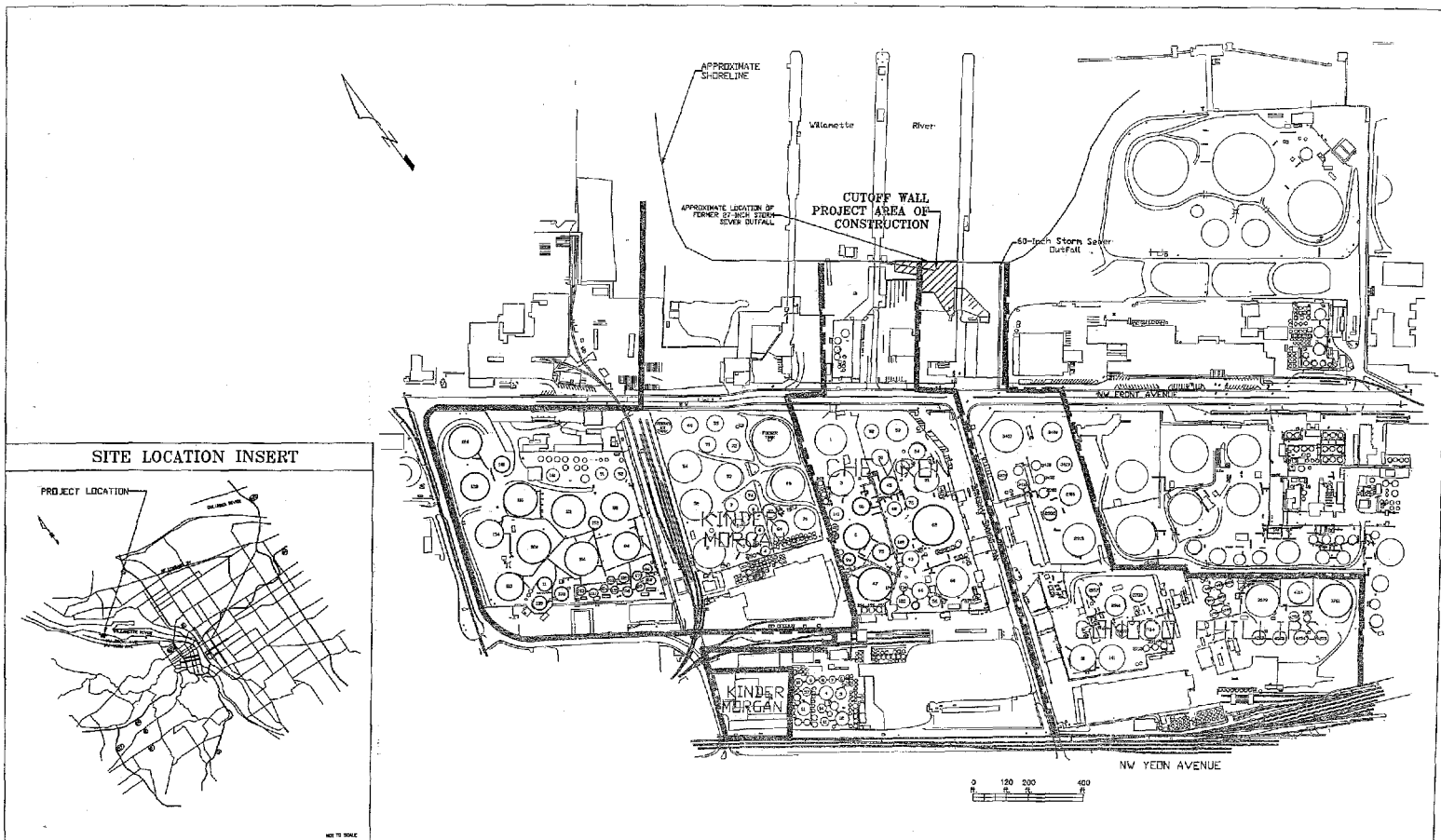
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
21000 SW CHAMPIONSHIP DR, SUITE 101
MCMINNVILLE, OREGON 97128 (503)434-8900

PROJECT NOTES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

1/4 SECTION 2423
JOB NO. 02-299
SHEET NO. 2 of 10

COP0019401



NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Well design update, February, 2003	
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4	8/22/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	

REVISION

PREFIX(S) USED:
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DRAWN BY: CCA
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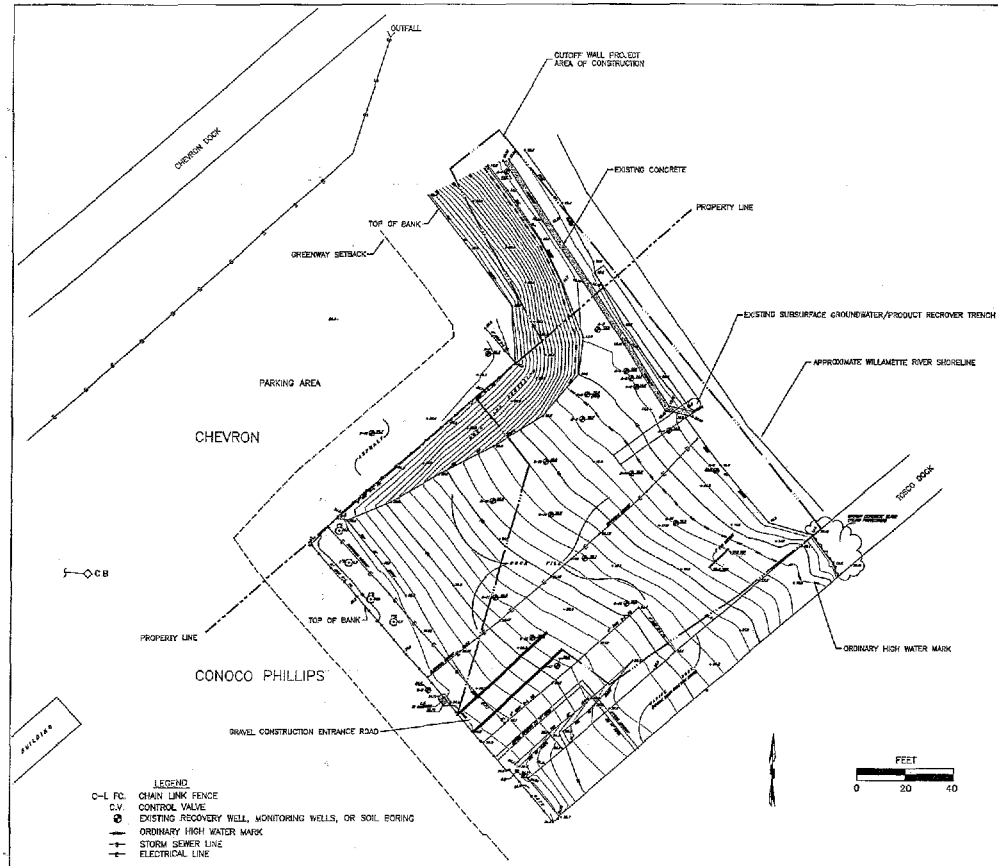
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31050 SW CHARBONNEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6860

PROJECT LOCATION MAP
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

T/4 SECTION: 2423
JOB NO.: 02-155
SHEET NO.: 3 of 10

COP0019402



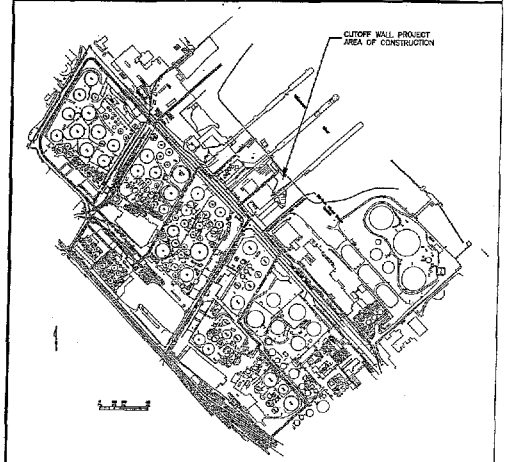
LEGEND

C-L FC. CHAIN LINK FENCE
C.V. CONTROL VALVE
EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
ORDINARY HIGH WATER MARK
STORM SEWER LINE
ELECTRICAL LINE

NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.84
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.

SITE LOCATION INSERT



NO.	DATE	DESCRIPTION	APP'D
2	8/25/03	Well design update, February, 2003	
3		Well design update, March, 2003	
4	8/28/03	Well design change, August 2003	
5	09/22/03	Well design change, October 2003	
6	6/26/04	Design change, August 2004	

REVISION

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN REF.
BASE APP'D.
HORIZ. REF.
CONST. REF.

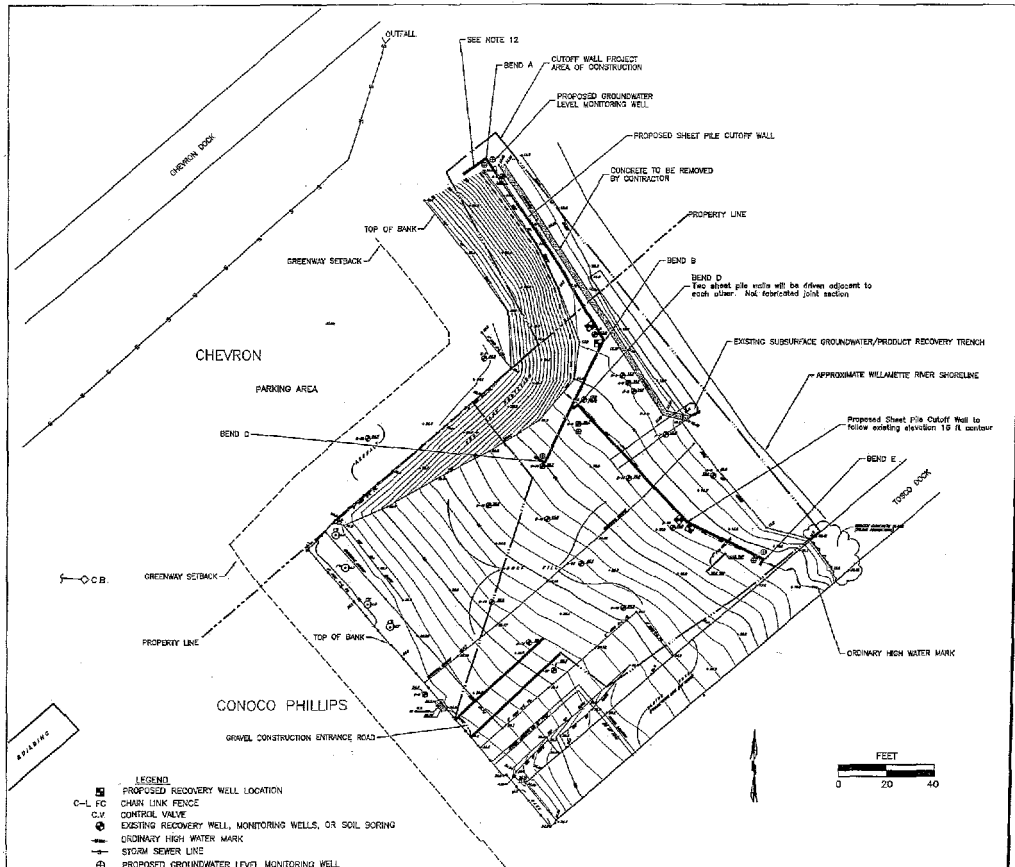
DATUM USED
ROTATION ANGLE
CONSTRUCTED BY
PROJECT COMPLETED
MAP COMPILED BY
CHECKED BY
FINAL MAP DATA

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
2040 SW CHAMPIONEAU DR. SUITE 101
WILSONVILLE, OREGON 97070 (503)454-4902

EXISTING SITE FEATURES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doone
PLAN VIEW

LA'S POSITION: 5429
JOB NO.: 02-158
SHEET NO.: 4 OF 10

COP0019403



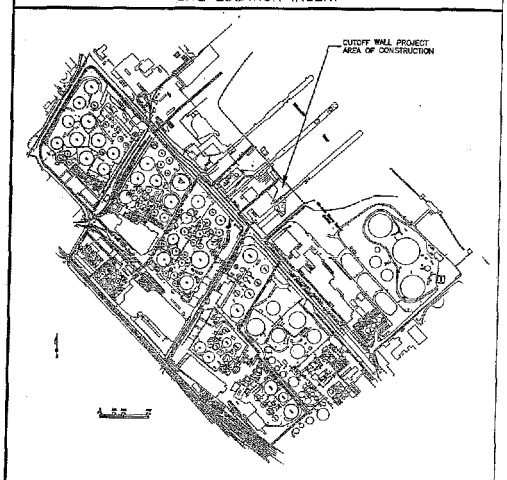
LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE
- PROPOSED GROUNDWATER LEVEL MONITORING WELL

NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.64
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.
12. SLOPE STABILITY EVALUATION TO BE COMPLETED PRIOR TO ANY DISTURBANCE OF EXISTING SLOPE ON CHEVRON PROPERTY

SITE LOCATION INSERT



NO.	DATE	DESCRIPTION	APPR.
2	8/25/03	Wall design update, February, 2003	
3		Wall design update, March, 2003	
4	8/25/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	8/26/04	Design change, August 2004	

REVISION

XREFS USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP COMPLETED BY: CHECKED BY:
FINAL MAP DATA

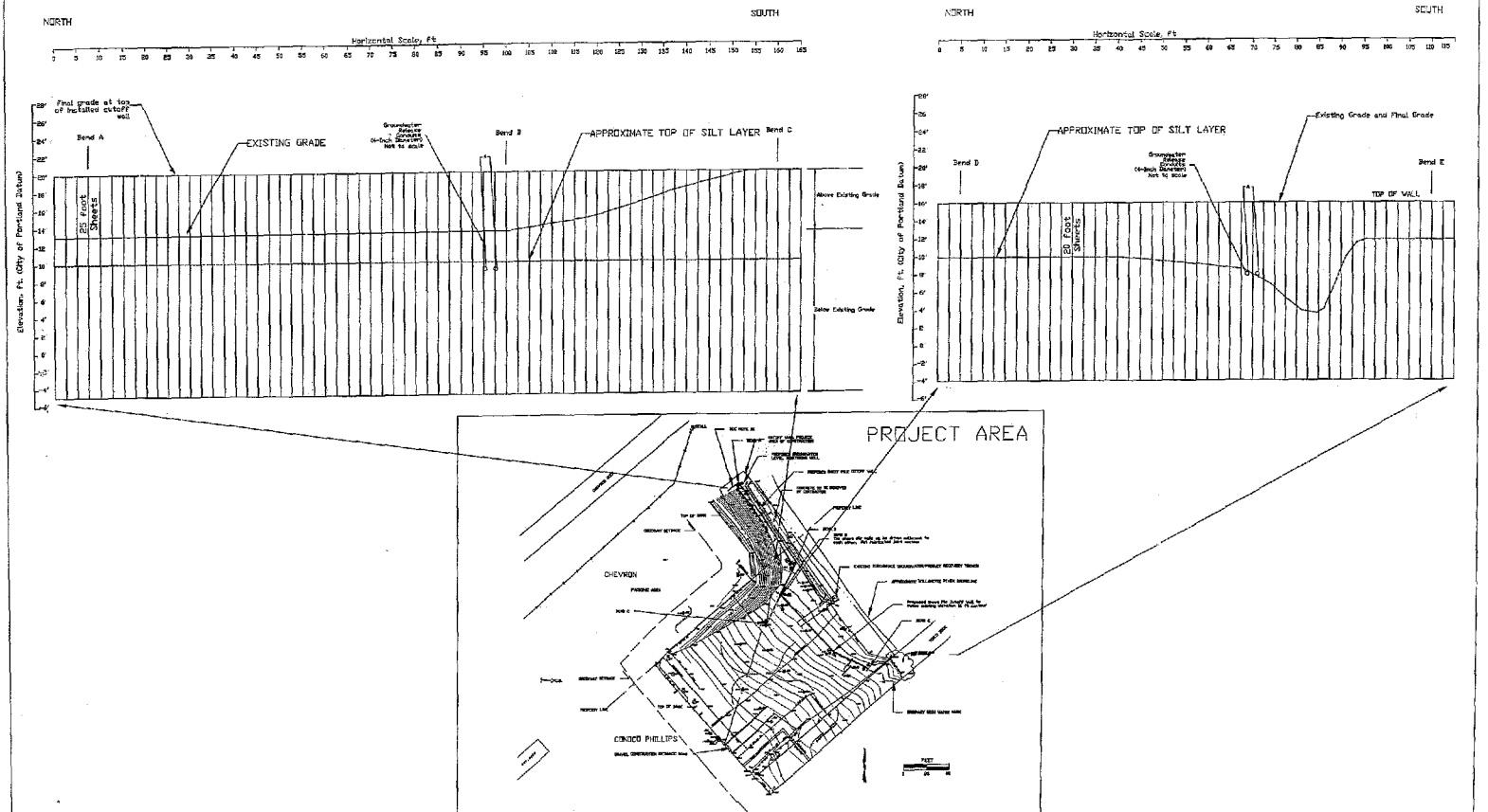
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN REQ.
DATE APPR.
PROGRAM REQ.
CONST. REQ.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
3200 SW CHARBONNEAU DR, SUITE 100
WILSONVILLE, OREGON 97070 (503)694-0960

SITE PLAN
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 5 of 10

COP0019404



NO.	DATE	DESCRIPTION	APPR.
2	2/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	8/26/04	Wall design change, August 2004	

REVISION

XREF(S) USED: ____
ROTATION ANGLE: ____
CONSTRUCTED BY: ____
PROJECT COMPLETED: ____
MAP CORRECTED BY: ____ CHECKED BY: ____
FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPR.
PROGRAM MGR.
CONST. MGR.

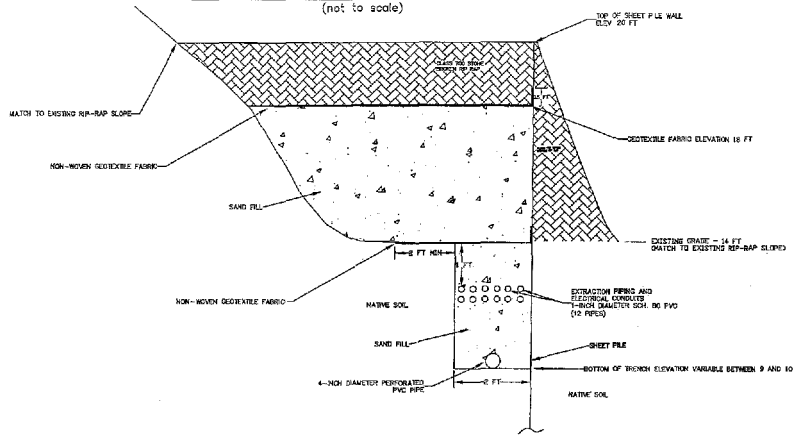
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31680 SW CHAPMAN ROAD ST. SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6060

SHEET PILE CROSS SECTION
ALONG ALIGNMENT OF CUTOFF WALL
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane

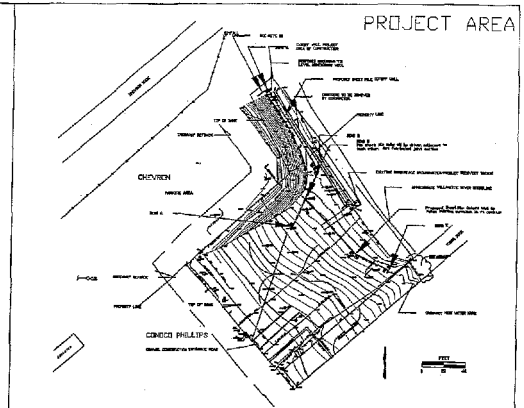
1/4 SECTION: 2423
JOB NO.: 02-158
SHEET NO.: 6 of 10

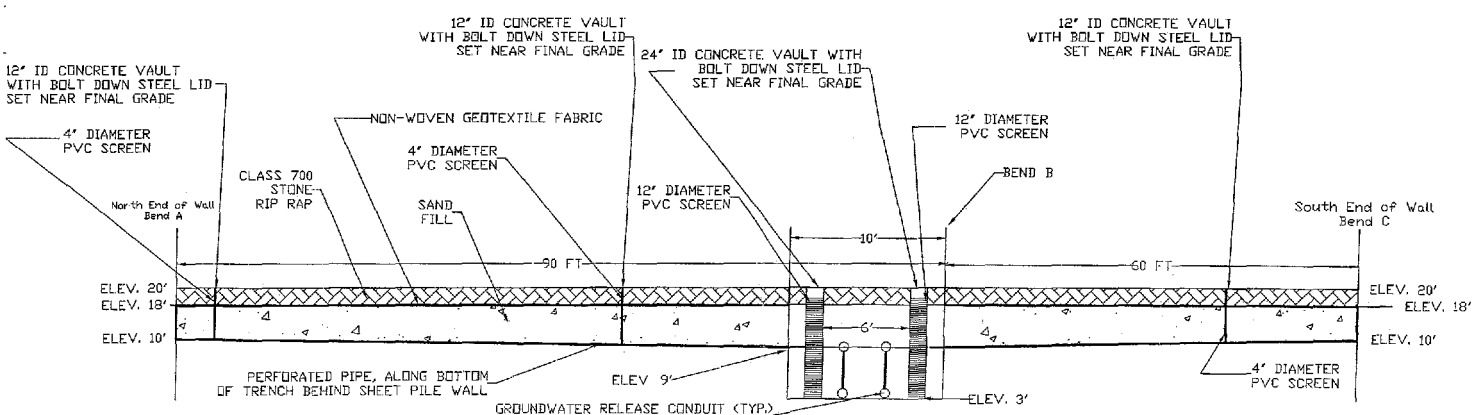
COP0019405

TYPICAL TRENCH CROSS-SECTION DETAIL – NORTH OF BEND B
(not to scale)



PROJECT AREA





NO.	DATE	DESCRIPTION	APPD.
2	3/25/03	Wall design update, February 2003	
3		Wall design update, March 2003	
4	5/22/03	Wall design change, August 2003	
5	10/27/03	Wall design change, October 2003	
6	08/28/04	Design change, August 2004	

REVISION

MRP(S) USED	
ROTATION ANGLES	
CONSTRUCTED BY	
PROJECT COMPLETED	
MAP CONSTRUCTED BY	CHECKED BY
FINAL MAP DATA	

DESIGNED BY	BJB
DRAWN BY	OCA
CHECKED BY	
DESIGN MGR.	
DATE APPD.	
PROGRAM MGR.	
CONST. MGR.	

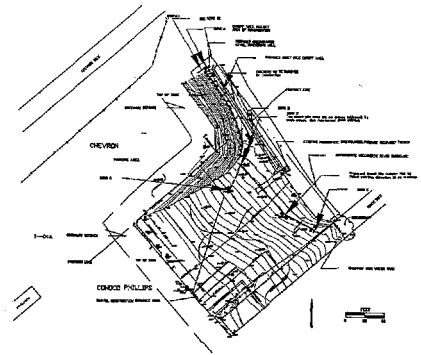
RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
31949 SW Orangeau Grv. Suite 101
Wilsonville, Oregon 97070 (503)694-6050

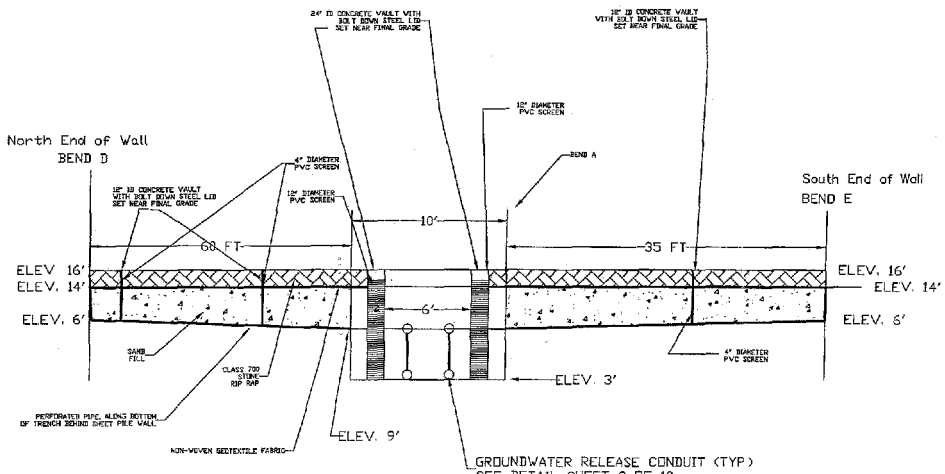
CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

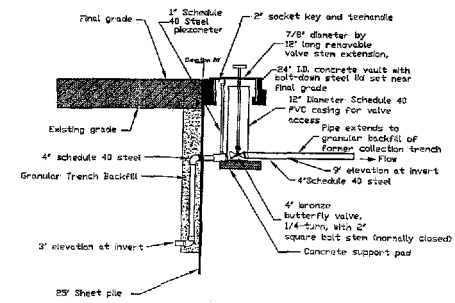
T/A SECTION 2423
JOB NO. 02-158
SHEET NO. 7 of 10

COP0019406

PROJECT AREA







Groundwater Release Conduit A
Wall (not to scale)

NO.	DATE	DESCRIPTION	APPD.
2	2/15/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	8/28/04	Design change, August 2004	

REVISION

PREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

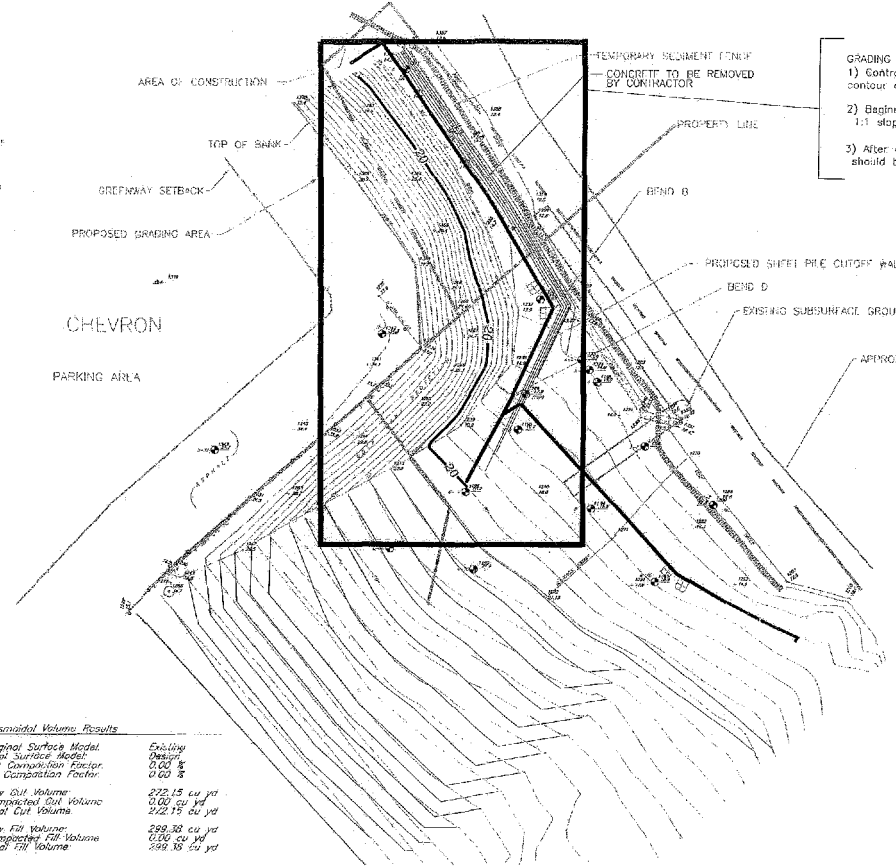
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31580 SW CHANDONNEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6650

CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

1/4 SECTION: 2423
JOB NO.: 02-159
SHEET NO.: 8 of 10

COP0019407



GRADING NOTES

1) Contractor to backfill behind sheetpile wall between Elev=20.0 contour and top-of-wall (Elev=20.0) at 0% slope with onsite riprap

2) Beginning at top of sheetpile wall (Elev=20.0), Contractor to construct 1:1 slope toward river to Elev=14.0 using onsite riprap.

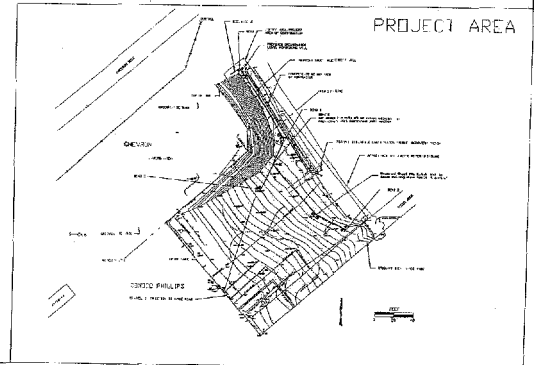
3) After construction activities are completed no section of sheet pile wall should be above level of riprap

LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC CHAIN LINK FENCE
- C.V CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

FEET

0 30 60



Prismoidal Volume Results

Original Surface Model:	*Existing*
Final Surface Model:	*Design*
Cut Compaction Factor:	*0.00 %*
Fill Compaction Factor:	*0.00 %*
Raw Cut Volume:	*272.15 cu yd*
Compacted Cut Volume:	*0.00 cu yd*
Total Cut Volume:	*272.15 cu yd*
Raw Fill Volume:	*299.38 cu yd*
Compacted Fill Volume:	*0.00 cu yd*
Total Fill Volume:	*299.38 cu yd*

NO.	DATE	DESCRIPTION	APPR.
2	2/25/03	Well design update, February, 2003	
3	"	Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	
6	04/26/04	Design change, August 2004	
7	03/07/04	Leading Plan Modification, September 2004	

REVISION

PROJECT ISSUE:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

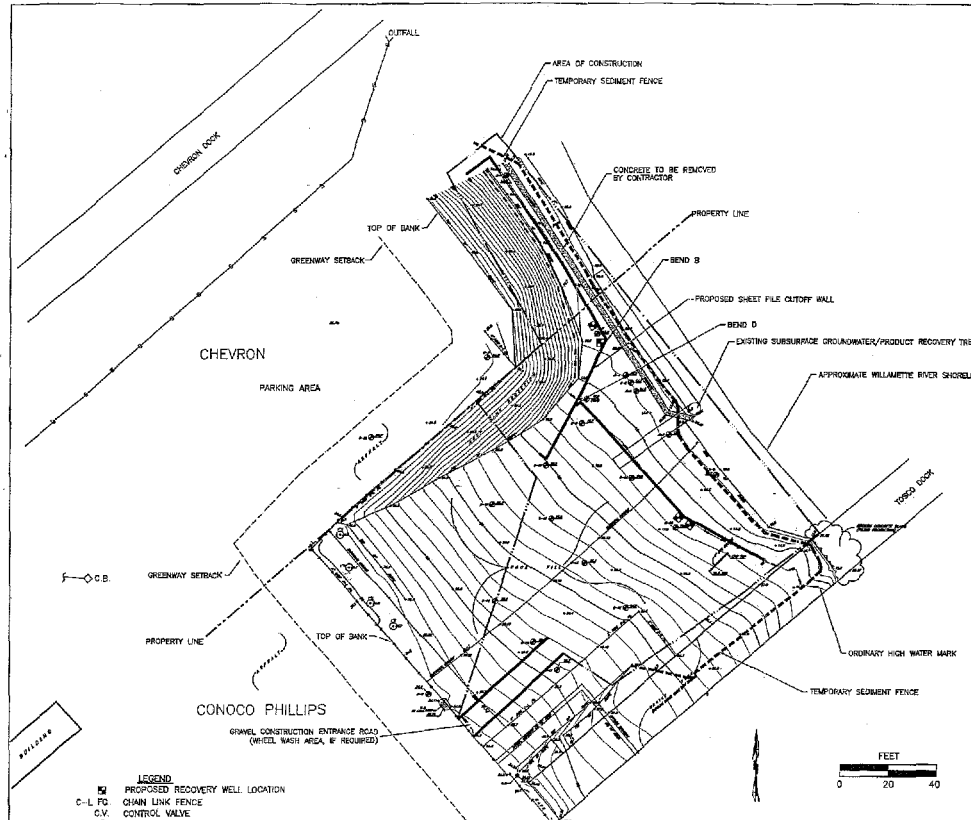
DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPR.
DRAWING NO.
CONST. MGR.

RSV ENGINEERING, INC
Engineers • Land Surveyors • Environmental Scientists
31800 SW DeFrancis Ave SUITE 100
WILSONVILLE, OREGON 97070 (503)694-6950

GRADING PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION: 2423
JOB NO.: 02-158
SHEET NO.:

COP0019408



LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

STANDARD NOTES FOR EROSION CONTROL PLANS

A. Approval of this erosion, sediment and pollution control plan (ESPCP) does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

B. The implementation of this ESPCP and the construction, maintenance, replacement, and upgrading of these ESPCP facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.

C. The boundaries of the clearing limits shown on this plan shall be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the applicant/contractor for the duration of construction.

D. The ESPCP facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to ensure that sediment and sediment laden water do not enter the drainage system, roadways, or violate applicable water standards.

E. The ESPCP facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESPCP facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment-laden water do not leave the site.

F. The ESPCP facilities shall be inspected daily by the applicant/contractor and maintained as necessary to ensure their continued functioning.

G. The ESPCP facilities on inactive sites shall be inspected and maintained a minimum of once a month or within the 24 hours following a storm event.

H. Additional construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to insure that all paved areas are kept clean for the duration of the project.

STANDARD NOTES FOR SEDIMENT FENCES

1. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. Where joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to the post, or a minimum 2 1/2 3 inch wrap and fasten twice around the post.

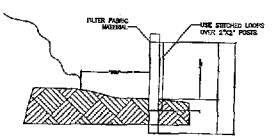
2. The filter fabric fence shall be installed to follow the contours where feasible. The fence posts shall be spaced a maximum of 10 feet apart and driven securely into the ground a minimum of 16 inches.

3. The filter fabric shall have a minimum vertical burial of 8 inches. As excavated material from filter fabric fence installation, shall be backfilled and compacted, along the entire disturbed area.

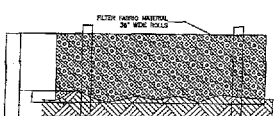
4. Standard or heavy duty filter fabric fence shall have reinforcement provided every 7 feet with a 2 inch post. Installation, Stretched fence shall be installed on the uphill side of the staked area.

5. Filter fabric fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently protected and stabilized.

6. Filter fabric fences shall be inspected by applicant/contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.



SIDE VIEW



SIDE VIEW

TEMPORARY SEDIMENT FENCE DETAIL

NO.	DATE	DESCRIPTION	APPD.
8	2/25/03	Wall design update, February, 2003	
7		Wall design update, March 2003	
6	8/22/03	Wall design change, August 2003	
5	10/23/12	Wall design change, October 2003	
4	08/26/14	Design change, August 2004	

REVISION

DESIGNED BY	DATE APPR.
BJB	
DRAWN BY	PROGRAM NO#
CCA	
CHECKED BY	CONST. NO#
DESIGN NO#	

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
2780 SW CHAMBERLAIN DR, SUITE 102
WILSONVILLE, OREGON 97070 (503)694-2060

EROSION CONTROL PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE, FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

EA SECTION	2423
JOB NO.	02-139
SHEET NO.	
	1 OF 1

COP0019409

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

December 9, 2004

Mr. Gerald O'Regan
Chevron Products Company
6001 Bollinger Canyon Road
Building K, Room 2216
San Ramon, CA 94583-2324

Mr. Martin Cramer
Conoco Phillips
P.O. Box 76
Portland, OR 97207

Re: DEQ Conditional Approval of Chevron Willbridge and Conoco Phillips Source Control Measure

Dear Mr O'Regan and Mr Cramer:

DEQ has reviewed the August 13, 2004, document, "Proposal for Source Control Measure" for the Chevron Willbridge Distribution Center and Conoco Philips Terminal, prepared by SAIC. DEQ is pleased to provide approval of this document and the implementation of the source control measures proposed in this document, on the condition that the attached comments are addressed and incorporated into a revised document for submittal to DEQ. The proposed source control measures include the installation of sheet pile cut-off wall and recovery system along the river bank on the Chevron Willbridge and Conoco Phillips facilities to control the migration of separate-phase and dissolved-phase petroleum hydrocarbon contamination in groundwater into the Willamette River. This source control measure will be performed as an interim action under the DEQ Consent Order WMCSR-NWR-94-06.

DEQ has provided the opportunity for EPA, Natural Resource Trustees, and the Tribes review and comment on the "Proposal for Source Control Measure" document. Comments received from NOAA and the Tribes are incorporated into the attached comment letter. No comments were received from EPA.

Please feel free to call me at 503-229-5532 or Jill Kiernan, the DEQ Project Manager at 503-229-6900 if you have any questions regarding the comments or DEQ's approval of the source control measure.

Sincerely,

Terry Hosaka
Manager, Northwest Region
Cleanup and Emergency Response

cc w/attachment:

Jill Kiernan, DEQ
Anna Coates, DEQ
Paul Seidel, DEQ
Jim Anderson, DEQ
Lynne Perry, DOJ
Cyril Young, DSL
Gerry Koschal, Red Hills Environmental
Kevin Schleh, SAIC
Kelly Kline, Delta Environmental
Chip Humphrey, EPA
Eric Blischke, EPA
Helen Hillman, NOAA
Nancy Munn, NOAA
Jean Lee, Environmental International
David Ashton, Port of Portland
Dawn Sanders, BES
Charles Lambert, ChevronTexaco Corp.

COMMENTS
PROPOSAL FOR SOURCE CONTROL MEASURE
CHEVRON WILLBRIDGE & CONOCO PHILLIPS FACILITIES

1. Please provide additional information on plans for future operation or abandonment of the existing Holbrook Slough trench recovery system after construction of the sheet pile wall and new recovery system. If it is to be inactivated, provide details on how the system will be decommissioned. The decommissioning of the inactive system should include removal of the any accumulated SPH, trench structures, and impacted soils surrounding the trench.

2. A monitoring plan with the objective of evaluating performance of the sheet pile wall and recovery system should be developed and submitted, either as an attachment to this Proposal for Source Control Measure or as a separate deliverable. The monitoring plan should include the proposed length of the monitoring program; proposed monitoring locations, frequency, and parameters; sample collection techniques; analytical methods; QA/QC procedures; documentation and reporting; management of investigation-derived waste; and data analyses for evaluating the performance of the system.

3. Provide information on the capacity of and the anticipated discharge rates from the recovery trench and capacities of the Chevron and ConocoPhilips wastewater treatment systems. Briefly describe where and how the extracted water will be treated and where the treated water will be discharged. Indicate what contingency measures will be taken, if any, if groundwater flow exceeds the capacity of the recovery system.

4. Figure 5. The legend indicating test pit locations for the two sampling events needs to be corrected. The TP/1 samples were collected in June 2002 and the TP-1 samples collected in August 2002. Also, the designation of the test pits using TP/1 and TP-1 does not provide much differentiation between the two sampling events and is confusing. Renaming of the test pits with more differentiation would be useful.

5. Please clarify vertical datum used on the drawings. Indicate what the "approximate shoreline" on the maps represents.

6. Section 1.1. Please provide information on the general volume and direction of groundwater flow in the vicinity of the proposed cut-off wall.

COP0019412

ConocoPhillips

5528 NW Doane Avenue
Portland, OR 97210

December 21, 2004

Multnomah County Clerk
P. O. Box 5007
Portland, OR

Dear Deed Recorder;

In response to the requirements of the well identification program issued by the state Water Resources Department, ConocoPhillips is submitting the following notorized well ownership information form and deed recording fee for Multnomah County.

There are 10 wells covered with this $66.00 check on deed recording number 9708826. The well identification numbers are as follows:

L54940
L54941
L50007
L50008
L50009
L50010
L51434
L51438
L51436
L51435

If you have any questions please call me at (503) 248-1517.

Sincerely,

Martin Cramer
Site Manager

Enclosures

ConocoPhillips

5528 NW Doane Avenue
Portland, OR 97210

December 21, 2004

Multnomah County Clerk
P. O. Box 5007
Portland, OR

Dear Deed Recorder;

In response to the requirements of the well identification program issued by the state Water Resources Department, ConocoPhillips is submitting the following notorized well ownership information form and deed recording fee for Multnomah County.

There are 10 wells covered with this $56.00 check on deed recording number 9708826. The well identification numbers are as follows:

L41476
L32063
L36856
L36857
L36855
L36858
L45859
L45860
L45859
L45860

If you have any questions please call me at (503) 248-1517.

Sincerely,

Martin Cramer
Site Manager

Enclosures

2005-174

PERMIT FOR INTERIM REMEDIAL ACTION WORK AND AGREEMENT FOR EASEMENT 33272-LI

This Permit and Agreement ("Permit") is entered into this 13th day of July, 2005, by and between the State of Oregon, by and through its Department of State Lands (State), the Port of Portland (Port), Chevron U.S.A. Inc. (Chevron) and ConocoPhillips Company (ConocoPhillips (all collectively "the Parties").

RECITALS

A. Chevron and ConocoPhillips (together "Permitees") desire to: (i) implement their "Proposal for Source Control Measures for the Chevron Willbridge Distribution Center, 5531 NW Doane Avenue, Portland, Oregon, and the ConocoPhillips Terminal, 5528 NW Doane Avenue, Portland, Oregon" by SAIC (dated August 13, 2004) (the Proposal") involving the construction and subsequent operation, maintenance, and eventual closure and decommissioning of a sheet pile cut-off wall and recovery system as an interim remedial action measure; (ii) install, periodically sample, maintain, and eventually close and decommission ground water monitoring wells down-gradient from the cut-off wall; and, (iii) decommission the existing Holbrook Slough Trench Recovery System (including, but not limited to, the removal of any accumulated separate phase hydrocarbon within the trench, the trench structures, and impacted soils surrounding the trench), all under the oversight of the Oregon Department of Environmental Quality (DEQ) (collectively, the "Work"). The Work is expected to begin in July 2005.

B. All or part of the Work will occur on submersible land adjacent to property leased by the Port to the Permitees. Ownership of the submersible land described in Attachment A (the Property) on which the wall will be located is uncertain (this matter is referred to herein as the "Ownership Issue"), and is unlikely to be determined in time to facilitate the access and land use needed by Permitees to accomplish the Work.

C. The Parties recognize the importance of the Work and do not want the Work delayed pending resolution of the Ownership Issue.

D. The Parties are entering into this Permit solely to facilitate access to and use of the Property prior to resolution of the Ownership Issue. By entering into this Permit, the Parties are not making any warranty or representation as to ownership of the Property, and do not assert or warrant title to those lands.

COP0019415

AGREEMENT

The State and the Port grant Permitees a permit to conduct work on the Property on the following terms:

1. INCORPORATION OF RECITALS

Except as noted above, the foregoing Recitals are incorporated into this Permit as additional promises, representations and warranties of the Parties as if set forth fully herein.

2. ACCESS

The State and the Port will not oppose or object to Permitees', their agents, employees, consultants, and contractors, access to or use of the Property described in Attachment A, which is incorporated herein by reference, to conduct the Work. Permitees will be permitted access to and use of the Property as of the effective date of this Permit.

The description of the Property provided is drawn from an assessor's map and/or other data, but neither the State nor the Port make any representation regarding its accuracy or reliability. Neither the State nor the Port will provide a survey or pay any costs of a survey to determine boundaries. If Permitees elect not to have a survey performed and a discrepancy or boundary overlap later becomes evident, the State and the Port, at their discretion, may provide a corrected description of the Property and amend this Permit as necessary.

3. SCOPE OF AUTHORIZED WORK

All Work shall be performed in accordance with the Proposal, Order on Consent DEQ No. WMCSR-NWR-94-06 (the "Order"), and all work plans, designs, schedules, and other deliverables approved by DEQ that may pertain to the Work.

4. TERM

This Permit shall be valid for the duration of the Work, unless earlier amended or terminated by the State, the Port or Permitees, as provided herein.

5. NOTICE, SAMPLE RESULTS AND DELIVERABLES

Permitees shall notify the State and the Port not less than five (5) working days before initiating Work on the Property. Permitees shall provide the State and the Port with copies of all work plans and other documents describing the nature and location of the Work submitted to and approved by DEQ (collectively, the "Work Plans"). Permitees shall also provide the State and the Port with copies of all legally required reports generated by the Work ("Reports").

6. COMPLIANCE WITH LAWS

Permitees shall comply with all federal, state, and local laws and rules applicable to the Work. This Permit is solely for access to and use of the Property for the Work. It does not give Permitees an interest in the Property. It neither gives Permitees permission to use the Property in a manner in violation of land use requirements, if any, applicable to the Work,

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nor constitutes regulatory or other approval of the Work or any related activities. It is Permitees' sole responsibility to determine and comply with any applicable requirements and to secure any necessary authorizations and approvals for the Work.

Permitees shall use the Property only in a manner, and for such purposes, as assure fair and nondiscriminatory treatment of all persons without respect to race, creed, color, religion, handicap, disability, age, gender or national origin.

7. PROPER DISPOSAL

Permitees shall comply with all federal, state, and local laws and rules applicable to the generation, storage or disposal of any waste generated by the Work. No waste generated by the Work shall be stored, discharged, or otherwise disposed of on the Property or on property owned by the State or the Port, except that wastes generated as a result of the Work may be temporarily stored for up to ninety (90) days on the adjacent property owned by the Port and leased to the Permitees.

8. PREVENTION OF DAMAGE AND INJURY

Permitees shall carry out all activities on the Property with due regard for public safety, the prevention of waste, and the restoration and conservation of said Property for future use; shall make all reasonable efforts to prevent and avoid interference with existing navigational and recreational activities and scenic values; shall maintain the areas of the Property affected by the Work in a safe condition during the term of this Permit; shall take all reasonable steps to avoid damage to fish and fish habitat, wildlife and wildlife habitat, and water quality; shall take all reasonable steps to minimize erosion; and shall substantially restore the Property to its original condition except to the extent otherwise required by the Work.

9. STRUCTURES AND EQUIPMENT

Except as otherwise required or directed by DEQ, any structures placed upon or tools, equipment, or other Property taken or placed upon the Property in conjunction with the Work shall be removed by Permitees at Permitees's expense upon the earlier of termination of this Permit under Sections 19a or 19c, or completion of the Work.

10. CONSTRUCTION

Construction in navigable waters shall conform to all standards and specifications set by the U.S. Army Corps of Engineers, the U.S. Coast Guard and Multnomah County, applicable to the Work.

11. RESERVATIONS/EXISTING RIGHTS

The interest of Permitees under this Permit shall at all times be subject to existing rights to use the Property and to the exercise of any new rights to use the Property; provided the new right does not unreasonably interfere with the Work for which access and use is granted under this Permit. Permitees are responsible for ensuring that their activities under this Permit are allowed by and do not interfere with any then existing right, including without limitation any lease, right-of-way, easement or other use authorization.

12. ACCESS TO PROPERTY AND RECORDS

The State and the Port shall have access to the Property at all reasonable times for the purpose of ensuring compliance with the terms and conditions of this Permit. The State and the Port shall also have the right, during normal business hours, to examine pertinent records of Permitees, including without limitation, the Work Plans and Reports for the purpose of ensuring compliance with this Permit.

Permitees acknowledge that the public may be determined to have an interest in any navigable waters on the Property. In the event of such a determination, Permitees shall maintain public access to the navigable waters during the term of this Permit except as otherwise required by state or federal laws or rules. Permitees may, however, restrict public use of Permitee-owned structures authorized under this Permit. Permitees may also request that DSL seek to close or restrict public use of all or a portion of the Property. The State and the Port reserve the right to require Permitees to post or use markings or floats to delineate work areas as necessary or appropriate to protect public safety or navigation during the Work, consistent with applicable state and federal requirements.

13. INDEMNIFICATION

Permitees shall defend, indemnify, and hold harmless the State of Oregon and the Port and their commissions, agencies, officers, employees, consultants, contractors and agents from any and all claims, demands, actions, suits, damages, costs, penalties, fines or expenses (including reasonable consultant and attorney fees, in an administrative proceeding, at trial or on appeal) (collectively "claims") of any person arising from or attributable, in whole or in part, to the performance of the Work, including without limitation claims arising from any act or omission of Permitees, their agents, employees, consultants, contractors, agents, or any other person acting on behalf of or at the direction of Permitees. This indemnification shall not affect the liability, if any, of Permitees, the State or the Port with respect to any condition existing on the Property as of the effective date of this Permit, except to the extent such conditions are exacerbated by the Work.

14. BOND

The State and the Port reserve the right to require Permitees to furnish to the State and the Port a surety bond or an equivalent cash deposit or certificate of deposit that names the State and the Port as co-owner to ensure that Permitees will perform in accordance with all terms and conditions of this Permit.

15. INSURANCE

Permitees shall keep in effect during the term of this Permit (a) comprehensive general liability coverage for all Work performed on the Property of not less than $1,000,000 per occurrence and $2,000,000 in aggregate for bodily injury, property damage, and contractual liability for the indemnity provided herein; (b) worker's compensation insurance as required by law; and (c) professional liability insurance without a pollution exclusion provision and with a limit of not less than $1,000,000 per claim and $2,000,000 in aggregate (or both professional liability insurance and contractor's pollution liability insurance each with limits of not less than $1,000,000 per claim and $2,000,000 in aggregate). The liability coverages

COP0019418

shall include the State of Oregon, the Oregon State Land Board, the Department of State Lands, the Port and their officers and employees as additional insureds with respect to Permitees' Work under this Permit. Insurance coverages required by this Permit shall be obtained from insurers in good standing with the Oregon Insurance Commission. As evidence of the required insurance coverage, Permitees shall furnish certificate(s) of insurance to the State and the Port before issuance of this Permit. Permitees may satisfy all or part of the insurance requirements herein with an accord form certificate as proof acceptable to State and the Port that the required insurance is held by Permitees's agents, consultants or contractors conducting the Work.

16. EASEMENT

If at any time after the effective date of this Permit, the Ownership Issue is determined to the State's and the Port's satisfaction, and if that determination is that the State holds title to all or a portion of the Property, then the State shall grant to the Port and Permitees, for their own use and that of their agents and licensees, an easement over that area of the Property to the extent needed for the Work.

Any such easement will be issued under OAR Chapter 141 Division 122 and include terms consistent with the terms of this Permit and the limitations on and obligations of Permitees as provided herein, including without limitation, the scope of the grantees' authorized activities and indemnification required of grantees. The grant of easement shall recite that grantees have investigated the condition of the easement area and are fully aware of the nature and extent of the contamination on or from the easement area to the extent such contamination has been revealed by sampling and analyses performed as of the date of the easement.

Any such easement will state that the Port and Permitees shall be jointly and severally liable to perform the grantees' obligations under the easement, that as between the Port and the Permitees, the Permitees will be primarily liable to perform the grantees' obligations, and that the Permitees shall defend, hold harmless and indemnify the Port from all liability and from all costs and expenses of any kind arising from the Work on the Property.

17. MODIFICATION

This Permit may not be changed or amended without the mutual written consent of the State, Permitees, and the Port, which consent shall not be unreasonably withheld. This Permit affords access and use only for the Work described in Section 3, above. Additional work required by subsequent agreements, orders, or by amendments to the Order or Proposal will require a new or amended Permit.

18. DEFAULT, NOTICE AND CURE BY PERMITEES

Permitees shall be in default if any of the following occurs and is not remedied within thirty (30) days (or such longer period agreed to in writing by the State and the Port) after the State or the Port has given written notice specifying the breach:

a) Failure of Permitees to comply with any term or condition of this Permit, including without limitation, failure of Permitees to use the designated area for the purposes authorized under the terms of this Permit, as described in sections 1 and 2, above.

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b) Maintenance by Permitees of a nuisance or dangerous condition on the Property, it being specifically agreed to by the Parties that, for purposes of this Permit and Agreement, neither the existing contamination (e.g. contamination existing as of the effective date of this Permit) on, in, or under the Property or migrating to the former Holbrook Slough area, nor the Work when performed in accordance with DEQ requirements and direction, shall be deemed to give rise to the creation or maintenance of a nuisance or dangerous condition.

c) Failure of Permitees to remove any lien or encumbrance placed upon the Property.

19. TERMINATION/REMEDIES

a) In the event of a default by Permitees, this Permit may be terminated at the option of the State and the Port by thirty (30) days' advance notice in writing to Permitees. In the event that Permitees fail to, or otherwise elect not to seek to, cure the default as provided in Section 18, Permitees shall have thirty (30) days after notice of termination (or such longer period agreed to in writing by State and Port) to remove all structures and equipment and other property from the Property as provided in Section 9.

b) This Permit may be terminated unilaterally by the State or the Port if the Parties agree that the ownership issues have been sufficiently resolved such that (1) the State is not the appropriate party to grant access for the Work, or (2) upon grant of an easement by the State as provided in Section 16.

c) This Permit may also be terminated by mutual written consent of the Parties.

20. NOTICE

Any notice required to be sent under this Permit to Permitees by the State or the Port shall be sent by certified mail and shall be deemed to be delivered after the certified letter is deposited in the United States mails addressed to Permitees at the address given by Permitees in the signature block of this Permit or other address provided to the State and the Port in a subsequent written notice of change of address.

21. ASSIGNMENT

This Permit shall not be assigned without the State's and the Port's prior written consent, which consent shall not be unreasonably witheld.

22. NO PARTNERSHIP

As between the State, the Port and Permitees, Permitees shall be solely responsible for the cost and expense of any activity conducted on the Property by or on behalf of Permitees under this Permit. Neither the State nor the Port is a partner nor a joint venturer with Permitees in connection with the Work nor shall it be considered a party to any contracts made by Permitees or their agents in carrying out the Work and shall have no obligation with respect to Permitees' debts, liabilities, or other obligations. Notwithstanding the foregoing, the Parties do not waive or release any rights, claims or causes of action they may have

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against one another or third parties with respect to the releases of contaminants that are the subject of the interim remedial action and Work being performed under this Permit.

23. JOINT AND SEVERAL LIABILITY

All obligations of Permitees under this Permit shall be joint and several as between Chevron and ConocoPhillips.

24. NON WAIVER

Waiver by any Party of strict performance of any term of this Permit on any occasion shall not be construed as a waiver nor prejudice either party's right to require strict performance of the same provision or any other provision in the future.

25. NON ADMISSION

The Parties recognize and agree that the State and the Port are issuing this Permit solely to facilitate Permitees' implementation of the Work and that in doing so neither the State nor the Port is making any representation as to ownership of the Property, neither shall it be construed as asserting or warranting title to the Property. The Parties further agree that this document shall not be admissible in any future federal or state judicial or administrative proceeding, or formal or informal liability allocation proceeding as evidence of ownership of the Property.

26. SURVIVAL OF COVENANTS

All remedies and continuing obligations of this Permit, including without limitation Permitees' indemnification obligation and the State's and the Port's access to records, shall survive termination of this Permit.

27. COUNTERPARTS

This Permit may be executed in counterparts, each of which shall be an original, and all of which shall together constitute but one and the same instrument. Each Party may sign separately on a signature page reflecting its execution of the Permit, and all such signature pages shall be appended to the original document. A photocopy of this Permit, once executed, shall be effective as an original, if an original is unavailable. Signatures transmitted by facsimile shall be effective to bind the parties.

28. EFFECTIVE DATE

This Permit shall be dated and effective upon execution by the State, which shall execute the Permit last.

29. ENTIRE AGREEMENT

This Permit together with its recitals, attachments and exhibits, all of which are incorporated herein by reference, constitutes the entire agreement between the Parties with respect to the subject matter hereof. No waiver, consent, modification, or change in terms of this Permit shall bind either party unless in writing. There are no understandings, agreements,

or representations, oral or written, not specified herein regarding the subject matter of this Permit. This Permit supersedes all prior or existing agreements between the Parties with respect to the Property and Work described herein, but shall have no effect on the lease agreements between the Port and each of the Permitees.

Permitees, by the signature below of their authorized representative, hereby acknowledge that Permitees have read this document, understand it and agree to be bound by its terms and conditions.

STATE:
The State of Oregon, acting by and through the
Department of State Lands
775 Summer St NE Suite 100
Salem, OR 97301-1279

Stephen Purchase
Authorized Signature

August 2, 2005
Date

Permitees:
Chevron U.S.A. Inc.
C/O Chevron Products Company
Gerald Henderson
5924 NW Front Avenue
Portland, OR 97210
Phone: 503-221-7714
Fax: 503-222-9766

G S Henderson / Terminal Manager
Signature/Title
(Note requirement below)

July 20, 2005
Date

Note: If Permitee is a corporation, partnership, limited liability company or other form of business entity, signer warrants that s/he has the authority to sign the permit on behalf of such entity by resolution of its Board of Directors or equivalent, or through delegation of authority to the signer.

STATE OF OREGON)
) ss
County of MULTNOMAH)

The foregoing instrument was acknowledged before me this 20TH day of JULY, 2005, by G S HENDERSON (name of officer or agent of corporation), the TERMINAL MANAGER (title of officer or agent) of CHEVRON PRODUCTS COMPANY (name of business entity), a PENNSYLVANIA (State or place of incorporation) CORPORATION (corporation, general partnership, limited liability company, etc.)on behalf of said CORPORATION (corporation, general partnership, limited liability company, etc.).

Carol Senter
Signature

OFFICIAL SEAL
CAROL SENTER
NOTARY PUBLIC - OREGON
COMMISSION NO. 370085
MY COMMISSION EXPIRES JUL 28, 2007

My commission expires July 28, 2007

COP0019422

Permitees:
ConocoPhillips Company
Attention: Marty Cramer
5528 NW Doane Ave
Portland, Oregon 97210
Phone: 503-248-1517
Fax: 503-248-1492

Area Mgr. RM&R

Signature/Title
(Note requirement below)

7/25/05

Date

Note: If Permitee is a corporation, partnership, limited liability company or other form of business entity, signer warrants that s/he has the authority to sign the permit on behalf of such entity by resolution of its Board of Directors or equivalent, or through delegation of authority to the signer.

STATE OF)
) ss
County of Maricopa)

The foregoing instrument was acknowledged before me this 25TH day of July, 2005 by Myron Smith (name of officer or agent of corporation), the Area Manager, RM+E (title of officer or agent) of ConocoPhillips (name of business entity), a Arizona (State or place of incorporation) ConocoPhillips RM+E (corporation, general partnership, limited liability company, etc.)on behalf of said ConocoPhillips RM+E (corporation, general partnership, limited liability company, etc.).

OLIVIA PEREZ
Notary Public - Arizona
Maricopa County
My Comm. Expires Sep 25, 2008

Signature
My commission expires 9/25/08

COP0019423

Permitees:
Port of Portland
121 NW Everett
Portland, OR

Bill Wyatt
Signature/Title
(Note requirement below)

7/25/05
Date

Note: If Permitee is a corporation, partnership, limited liability company or other form of business entity, signer warrants that s/he has the authority to sign the permit on behalf of such entity by resolution of its Board of Directors or equivalent, or through delegation of authority to the signer.

STATE OF)
) ss
County of Multnomah)

The foregoing instrument was acknowledged before me this 25 day of July, 2005, by Bill Wyatt (name of officer or agent of corporation), the Executive Director (title of officer or agent) of Port of Portland (name of business entity), a Oregon (State or place of incorporation) Port of Portland (corporation, general partnership, limited liability company, etc.)on behalf of said Port of Portland (corporation, general partnership, limited liabilit

OFFICAL SEAL
SHAWN WARREN
NOTARY PUBLIC - OREGON
COMMISSION NO. 377316
MY COMMISSION EXPIRES APRIL 17, 2008

Shawn Warren
Signature
My commission expires April 17, 2008

Approved as to legal sufficiency for the Port of Portland

7/19/05

David Ashton
Assistant General Counsel

COP0019424

ATTACHMENT A

33272-LI

All submerged or submersible lands along the Willamette River in Section 18, Township 1 North, Range 1 East, Willamette Meridian, Multnomah County, Oregon, more particularly described as follows:

Commencing at a brass cap witness corner which bears 618.33 feet from the most Northerly corner of the said Kittridge Donation Land Claim and the most Easterly corner of the Milton Doane Donation Land Claim No. 59;

thence continuing along the line between said Kittridge and Doane Donation Land Claims North 31°16'10" East a distance of 104.60 feet to a point on the Northeasterly right-of-way line of North Front Avenue;

thence along the Northeasterly right-of way line of north Front Avenue South 41°41'00" East a distance of 156.61 feet to the most Westerly corner of a deed from the Port of Portland to Flintkote Company recorded November 30, 1946 in Book 1124 Page 467;

thence leaving the Northeasterly right-of-way line of North Front Avenue along the Northerly line of said Book 1124 Page 467 and its Northerly extension North 48°57'25" East a distance of 339.53 feet to a point being the intersection of Tax Lot 1300, Tax Lot 900 and the Ordinary High Water along the West bank of the Willamette River as established by the Oregon Division of State Lands (Elevation 17.0 NGVD 29/47);

thence continuing along the Ordinary High Water line North 30°58'12" West a distance of 15.05 feet;

thence North 64°08'24" West a distance of 37.37 feet;

thence North 38°33'31" West a distance of 53.78 feet;

thence North 36°47'49" West a distance of 67.7 feet to a point being the intersection of the Ordinary High Water and the Northern edge of the dock currently owned and operated by the ConocoPhillips Terminal (ConocoPhillips Dock), being the Point of the Beginning:

thence North 36°47'49" West a distance of 21.20 feet;

thence North 59°37'29" West a distance of 59.03 feet;

thence North 40°40'58" West a distance of 37.54 feet;

thence North 13°53'47" East a distance of 41.07 feet;

thence North 18˚10'25" West a distance of 36.64 feet;

thence North 37˚40'51" West a distance of 45.69 feet;

thence North 49˚18'55" West a distance of 36.22 feet;

thence North 07˚09'44" East a distance of 12.96 feet;

thence North 35 29'18" West a distance of 15 feet to a point being the intersection of the Ordinary High Water and the Southern edge of the dock currently owned and operated by the Chevron Willbridge Light Products Distribution Center;

thence North 48˚57'25" a distance of 33.8 feet to a point defined by the Oregon Department of Environmental as the Upland Harbor Site Boundary along the Willamette River being an elevation of 10.925 feet (City of Portland Datum);

thence upstream in a Southeasterly direction along the Upland Harbor Boundary approximately 282.8 feet to the intersection of the Upland Harbor Boundary and the Northern edge of the ConocoPhillips Dock;

thence North 48˚57'25" a distance of 35.9 feet to the Point of the Beginning, containing 0.266 acres, more or less, referred to herein as the "Property".

J:\AttachmentAwestLAS\LI Temporary Use Permit\33272-LI.doc

Oregon
Theodore Kulongoski Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

July 27, 2007

Brian Pletcher, R.G.
Delta Environmental, Inc
7150 SW Hampton, Ste. 220
Tigard, Oregon 97223

Re: Approval of Sheet Pile Cut-off/Recovery System Performance Monitoring Plan, Willbridge Terminals

Dear Brian:

DEQ has completed its review of the Sheet Pile Cut-off/Recovery System Performance Monitoring Plan, Willbridge Terminals dated March 30, 2007. The workplan presents an adequate approach to the evaluation of the sheet pile wall and recovery system source control measures enacted at the Willbridge Terminals. Please consider the flowing comments and make the necessary changes prior to implementation of the workplan.

1. DEQ acknowledges the inclusion of 2-methylnapthelyne in the list of groundwater sampling analyses. This compound is a known component of diesel and has a relatively low screening level in the JSCS SLV Table 3.1. DEQ was unable to find any historic data in the semi-annual groundwater monitoring reports or anywhere else in the site file. Please be sure to incorporate this into the semi-annual list of analytes and JSCS screening for the site.

2. TPH-D and TPH-G should this be added to the list of analytes.

3 Groundwater elevation contour maps must prepare as part of the plan and submitted in the annual report. Representation of the water levels will assist in DEQ's interpretation of the data and the evaluation of the groundwater capture

4. Please provide an updated schedule for the field work associated with this workplan so that DQ can have adequate notice to provide field oversight.

Feel free to contact me at (503) 229-5563 or Romero.Mike@deq.state.or.us if you have any questions regarding this letter or the project in general.

Sincerely,

Michael Romero, Project Manager
NWR Cleanup Section

COP0019427

cc: Henning Larsen, Cleanup and Site Response
Mike Noll, Conoco Phillips
Gerard Koschal, Red Hills Environmental, Inc
Grant, Sprick, ARCADIS BBL
Olivia Skance, Chevron Environmental Management Company
ECSI File #1549

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
503-229-5696
TTY: 503-229-6993

AOC 0922

AGENCY CORRESP.

November 1, 2007

Site Manager
ConocoPhillips Company
5528 NW Doane Ave.
Portland, OR 97210-3608

RE: General 15A Industrial Wastewater NPDES Petroleum Hydrocarbon Cleanup Permit
File/Source # 106167

Dear Mr. Jones:

Thank you for your note regarding the sale of said facility and/or name change on your permit. I've enclosed the required application. Please complete and return to the Western Regional Office in Salem. You will note the legally authorized representative's signature is required before we will change the name of the permittee.

The fee for a Name Change is $100.00.

If you have any questions, please call Jennifer Claussen at the Salem regional office at (503) 378-5055.

Thank you very much.

Sincerely,

Rod Lemeni
Invoice Coordinator – DEQ Water Quality

Enclosure

c: Jennifer Claussen, DEQ Western Region - Salem

COP0019429

DEQ USE ONLY

Application #:
File #:
EPA #:
ACD Fee Paid:
DOC Conf:
Notes:

NAME CHANGE AND/OR PERMIT TRANSER FOR NPDES* OR WPCF** PERMIT

Oregon Department of Environmental Quality
*National Pollutant Discharge Elimination System
**Water Pollution Control Facilities

DEQ USE ONLY

Received:
Amount Received:
On-Site Surcharge:
Check #:
Deposit #:
☐ IND ☐ DOM ☐ OSS ☐ UIC
Notes:

A. ACTION TO BE PERFORMED

☐ Name Change / Effective or Scheduled Date:

☐ Transfer of Permit / Scheduled Date:

B. PREVIOUS INFORMATION

1. Previous Legal Name:
2. Previous Common Name:
3. DEQ Facility ID #:
   Permit #:
4. Facility Physical Address:
   City, State, Zip Code:

C. NEW INFORMATION

1. New Legal Name:
2. New Common Name:
3. Responsible Official:
   Mailing Address:
   Telephone #:
   City, State, Zip Code:
   Email:
4. Facility Contact:
   Facility Mailing Address:
   Telephone #:
   City, State, Zip Code:
   Email:
5. Invoice to:
   Billing Address:
   Telephone #:
   City, State, Zip Code:
   Email:
6. Will the name change or transfer of ownership result in a change in the character of pollutants being discharged or a new or increased discharge not addressed by current permit conditions? ☐ No ☐ Yes (attach explanation)

D. SIGNATURE REQUIRED FOR NAME CHANGE

I hereby authorize the above referenced name change.

Name of Legally Authorized Representative (Type or Print) — **Title**

Signature of Legally Authorized Representative — **Date**

E. SIGNATURES REQUIRED FOR TRANSFER OF PERMIT

PREVIOUS OWNER: I hereby acknowledge the pending transfer of the above referenced permit.

Name of Legally Authorized Representative (Type or Print) — **Title**

Signature of Legally Authorized Representative — **Date**

NEW OWNER:

I hereby apply for permission to transfer the above referenced permit and certify that I have acquired a property interest in the permitted activity. I agree to fully comply with all terms and conditions of the permit and the rules of the Environmental Quality Commission.

Name of Legally Authorized Representative (Type or Print) — **Title**

Signature of Legally Authorized Representative — **Date**

COP0019430

NAME CHANGE AND PERMIT TRANSFER INSTRUCTIONS

A. ACTION TO BE PERFORMED:

Check the appropriate box to indicate a name change and/or permit transfer.

- For a ***name change***, provide the effective or scheduled date of the name change. Please note that for name changes, the Department prefers to process your request after the name has been legally changed to avoid incorrectly modifying its files should the change not occur.
- To ***transfer a permit*** to a new owner, provide the date on which you want the transfer to occur. Transfer will not occur until the Department has received the appropriate signatures and fee and reviewed the transfer information. Approval of a transfer may take up to 30 days to process.

B. PREVIOUS INFORMATION:

1. Enter the previous legal name.
2. Enter the common name of this facility or operation if different than the legal name.
3. Enter the DEQ facility identification number (also known as the site or file number; this number may be found on the first page of your permit) and the permit number.
4. Enter the facility's physical address (physical location, not mailing address), including city, state, and zip code.

C. NEW INFORMATION:

1. Enter the new legal name. This name will appear on the permit and must be the **legal** Oregon name (i.e., Acme Products, Inc.) or the **legal** representative of the company if the company operates under an assumed business name (i.e., John Smith, dba Acme Products). The name must be a legal, active name registered with the Oregon Department of Commerce, Corporation Division (503) 378-4752 (http://www.filinginoregon.com), unless otherwise exempted by their regulations.
2. Enter the common name of this facility or operation if different than the legal name.
3. Enter the name, telephone number, and e-mail and mailing addresses of the Responsible Official. The Responsible Official is the person that receives official correspondence from DEQ, such as renewal notices or notices of noncompliance, and may be contacted if there are questions about this application.
4. Enter the name, telephone number, and e-mail and mailing addresses of the Facility Contact if different from the Responsible Official. The Facility Contact is the person located at the facility that has specific knowledge of the facility or operation under permit (e.g., the treatment plant operator), and may be contacted if there are specific questions about this application.
5. Enter invoicing information for billing purposes if different from new legal name (e.g., "Invoice To: Business Office").
6. Complete as indicated. Attach an explanation if changes are being made to the discharge regulated by the current permit.

D. SIGNATURE REQUIRED FOR NAME CHANGE:

The signature of a legally authorized representative must be obtained before the Department will change the name of a permittee.

E. SIGNATURES REQUIRED FOR PERMIT TRANSFER:

The signatures of legally authorized representatives from the previous owner and new owner must be obtained before the Department will transfer a permit. If the previous owner is not available, the Department will accept a bill of sale or other proof that the new owner has acquired a property interest in the permitted activity.

Definition of Legally Authorized Representative:
See 40 CFR 122.22 for more detail. Also, please also provide the information requested in brackets.

- **Corporation** — President, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million that is authorized in accordance to corporate procedure to sign such documents
- **Partnership** — General partner *[list of general partners, their addresses and telephone numbers]*
- **Sole Proprietorship** — Owner(s) *[each owner must sign the application]*
- **City, County, State, Federal, or other Public Facility** — Principal executive officer or ranking elected official
- **Limited Liability Company** — Member *[articles of organization]*
- **Trusts** — Acting trustee *[list of trustees, their addresses and telephone numbers]*

FEE AND APPLICATION SUBMITTAL:

The fee to perform a name change and/or transfer a permit depends on the type of permit. The fees are as follows:

- **$100** for a WPCF on-site sewage system permit ($60 filing fee + $40 on-site sewage system surcharge)
- **$67** for any other WPCF or NPDES permit

Send this form and fee to the appropriate DEQ regional office.
Make your check payable to the Department of Environmental Quality.

DEQ Northwest Region	DEQ Western Region		DEQ Eastern Region
	WPCF On-Site Sewage Permits:	All Other Permits:	
2020 SW 4th Ave., Suite 400 Portland, OR 97201-4987 (503) 229-5263 or 1-800-452-4011 inside Oregon	510 NW 4th, Room 76 Grants Pass, OR 97526 (541) 471-2850 or 1-800-452-4011 inside Oregon	750 Front St. NE, Suite 120 Salem, OR 97301-1039 (503) 378-8240 or 1-800-379-7677 inside Oregon	700 SE Emigrant, Suite 330 Pendleton, OR 97801 (541) 276-4063 or 1-800-452-4011 inside Oregon

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

RECEIVED
JUN 17 2006
BY:

June 15, 2006

Tim Browning, R.G.
Delta Environmental Consultants, Inc.
7150 SW Hampton, Suite 220
Tigard, OR 97223

0922
AGENCY CORR.

Re: DEQ Comments/Conditional Approval of Revised Source Control Evaluation
Willbridge Bulk Fuels Facilities

Dear Tim:

DEQ has reviewed the December 7, 2004, document, "Revised Source Control Evaluation, Willbridge Facility, Portland, Oregon", prepared by Delta Environmental Consultants, Inc. DEQ had delayed the review of this document in anticipation of the final release of the DEQ guidance document, "Portland Harbor Joint Source Control Strategy" (JSCS), in December 2005. DEQ finds that the Revised Source Control Evaluation for the Willbridge facility was generally consistent with the JSCS guidance, however, the following limitations of the report were identified: (1) Although the evaluation used conservative human health and ecological screening criteria that were available at that time, these criteria are not necessarily consistent with the current JSCS screening level values (SLVs). For many of the site contaminants of potential concern (COPCs) the JSCS SLVs are considerable lower than those criteria used in the report. (2) The report primarily addressed the groundwater to surface water pathway but did not adequately evaluate other applicable pathways including stormwater and riverbank soil erosion. Despite these limitations, DEQ approves the document on the condition that additional evaluations or measures are performed as described below.

Groundwater Pathway Evaluation

The groundwater pathway evaluation, using human health and ecological screening criteria that were available at that time (i.e. pre-JSCS screening level values), resulted in the identification of areas of concern at the site where separate-phase hydrocarbons (SPH) and dissolved-phase contaminants in groundwater are migrating to the river at unacceptable levels. The report also identified the need for additional source control measures to control the migration of these contaminants, including the construction of a subsurface sheet pile cut-off wall and recovery system along the waterfront at the Chevron Texaco and ConocoPhillips facilities, and continued evaluation of groundwater monitoring data. DEQ has re-evaluated site groundwater monitoring data against the JSCS SLVs (attached table) and noted additional areas of potential concern for migration of SPH and dissolved-phase contaminants to the river. Monitoring wells where concentrations of contaminants currently exceed either the human health or ecological JSCS SLVs for one or more of the following compounds, benzene, ethylbenzene, toluene, and xylene

(BTEX); polynuclear aromatic hydrocarbons (PAHs); methyltert-butyl ether (MTBE); and metals are identified below.

ConocoPhillips:	SPH: B-40 BTEX: B-35 MTBE: None PAHs: B-35, B-36, P-2, U-5, U-11, and U-12 Metals: B-35, B-36, P-1, P-2, U-5, U-10, U-11, and U-12
Chevron Texaco:	SPH: None BTEX: None MTBE: B-21 PAHs: B-7, B-9, B-10, B-20, B-21, and CR-1 Metals: B-7, B-9, B-10, B-20, B-21, and CR-1
Kinder Morgan:	SPH: None BTEX: None MTBE: None PAHs: MW-34, MW-36, and MW-37 Metals: MW-33, MW-34, MW-36, MW-37, and MW-40

Additional Measures/Evaluation Required: To complete the groundwater pathway source control evaluation, the following measures should be implemented.

1. **Sheet Pile Cut-Off/Recovery System Wall Performance Monitoring Program.** Most of the areas of concern at the ConocoPhilips and Chevron Texaco facilities will be addressed by the subsurface sheet pile cut-off wall and recovery system, which are planned for installation this summer. After installation of the cut-off wall, a performance monitoring program should be implemented to evaluate the effectiveness of the cut-off wall in preventing contaminant migration. A work plan (Sampling and Analysis Plan) for the performance monitoring should be submitted to DEQ for review and approval within 60 days of construction completion. mid November

2. **Modify Site Groundwater Monitoring Program.** Additional monitoring and evaluation of those areas of concern that will not be addressed by the cut-off wall should be performed. Areas not apparently addressed by the cut-off wall include the vicinity of wells P-1, U-5, and B-40 at the ConocoPhillips facility; the vicinity of wells CR-1 and B-10 at the Chevron Texaco facility; and the vicinity of wells MW-33, MW-34, MW-36, MW-37, and MW-40 at the Kinder Morgan facility. The current site semi-annual monitoring program should be modified to include the monitoring of all of these wells for SPH, BTEX, MTBE (Chevron Texaco only), PAHs, and total metals (arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc). A reasonable attempt should be made to achieve the lowest possible analytical method reporting limits to allow comparison to applicable JSCS SLVs. In addition, if seeps are observed along the

- Call Lisa methology

shoreline, they should be sampled and analyzed for all of the contaminants listed above. Monitoring results may indicate the need for additional source control measures to address the groundwater migration pathway. The Sampling and Analysis Plan (SAP) for the site-wide groundwater monitoring program should be modified to include this requirement. A revised SAP should be submitted to DEQ for review and approval. mid August 1

Stormwater Evaluation

Assessment of the storm water pathway, consistent with the JSCS guidance, is necessary to complete the Source Control Evaluation for the site. At a minimum, the storm water pathway evaluation should include the following steps:

1. Collect and document basic site information for all three facilities. Identify potential contaminant sources to site stormwater. Identify and describe the site's stormwater system (i.e. drainage basins, collection systems, lines, catch basin locations, discharge points, treatment methods, and permits). Identify and describe current stormwater controls (e.g. Stormwater Pollution Control Plans, Best Management Practices (BMPs), catch basin inspection and maintenance).

2. Identify sample analytes for catch basin solids sampling. Analytes should include the site contaminants of potential concern (BTEX, MTBE, PAHs, metals), ubiquitous Portland Harbor contaminants of interest (PCBs and phthalates), any other contaminant that were identified in the Portland Harbor sediment sampling data collected near outfalls at the site, and NPDES permit parameters.

3. Design and implement plan to sample catch basin solids. Guidance for sampling catch basin solids is provided in the JSCS, Attachment C of Appendix D.

4. Screen analytical data from catch basin solids sampling against JSCS SLVs. Results of this screening step will determine if additional stormwater assessment is necessary. If concentrations exceed the SLVs, additional measures will likely be necessary such as cleanout of catch basins and lines, implementing additional BMPs, and monitoring stormwater.

5. Implement additional evaluation/measures as necessary.

A work plan to evaluate the storm water pathway using the JSCS guidance should be developed and submitted to DEQ for review and approval.

Riverbank Soil Erosion Pathway Evaluation

Contaminants in erodable surface soil or in riverbanks pose a potential threat to aquatic receptors and river sediment. The evaluation of erosion of potentially contaminated riverbank soils at the site into the Willamette River was not specifically addressed in the December 2004 Revised

Source Control Evaluation for the Willbridge facility. Additional evaluation of this pathway, consistent with the JSCS guidance is required. The evaluation should include comparison of soil analytical data of the site COPCs to the JSCS SLVs. Additional riverbank soil data collection will likely be required to supplement existing soil data generated during the remedial investigation to complete this evaluation. A work plan to evaluate the riverbank soil erosion pathway should be developed and submitted to DEQ for review and approval.

Please feel free to call me at 503-229-6900 if you have any questions regarding the project.

Sincerely,

Jill Kiernan, P.E.
Senior Project Engineer

Enclosure

cc w/o encl: Anna Coates, DEQ/NWR
Paul Seidel, DEQ/NWR
Jim Anderson, DEQ/NWR Portland Harbor
Robert Truedinger, Kinder Morgan
Marty Cramer, ConocoPhillips Co.
Darin Rouse, Chevron Environmental Management
William Platt, Shell Oil Co.
Grant Sprick, BBL

DEQ-DC1

0922 - Portland, OR

Generator's Nonhazardous Waste Profile Sheet

Requested Disposal Facility _____ Profile Number

☐ Renewal for Profile Number _____ Waste Approval Expiration Date _____

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: ConocoPhillips
2. Site Address: 5528 NW Doane Ave.
3. City/ZIP: Portland 97210
4. State: Oregon
5. County: Multnomah
6. Contact Name/Title: Mike Noll
7. Email Address: michael.d.noll@contractor.conocophillips.com
8. Phone: 360-794-9523
9. FAX: 360-794-6578
10. NAICS Code: _____
11. Generator USEPA ID #: _____
12. State ID# (if applicable): _____

B. Customer Information ☐ same as above

P. O. Number: _____

1. Customer Name: Stratus Corporation
2. Billing Address: 39515 SW Hartley Road
3. City, State and ZIP: Gaston, OR 97119
4. Contact Name: Scott Flaherty
5. Contact Email: s.flaherty@stratuscorp.net
6. Phone: 503-985-79 FAX: 503-985-1953
7. Transporter Name: Stratus Corporation
8. Transporter ID # (if appl.): _____
9. Transporter Address: _____
10. City, State and ZIP: _____

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: soil cuttings, spent carbon State Waste Code(s): _____

b. Describe Process Generating Waste or Source of Contamination:

well installation soil cuttings and spent carbon and remediation system sump sediment - petroleum hydrocarbon remediation system at ConocoPhillips bulk distribution facility

c. Typical Color(s): _____

d. Strong Odor? ☐ Yes ☑ No Describe: _____

e. Physical State at 70°F: ☑ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other: _____

f. Layers? ☐ Single layer ☐ Multi- layer ☑ NA

g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: _____

h. Free Liquid Range (%): _____ to _____ ☑ NA(solid)

i. pH Range: ☐ ≤2 ☑ 2.1-12.4 ☐ ≥12.5 ☐ NA(solid) ☐ Actual: _____

j. Liquid Flash Point: ☐ < 140°F ☐ ≥ 140°F ☑ NA(solid) ☐ Actual: _____

k. Flammable Solid: ☐ Yes ☑ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☑ (See Attached)

Constituents *(Total Composition Must be ≥ 100%)*	Concentration %	Constituents *(Total Composition Must be ≥ 100%)*	Concentration %
1.		4.	
2.		5.	
3.		6.	

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ☑ Event ☐ Base/Ongoing (Check One)

b. Estimated Annual Quantity: 45 ☐ Tons ☐ Cubic Yards ☑ Drums ☐ Gallons ☐ Other (specify): _____

c. Shipping Frequency: one time Units per ☐ Month ☐ Quarter ☐ Year ☑ One Time ☐ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No

e. USDOT Shipping Description (if applicable): _____

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): _____

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WASTE MANAGEMENT

Generator's Nonhazardous Waste Profile Sheet

D. Regulatory Status (Please check appropriate responses)

1. Is this a USEPA (40 CFR Part 261)/State hazardous waste? If yes, contact your sales representative. ☐ Yes ☑ No
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   - ☐ Delisted Hazardous Waste
   - ☐ Excluded Wastes Under 40 CFR 261.4
   - ☐ Treated Hazardous Waste Debris
   - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☐ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☐ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☑ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☑ No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   a. If yes, is disposal regulated under TSCA? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated, medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☑ No

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the Contractor if applicable).
5. Check all that apply:
   - ☑ Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested:
     VOCs 8260B, TCLP Lead, TCLP Arsenic, TPH Gx, TPH Dx, PAHs # Pages: ~100
   - ☐ Only the analyses identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested).
     Attachment #: _____
   - ☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical).
     Indicate the number of attached pages: _____
   - ☐ I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.
   - ☐ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

Certification Signature: James F. Trotter **Title:** Site Manager

Company Name: Conoco Phillips Company **Name (Print):** James F. Trotter

Date: 2/15/08

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: _____

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- ☐ Shall not contain free liquid
- ☐ Shipment must be scheduled into disposal facility
- ☐ Approval Number must accompany each shipment
- ☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ **Date:** _____

State Authorization (if Required): _____ **Date:** _____

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From: Jessica Eckart
Sent: Friday, February 29, 2008 5:01 PM
To: Noll, Michael D(DXT Services)
Cc: William Edmund; Jessica Eckart
Subject: Sheen observation - 2/29/2008

Mike,
This email is a summary of the sheen observed at Outfall 22 located on the Willamette River and near the ConocoPhillips Portland terminal facility (5528 NW Doane Avenue, Portland, OR).

At 10:39 am, I received a call from Norman Swanson and he indicated to me that there was a significant sheen discharging from Outfall 22. I contacted Mike Noll at 11 am to report the observed sheen. According to Norman, the sheen was black but not migrating past the hard booms located in the river. CCS was contacted for emergency response to mitigate sheen migration. New booms and absorbent pads were set near the discharge end of Outfall 22 to capture any discharging sheen. While CCS was cleaning up the sheen, Jessica Eckart contacted the City of Portland Bureau of Environmental Services duty officer and left a separate message with Mr. Tim Dean. At 1:30 pm, Jessica Eckart contacted the Oregon Spill Response (incident number 2008-0596). I received a call from Coast Guard Petty Officer Jones, and at 2:15 pm the National Response Center was contacted (Incident number 863752). I also received a call from Mr. Mike Osweather with the Washington State Emergency Management Division. He requested notification next time a sheen is observed.

Secor collected samples of the sheen in unpreserved amber containers from the discharge end of outfall 212, manhole 77, manhole 76, manhole 80, and from product beneath the rip rap near outfall 22. These samples will be shipped to TDI B&B Laboratories on Monday, March 3, 2008. Secor will be inspecting the outfall over the weekend and CCS is on standby.

If you have any questions, please contact me at any time.

Regards,
Jessica

Jessica Eckart, R.G.
Geologist
SECOR International, now Stantec
Ph: 503-691-2030
Fx: 503-692-7074
jessica.eckart@stantec.com
stantec.com

-----Original Message-----
From: Jessica Eckart
Sent: Saturday, March 01, 2008 4:53 PM
To: Noll, Michael D(DXT Services)
Cc: William Edmund
Subject: Outfall 22 Area, Portland Terminal (RM&R 0922)

Mike,
I just want you to know that sheen has not been observed today (Saturday). I talked to Norman twice and he said that it did not look like sheen was discharging or had discharged from Outfall 22.

Jessica

From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Sunday, March 23, 2008 3:12 PM
To: Lauck, Terry S.; Lundeen, Bill J.; Smith, Myron - Environmental:; Sprick, Grant; Darin Rouse; Brian Pletcher
Cc: Collins, Bill:; Lyons, Thomas:; Kober, Steven; Jessica Eckart; William Edmund
Subject: FW: Outfall 22 Sheen Observation - March 21, 2008 (RM&R 0922)

All - Attached are photos from the March 21 sheen observed at Outfall #22.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
Noll Environmental, Inc.
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: Jessica Eckart [mailto:jeckart@secor.com]
Sent: Friday, March 21, 2008 3:44 PM
To: Noll, Michael D(DXT Services)
Subject: RE: Outfall 22 Sheen Observation - March 21, 2008

Mike,
I have attached today's photo for you. I am going to post some photos to the ftp site. Let me know if the ftp site works. I opened it earlier and it worked at this end. Photo 0726 is a photo of the initial observation and photo 0745 shows pads placed in the water to capture the oily sheen.

Jessica

Jessica Eckart, R.G.
Geologist
SECOR International, now Stantec
Ph: 503-691-2030
Fx: 503-692-7074

jessica.eckart@stantec.com
stantec.com

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Please consider the environment before printing this email.

From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Friday, March 21, 2008 3:38 PM
To: Lauck, Terry S.; Lundeen, Bill J.; Smith, Myron - Environmental:; Collins, Bill:; Lyons, Thomas:; Kober, Steven
Cc: Jessica Eckart; William Edmund
Subject: FW: Outfall 22 Sheen Observation - March 21, 2008

All - Please note the email message below from Secor Re: sheen observed at Outfall 22 today. I have no pictures at this time. Secor has reported to all agencies, and has been monitoring the outfall. Secor also spread additional absorbent pads at the outfall. This is a minor event, and no sheen has actually been observed coming from the outfall. This is sheen observed on the river water surface within the containment booms at the outfall. The river level is high, and no active flow is visible from the outfall. I will send a separate email to Chevron, Delta, and Mike Romero (ODEQ) informing them of the observed sheen episode. At this point, there are no plans to check for sheen at the outfall over the weekend.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
Noll Environmental, Inc.
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: Jessica Eckart [mailto:jeckart@secor.com]
Sent: Friday, March 21, 2008 1:13 PM
To: Noll, Michael D(DXT Services)
Cc: Jessica Eckart
Subject: Outfall 22 Sheen Observation - March 21, 2008

Mike,
An oily sheen was observed at Outfall 22 today around 7:45 AM. The oily sheen was contained within the booms. Absorbent pads also were placed near the mouth of the outfall to capture any sheen discharging from the pipe. The river level was up and backflushing into the storm sewer.

The following agencies were notified of the sheen: City of Portland BES, Oregon Spill Response (incident number 2008-0683), National Spill Response (report number 865691), and the Washington State Emergency Management Division. As of 10:30 AM, sheen did not appear to be discharging from the outfall.

If you have any questions or need additional information, please let me know.

Regards,
Jessica

Jessica Eckart, R.G.
Geologist
SECOR International, now Stantec
Ph: 503-691-2030
Fx: 503-692-7074
jessica.eckart@stantec.com
stantec.com

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From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Friday, March 28, 2008 3:03 PM
To: Lauck, Terry S.; Lundeen, Bill J.; Smith, Myron - Environmental:; Kober, Steven; Lyons, Thomas:; Collins, Bill:
Cc: Jessica Eckart; William Edmund
Subject: FW: pic from 3-26-08

All - Attached is the photo of the observed sheen at City of Portland outfall 22 yesterday.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
Noll Environmental, Inc.
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: Jessica Eckart [mailto:jeckart@secor.com]
Sent: Friday, March 28, 2008 1:37 PM
To: Noll, Michael D(DXT Services)
Subject: FW: pic from 3-26-08

Mike,
Here is the photo of the oily sheen observed March 26, 2008.

Jessica

Jessica Eckart, R.G.
Geologist
SECOR International, now Stantec
Ph: 503-691-2030
Fx: 503-692-7074
jessica.eckart@stantec.com
stantec.com

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Please consider the environment before printing this email.

From: Carl Swanson
Sent: Friday, March 28, 2008 1:22 PM
To: Jessica Eckart
Subject: pic from 3-26-08

From: Jessica Eckart
Sent: Friday, March 28, 2008 2:08 PM
To: Noll, Michael D(DXT Services)
Cc: William Edmund
Subject: Sheen observation - 3/28/2008

Mike,
Secor observed an oily sheen discharging from Outfall 22. The oily sheen is captured within the booms and absorbent pads have been placed to capture any additional oily sheen. I have contacted the following agencies about the oily sheen:

- NRC (a report number was not issued but I was instructed to contact USCG Sector Portland)
- USCG Sector Portland and IMR (Incident Management Response)
- ORS (incident #2008-0683)
- BES

Two photos are attached of today's sheen observation.

Regards,
Jessica

Jessica Eckart, R.G.
Geologist
SECOR International, now Stantec
Ph: 503-691-2030
Fx: 503-692-7074
jessica.eckart@stantec.com
stantec.com

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Please consider the environment before printing this email.

— CITY OF PORTLAND —
ENVIRONMENTAL SERVICES
1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204-1912 • Sam Adams, Commissioner • Dean Marriott, Director

TECHNICAL MEMORANDUM No. OF22-1

Outfall Basin 22
Inline Solids Sampling

0922
AGENCY COPY

TO: Karen Tarnow, Oregon Department of Environmental Quality (DEQ)

FROM: Dawn Sanders, City of Portland, Bureau of Environmental Services (BES)
Linda Scheffler, BES

COPIES: Kristine Koch, U.S. Environmental Protection Agency (EPA)
Grant Sprick, Arcadis BBL, Inc.
Mike Noll, Noll Environmental, Inc.
Brian Fletcher, Delta Environmental
Ted McCall, McCall Oil and Chemical Corp.
Julia Fowler, GSI Water Solutions, Inc.

DATE: April 3, 2008

SUBJECT: **Portland Harbor Source Control Investigation**

Introduction

This technical memorandum summarizes the results of the City of Portland BES source control investigation of inline solids in the Outfall Basin 22 stormwater conveyance system. The objectives of this investigation were to evaluate whether inline solids within Basin 22 may be contributing contaminants to river sediment and to assess whether the spatial distribution of contaminants within conveyance system solids indicates the presence of potential sources within the basin.

The Basin 22 system conveys stormwater flow to the river from Forest Park and the Willbridge industrial area. Samples were collected at the downstream ends of the two main branches of the stormwater conveyance system along NW Front and Doane Avenues as well as from one location adjacent to Forest Park. The investigation results indicate that metals (copper and zinc), polynuclear aromatic hydrocarbons (PAHs), and bis(2-ethylhexyl)phthalate (BEHP) slightly exceeding applicable screening levels are being discharged into the Basin 22 conveyance system.

This Basin 22 investigation, conducted in June 2006, is part of the City's ongoing source control program associated with the Portland Harbor City of Portland Outfalls Project. These investigation results are submitted pursuant to the August 13, 2003, Intergovernmental Agreement between DEQ and the City.

COP0019447

Basin 22 Configuration and Background

Figure 1 provides an overview of the Basin 22 stormwater conveyance system. The system consists of two main branches. The NW Doane Avenue branch extends southwest from NW Front Avenue in a 48-inch-diameter line. This branch conveys runoff from Forest Park, rights-of-way, industries on the west side of NW St. Helens Road, and two industrial facilities on NW Doane Avenue (Chevron Willbridge Distribution Center and ConocoPhillips Portland Terminal). The NW Front Avenue branch extends southeast from the intersection at NW Doane Avenue in a 30-inch-diameter line and conveys runoff from portions of the Paramount Petroleum (formerly Chevron USA Asphalt) and McCall Oil industrial facilities and the adjacent right-of-way. The two branches converge east of the intersection of these roads and discharge through a 60-inch-diameter pipe to Outfall 22.

According to the DEQ Environmental Cleanup Site Information (ECSI) database, there are three cleanup sites located within Basin 22 that comprise the majority of the basin. The Willbridge Bulk Fuel Area (ECSI No. 1549) extends along both sides of NW Doane Avenue and includes the ConocoPhillips, Chevron Willbridge, and Kinder Morgan Distribution Terminal sites. The McCall Oil (ECSI No. 134) and Chevron USA Asphalt Refinery (ECSI No. 1281) sites are located on NW Front Avenue. Contaminants of Interest (COI) for these sites include petroleum hydrocarbons, semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), polychlorinated biphenyls, PCBs, and metals (DEQ, 2005a-e).

Several facilities within Basin 22 have National Pollutant Discharge Elimination System (NPDES) stormwater permits including: Chevron Willbridge, ConocoPhillips, Brenntag Pacific (formerly Quadra and Great Western Chemical), and Paramount Petroleum (formerly Chevron USA Asphalt). The Brenntag Pacific site is included in the McCall Oil remedial investigation. DEQ cleanup sites and stormwater permittees are displayed on Figure 1.

Basin 22 was designated as a Priority 3 basin for source investigation based on elevated concentrations of polynuclear aromatic hydrocarbons (PAHs) detected in the surface sediment samples collected by the City near Outfall 22 in 2002 (CH2M HILL, 2004). Priority 3 designations were assigned to basins where significant concentrations of contaminants have been detected in sediment near the outfall and the contaminants likely are attributable to known upland sources which are currently being investigated under DEQ oversight. In 2005, based on a review of additional sediment data collected by the Lower Willamette Group (LWG) (Integral, 2005), EPA identified Willbridge Cove as an area of potential concern for polychlorinated biphenyls (PCBs) and cadmium (EPA, 2005). Outfall 22 discharges into Willbridge Cove.

In 2006, the City developed an analytical list for the basin source investigation from a review of sediment data collected in the vicinity of Outfall 22. Based on this evaluation, three metals (cadmium, copper and zinc), PCBs, PAHs, phthalates, and pesticides were selected as potential COI.

Field Activities

The City coordinated with DEQ regarding the source control investigation before conducting this work. Target sample locations were identified to represent solids from each main branch and from the portion of the basin above the Willbridge industrial area. An effort was made to collect additional samples at locations above and below known lateral connections, but final sampling

locations within the basin were limited by inline solids availability. Inline solids were sampled at three locations on June 27, 2006 (see Figure 1), with a duplicate sample collected at one location. Samples were collected using a stainless steel spoon and bowl, in accordance with BES Field Operations' Standard Operating Procedures. Photographs of the sampling locations and inline solids are included in Attachment A. Field notes recorded during sampling activities are provided in Attachment B. The three sampling locations are described as follows:

Forest Park (Trash Rack AAP844): Inline solids were sampled from the 24-inch line immediately upstream of a trash rack (see Photo 7 in Attachment A) located south of NW St. Helens Road, in a portion of the conveyance system that conveys runoff from Forest Park and a small residential area along NW Willbridge Avenue. Based on grain size analysis of the sample composition, the sample was comprised of primarily finer material (clay, silt, and fine sand) along with approximately 30% gravel. No odor or visual evidence of contamination was noted.

NW Doane Avenue Stormwater Branch (Manhole AAM080): Inline solids were sampled from the 48-inch line just upstream of manhole AAM080, representing contributions from Forest Park, the NW St. Helens Avenue and NW 57th Avenue rights-of-way and adjacent properties, and the NW Doane Avenue industrial area (Chevron-Willbridge and ConocoPhillips). Grain size analysis indicates that this sample was composed of sands and gravel, and had relatively no silt or clay. Water in the pipe exhibited a visible sheen, but no odor was noted in the sample.

NW Front Avenue Stormwater Branch (Manhole AAM078): Inline solids were sampled from the 30-inch line just upstream from manhole AAM078, representing contributions from the NW Front Avenue right-of-way and portions of the Chevron Asphalt and McCall Oil sites. Similar to the sample from NW Doane Avenue, grain size analysis indicates that the sample was composed of sands and gravel with virtually no silts or clay. No odor or visual evidence of contamination was noted. A duplicate sample was collected at this location.

In an attempt to evaluate whether grain size affects chemical concentrations detected in stormwater solids, the samples were split following collection. One split sample was submitted directly for laboratory analyses. The other split sample was brought to the field laboratory and sieved with a 500-micron sieve. The coarse fraction of the sieved sample was discarded and the finer fraction was submitted for chemical analytical testing. The chemical analytical results of the split samples were then compared. As the comparison was inconclusive with regard to grain size, no further evaluation of these data or pursuit of this concept is being considered by the City.

Summary of Results

The three inline solids samples and one duplicate sample obtained from the basin conveyance system were analyzed for three metals (cadmium, copper, and zinc), PCBs, PAHs, phthalates, pesticides, total organic carbon, and grain size. Table 1 summarizes the physical and chemical analytical data results from this investigation. The laboratory analytical results and data review memorandum for the samples are provided in Attachment C.

The chemical data from the Basin 22 sampling were compared with the Portland Harbor Joint Source Control Strategy (JSCS) screening level values (SLVs) for bioaccumulation and toxicity (DEQ/EPA, 2005), and DEQ's Default Background Metal Concentrations for Soil (DEQ, 2002). The results of the comparisons are summarized as follows:

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- Metals: Samples from NW Front Avenue exceeded JSCS toxicity SLVs for copper and zinc in either the normal sample or the duplicate sample, but not both samples. The fact that the normal and duplicate sample results were significantly different for these two metals suggests that homogenization of this sample matrix may be difficult for metals analyses. Lowest metals concentrations were in the Forest Park solids sample, where results are either similar or less than the DEQ background concentrations for cadmium, copper, and zinc.
- PCBs: PCBs were not detected.
- PAHs: PAHs were detected at higher concentrations in the NW Doane Avenue branch. Benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene concentrations exceeded the JSCS toxicity SLVs at this location.
- Phthalates: BEHP was detected at similar concentrations at all three locations. The concentration in the trash rack sample exceeded the JSCS toxicity SLV.
- Pesticides: 4,4'-DDT was detected in the solids sample collected from the NW Doane Avenue branch sample (manhole AAM080) at a concentration greater than the JSCS bioaccumulation SLV. No pesticides were detected in the Forest Park sample or the NW Front Avenue samples.

Conclusions

The results of the Basin 22 source control investigation indicate that metals (copper and zinc), PAHs and BEHP are being discharged to the City stormwater conveyance system at concentrations that exceed JSCS SLVs, though exceedances were relatively small. The metals and PAH concentrations were the highest in the solid samples collected downstream of the industrial areas located along the NW Doane Avenue and NW Front Avenue branches. The NW Doane Avenue branch conveys runoff from several industrial sites that manufacture, store, and/or distribute petroleum products. The NW Front Avenue branch includes stormwater discharges from two permitted industries (Brenntag Pacific and Paramount Petroleum Corporation) that have exceeded permit benchmarks for copper and zinc (see Attachment D). These facilities represent potential sources of contaminants detected in the inline solids samples collected from the NW Doane Avenue and NW Front Avenue branches. BEHP concentrations were less than an order-of-magnitude above SLVs and did not present a distinct spatial pattern that indicated locations of significant sources.

Next Steps

Several facilities within Basin 22 are in the process of conducting stormwater pathway evaluations under DEQ oversight, including Chevron Willbridge, Chevron Asphalt, ConocoPhillips, and McCall Oil. Additionally, in 2007 the LWG collected stormwater and sediment trap samples in Basin 22. The City will evaluate data collected by the DEQ cleanup sites and the LWG to determine if additional source investigation is needed within Basin 22.

References

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Table

Table 1 - *Summary of Chemical Analytical Results, Inline Solids Sampling, Outfall Basin 22*

Figure

Figure 1 – *Basin 22, Inline Solids Sampling Locations*

Attachments

Attachment A - *Field Photographs*
Attachment B - *Field Notes*
Attachment C - *Laboratory Results*
Attachment D – *NW Front Avenue Branch 1200-Z Stormwater Monitoring Data*

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Table 1
Summary of Chemical Analytical Results
Inline Solids Sampling
Outfall Basin 22

			Upstream			Downstream			
			Forest Park Trash Rack AAP844 FO 060748	NW Doane Avenue Manhole AAM080 48" line FO 060747	NW Front Avenue Manhole AAM078 30" line FO 060746	NW Front Avenue Manhole AAM078 Duplicate FO 060749	JSCS Screening Level Value[1]		DEQ Default Background Metal Concentrations in Soil[2]
Class	Analyte	Units	6/27/2006	6/27/2006	6/27/2006	6/27/2006	Toxicity	Bioaccumulation	
Total Organic Carbon (TOC) (EPA 9060MOD)									
	TOC	mg/Kg	16400	5290	2860	4430	--	--	
Grain Size (ASTM D421/422)									
	Gravel (>4750 µm)	Fract %	29.8	18.8	21.4	47.7	--	--	
	Coarse Sand (4750-2000 µm)	Fract %	10	16.1	12.3	14.5	--	--	
	Medium Sand (2000-425 µm)	Fract %	14.2	24.3	24.6	22	--	--	
	Fine Sand (425-75 µm)	Fract %	16.9	16.5	20.6	15.5	--	--	
	Silt (3.2-75 µm)	Fract %	26.44	1.4	0.5	0.4	--	--	
	Clay (<3.2 µm)	Fract %	2.7	0	0	0	--	--	
Metals (EPA 6020)									
	Cadmium	mg/Kg	0.18	0.41	0.64	0.48	4.98	1	1
	Copper	mg/Kg	35.9	51.3	75.3	[redacted]376j	149	--	36
	Zinc	mg/Kg	79.6	316	[redacted]670j	336	459	--	86
Polychlorinated Biphenyls (PCBs) (EPA 8082)									
	PCB 1016	µg/Kg	12 U	12 U	11 U	11 U	530	--	
	PCB 1221	µg/Kg	12 U	12 U	11 U	11 U	--	--	
	PCB 1232	µg/Kg	12 U	12 U	11 U	11 U	--	--	
	PCB 1242	µg/Kg	12 U	12 U	11 U	11 U	--	--	
	PCB 1248	µg/Kg	12 U	12 U	11 U	11 U	1500	--	
	PCB 1254	µg/Kg	12 U	12 U	11 U	11 U	300	--	
	PCB 1260	µg/Kg	12 U	12 U	11 U	11 U	200	--	
	Total PCBs	µg/Kg	ND	ND	ND	ND	676	0.39	
Polynuclear Aromatic Hydrocarbons (PAHs) (EPA 8270C-SIM)									
	1-Methylnaphthalene	µg/Kg	6.2 U	6	5.8 U	5.6 U	--	--	
	2-Methylnaphthalene	µg/Kg	6.2 U	7.2	5.8 U	5.6 U	200	--	
	Acenaphthene	µg/Kg	6.2 U	58	5.8 U	5.6 U	300	--	
	Acenaphthylene	µg/Kg	6.2 U	5.9 U	5.8 U	6.7	200	--	
	Anthracene	µg/Kg	6.9	76	5.8 U	5.6 U	845	--	
	Benzo(a)anthracene	µg/Kg	44	610	33	92	1050	--	
	Benzo(a)pyrene	µg/Kg	63	710	40	110	1450	--	
	Benzofluoranthenes[3]	µg/Kg	56	650	41	110	13000	--	
	Benzo(g,h,i)perylene	µg/Kg	59	[redacted]520j	37	84	300	--	
	Chrysene	µg/Kg	62	700	44	140	1290	--	
	Dibenzo(a,h)anthracene	µg/Kg	10	160	10	23	1300	--	
	Fluoranthene	µg/Kg	65	1000	46	80	2230	37000	
	Fluorene	µg/Kg	6.2 U	42	5.8 U	5.6 U	536	--	
	Indeno(1,2,3-cd)pyrene	µg/Kg	65	[redacted]600j	39	100	100	--	
	Naphthalene	µg/Kg	6.2 U	17	5.8 U	5.6 U	561	--	
	Phenanthrene	µg/Kg	29	640	18	17	1170	--	
	Pyrene	µg/Kg	69	870	58	98	1520	1900	
Phthalates (EPA 8270C-SIM)									
	Bis(2-ethylhexyl)phthalate	µg/Kg	[redacted]950j	790	360	380	800	330	
	Butylbenzylphthalate	µg/Kg	25 U	45	740	23 U	--	--	
	Diethylphthalate	µg/Kg	12 U	12 U	12 U	11 U	600	--	
	Dimethylphthalate	µg/Kg	12 U	1600	12 U	11 U	--	--	
	Di-n-butylphthalate	µg/Kg	25 U	27	23 U	23 U	100	60	
	Di-n-octylphthalate	µg/Kg	25 U	74	68	34	--	--	

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			Upstream			Downstream			
			Forest Park Trash Rack AAP844 FO 060748	NW Doane Avenue Manhole AAM080 48" line FO 060747	NW Front Avenue Manhole AAM078 30" line FO 060746	NW Front Avenue Manhole AAM078 Duplicate FO 060749	JSCS Screening Level Value[1]		DEQ Default Background Metal Concentrations in Soil[2]
Class	Analyte	Units	6/27/2006	6/27/2006	6/27/2006	6/27/2006	Toxicity	Bioaccumulation	
Pesticides (EPA 8081)									
	4,4'-DDD	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	28	0.33	
	4,4'-DDE	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	31.3	0.33	
	4,4'-DDT	µg/Kg	2.6 U	5.7	2.1 U	2.3 U	62.9	0.33	
	Total DDT[4]	µg/Kg	ND	5.7	ND	ND	--	0.33	
	Aldrin	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	40	--	
	Alpha-BHC	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	--	--	
	Alpha-Chlordane	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	--	--	
	Gamma-Chlordane	µg/Kg	1.3 U	1.9	1.1 U	1.1 U	--	--	
	Chlordane[5]	µg/Kg	ND	1.9	ND	ND	17.6	0.37	
	Beta-BHC	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	--	--	
	Delta-BHC	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	--	--	
	Dieldrin	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	61.8	0.0081	
	Endosulfan I	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	--	--	
	Endosulfan II	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	--	--	
	Endosulfan Sulfate	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	--	--	
	Endrin	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	207	--	
	Endrin aldehyde	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	--	--	
	Endrin ketone	µg/Kg	2.6 U	2.5 U	2.1 U	2.3 U	--	--	
	Gamma-BHC (Lindane)	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	4.99	--	
	Heptachlor	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	10	--	
	Heptachlor epoxide	µg/Kg	1.3 U	1.3 U	1.1 U	1.1 U	16	--	
	Methoxychlor	µg/Kg	13 U	13 U	11 U	11 U	--	--	
	Toxaphene	µg/Kg	130 U	130 U	110 U	110 U	--	--	

Notes:

ND = not detected at concentrations greater than the laboratory reporting limit.

U = The analyte was not detected above the reported sample quantification limit.

Chemical units in micrograms per kilogram (µg/Kg) or milligrams per kilogram (mg/Kg) dry weight.

-- = No JSCS Screening Level Value has been established

µm = microns

Fract % = Percent of soil retained in grain size category during grain size analysis.

[1]JSCS - Portland Harbor Joint Source Control Strategy (DEQ/EPA Final December 2005, Amended July 2007).

[2]DEQ Environmental Cleanup Program Memorandum to Cleanup Project Managers, Default Background Metal Concentrations in Soil. October 28, 2002.

[3] SLV is for Benzo(k)fluoranthene.

[4] This value reprepents the sum of DDD, DDE and DDT.

[5] This value reprepents the sum of chlordane isomers.

[...] = concentration exceeds JSCS Toxicity Screening Level Value

bold = concentration exceeds JSCS Bioaccumulation Screening Level Value

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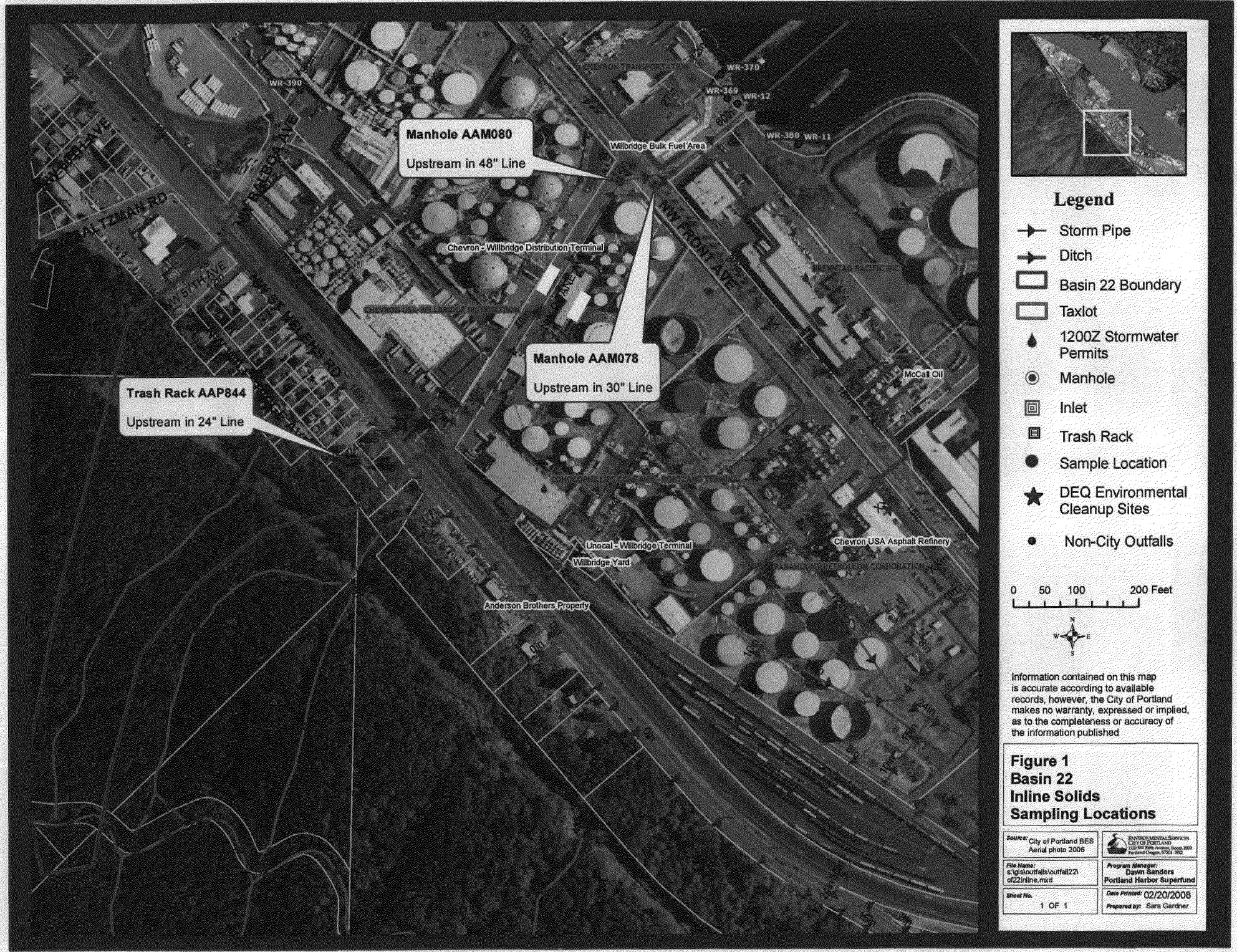

Information contained on this map is accurate according to available records, however, the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published

Figure 1
Basin 22
Inline Solids
Sampling Locations

Source: City of Portland BES Aerial photo 2006	Environmental Services, City of Portland, 1120 SW Fifth Avenue, Room 1000, Portland Oregon, 97204-1972
File Name: s:\gis\outfalls\outfall22\of22inline.mxd	Program Manager: Dawn Sanders Portland Harbor Superfund
Sheet No. 1 OF 1	Date Printed: 02/20/2008 Prepared by: Sara Gardner

Attachment A
Field Photographs

Field Sampling Activities: June 27, 2006

Photo 1. Aboveground location of manhole AAM078, on NW Front Avenue looking east. Inline solids were collected from the 30-inch-diameter line, upstream of the manhole.

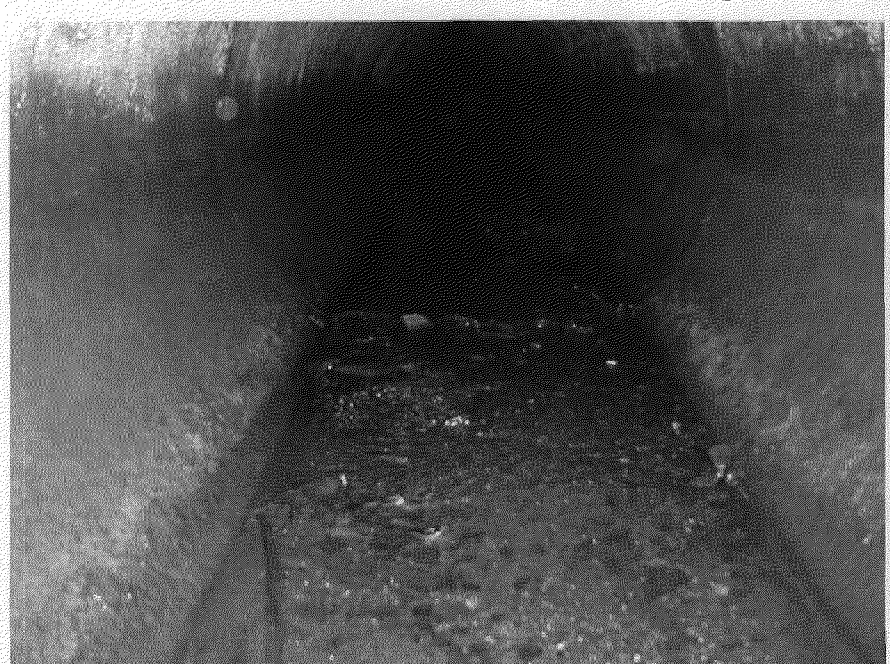

Photo 2. Looking upstream of manhole AAM078, in the 30-inch-diameter line.

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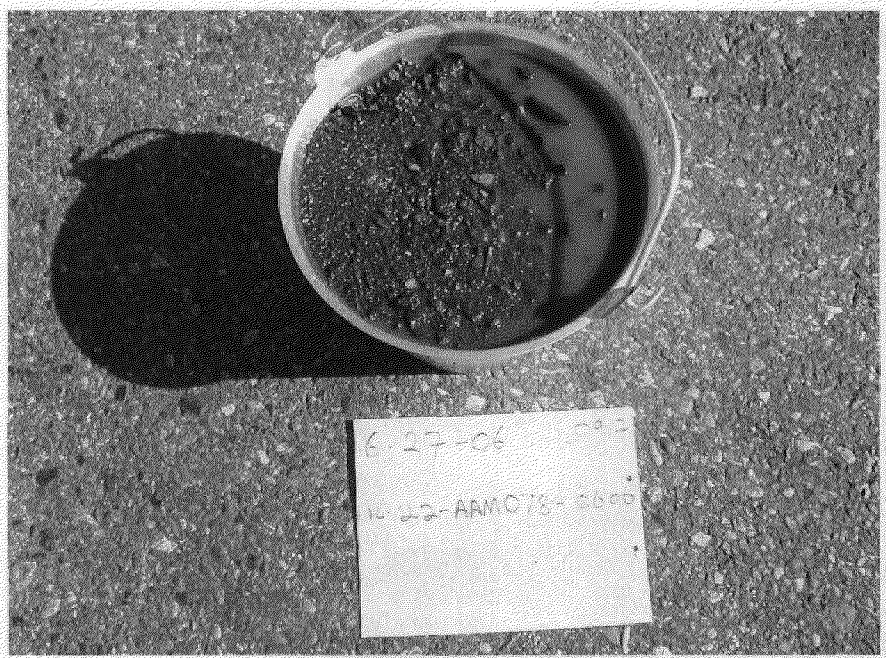

Photo 3. Inline solids collected from upstream of manhole AAM078.

Photo 4. Aboveground location of manhole AAM080, on NW Doane Avenue looking northeast. Inline solids were collected from the 48-inch-diameter line, on the upstream side of this manhole.

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Photo 5. Looking upstream from manhole AAM080, in the 48-inch-diameter line.

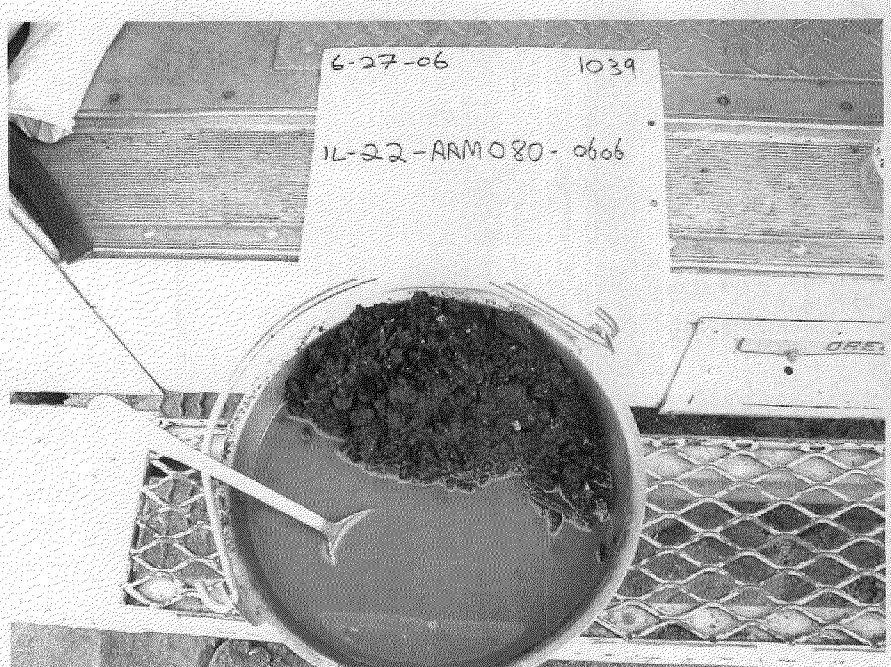

Photo 6. Inline solids collected from upstream of manhole AAM080.

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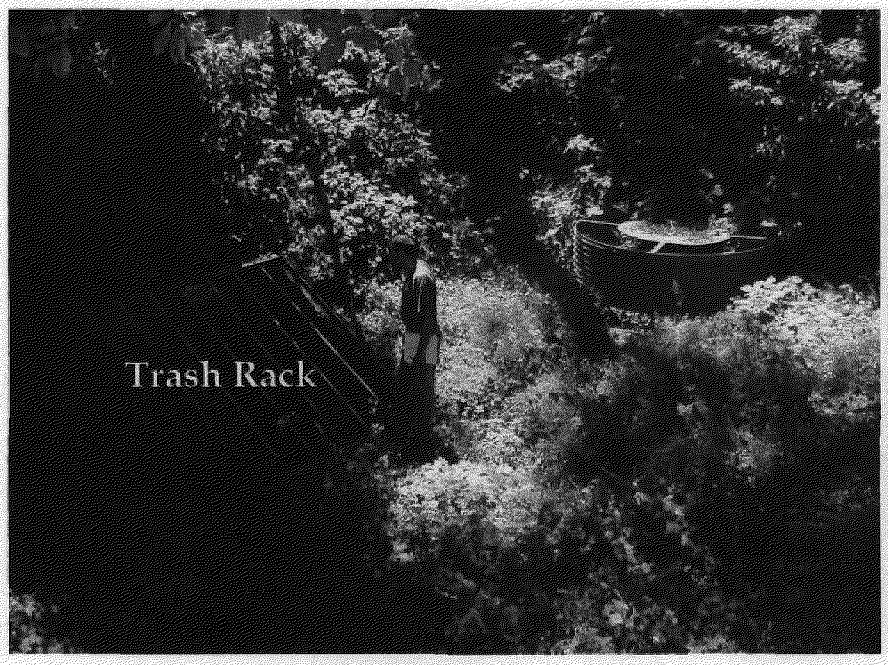

Photo 7. Aboveground location of trash rack AAP844. Inline solids were collected in the 24-inch-diameter line between the trash rack and the overflow collector (to the right).

Photo 8. Looking from the trash rack upstream toward the overflow collector. Solids were collected from this 24-inch-diameter line.

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Photo 9. Inline solids downstream of trash rack AAP844.

Photo 10. Inline solids collected from trash rack AAP844.

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Attachment B
Field Notes

City of Portland
Environmental Services

DAILY FIELD REPORT

Project IN-LINE SED SAMP
Project No. 1020.00)
Location BASIN 22
Date 6-27-06
Subject FIELD NOTES
By MJH

0700 PREPARE EQUIPMENT FOR TODAYS SAMPLING EVENT
DECONNED SAMPLING SPOONS, BOWLS PER SOP 701a.
ASSEMBLED COOLER, SAMPLE JARS, PAPERWORK

0830 ARRIVE AT NW GRANT + DOANE
LINDA ARRIVES. DISCUSS TODAYS ACTIVITIES
WE WILL START AT BASIN 22 THEN MOVE OVER TO NICOLAI

0900 SET UP AT AAM078.
LOTS OF TRAFFIC CONTROL HERE, BUT ITS OK.
BRIAN ENTERS MH. LOTS OF SEDS HERE. DECIDE TO COLLECT
A FULL BUCKET OF SEDIMENT. SEDS COLLECTED FROM THEIR
ENTIRE DEPTH.
COLLECT SAMPLE AND DUPLICATE AT THIS LOCATION.

1000 BRUCE + BRIAN ARRIVE. DISCUSS SILVING W/ LINDA.
DECIDE TO ARCHIVE BUCKET OF SEDIMENTS AT WPCL.
BRUCE WILL WORK W/ SEDS LATER IN THE WEEK.

1020 SET UP FOR ENTRY AT AAM080

1034 COLLECT SAMPLE AT AAM080

1047 PROCEED TO NEXT SITE

1122 SET UP TO GO IN AAP785

Attachments

COP0019462

City of Portland
Environmental Services

DAILY FIELD REPORT

Project IN-LINE SED SAMP
Project No. 1020.001
Location BASIN 22 + 15
Date 6-27-06
Subject FIELD NOTES
By MJP

1140 SMALL SPRING AT BOTTOM OF MH AAP785.
BCL THOUGHT THERE WERE SEDS IN THE DOWNSTREAM
BUT IT WAS JUST EXPOSED AGREGATE.

1152 MOVE TO AAP 792
NO SEDS BREAK FOR LUNCH.

1234 ARRIVE AT AAP894 TRACK RACK. ENTER TRACK RACK
AND OBSERVE LOTS OF SEDIMENTS HERE.
COLLECT MORE THAN NEEDED FOR SIEVING/ARCHIVAL PURPOSES.

1300 ARRIVE AT CALBAG METALS ON NW NICOLAI.

1310 GO INTO ABB 878, NO SEDS, NO SAMPLE COLLECTED.

1318 GO TO ABC 003 BASIN 15 SEDS IN LATERAL. COLLECT THESE

1345 COLLECTED SAMPLE IN 10" LATERAL FROM ESCO.

1359 LOOKED DOWN ABC 018. NO HOPE OF SEDS
IN THE MAIN LINE SO WE DID NOT ENTER.
WE ARE REASONABLY CERTAIN THAT THIS IS
THE MH AT CALBAG TIES INTO.

Attachments

City of Portland
Environmental Services

DAILY FIELD REPORT

Page 3 of 3

Project IN-LINE SED SAMP
Project No. 1020.001
Location BASIN 22 + 15
Date 6-22-06
Subject FIELD NOTES
By MJJ

1410 RETURN TO WPCL TO WRAP UP

1525 SAMPLES IN CHILLED COOLER SUBMITTED TO WPCL LAB FOR ANALYSIS UNDER CHAIN OF CUSTODY.

3 SAMPLES (FROM AAM078, AAM080, AAP844) HAD EXTRA MATERIAL THAT WAS SAVED IN ITS STAINLESS STEEL SAMPLING CONTAINER AND PUT INTO THE FOPS WPCL STAGING AREA FRIDGE FOR ARCHIVING AND POSSIBLE SIEVING LATER THIS WEEK. FOR EACH SAMPLE THIS ARCHIVED MATERIAL IS IDENTICAL FROM THE SAMPLE SUBMITTED TODAY TO THE LAB.

Attachments

CITY OF PORTLAND

ENVIRONMENTAL SERVICES

Water Pollution control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

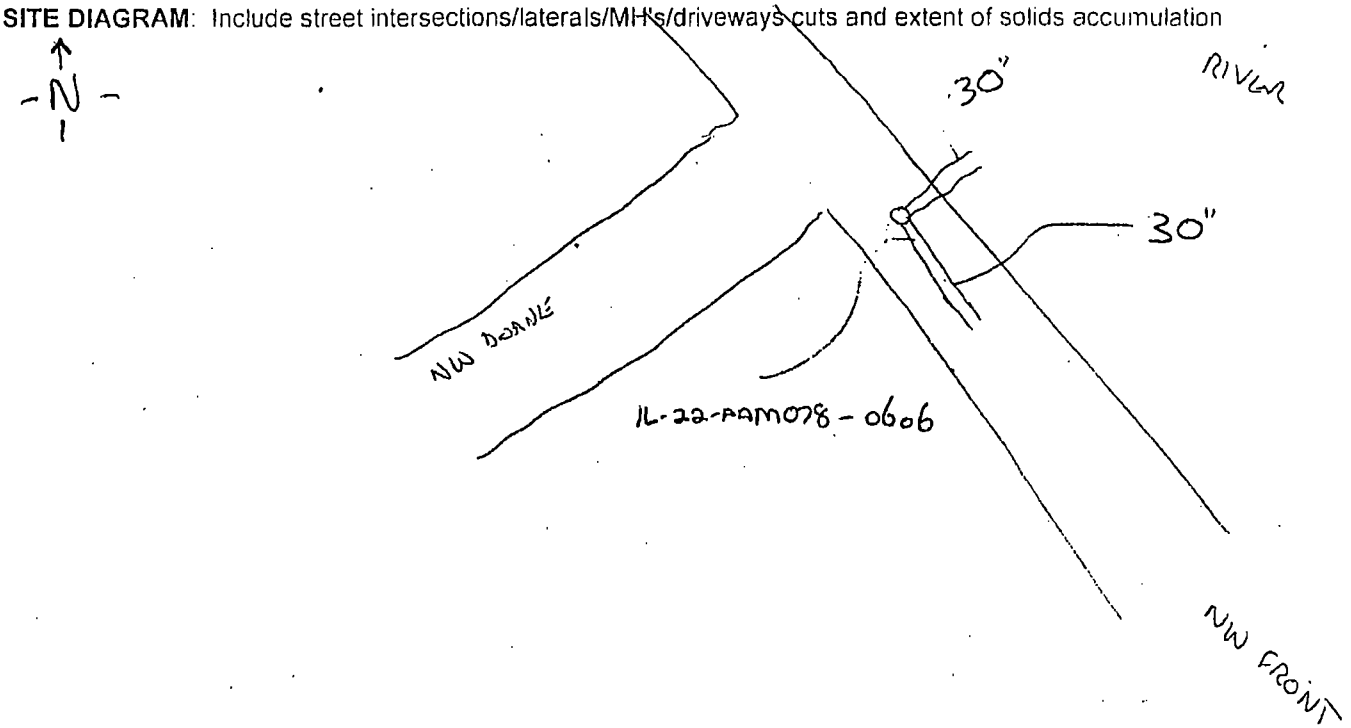
SEDIMENT SAMPLING FIELD DATA SHEET

Date: 6/27/06	Time: 0901	Current Weather conditions:	SUNNY 80's
Sampling Team Present:	MJH / BCL / JXB		
Basin: 22	Node: AAM 078	Subbasin:	
Sampling Location Description/Address:	JUST S OF INTERSECTION OF NW FRONT + DOANE		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	FLOW IS 2.9" DEEP. 0.1 - 0.2 CPS FLOW IS CLEAR
Does river appear to back up to this location? Describe rate/color/odor of flow:	NO (MAYBE)
Are sediments observed in the line?	YES
Are sample-able quantities of sediments present in the line?	YES
Describe lateral extent of sample-able sediments present in the line:	AS FAR AS VISABLE UPSTREAM NONE DOWN STREAM

SITE DIAGRAM: Include street intersections/laterals/MH's/driveways cuts and extent of solids accumulation



COP0019465

Date: 6/27/06	SECTION 2 - SAMPLE COLLECTION REPORT	Node: AAM 078

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 6-27-06	Sample time: 0917
Sample Identification: (IL-XX-NNNNNN-mmyy)	IL-22-AAM078-0606
Sample location description: (number of feet from node of entry)	3' UPSTREAM FROM M.H.
Sample collection technique:	SS SPOON INTO BUCKET
Describe Color of sample:	DARK GREY
Describe Texture/Particle size:	GRAVELS/COBBLES → SANDS
Describe visual or olfactory evidence of contamination:	NONE
Desacribe depth of solids in area where sample collected:	2" DEEP.
Describe amount and type of debris in sample:	—
Compositing notes:	

Sample Jars Collected 5 4-oz, 2 8oz

If not enough sample to fill all of the jars, then fill jars in this order:				
	Metals	One 4oz glass jar		
	PAHs/SVOCs	One 4oz glass jar		
	PCBs	One 4oz glass jar		
	TPH (two jars)	Two 4oz glass jars		
	TOC	One 4oz glass jar		

Duplicate sample collected?	YES
Duplicate sample fictitious identification # on COC:	FO 060749
Samples placed in chilled cooler? (Y)/N	
Samples delivered to lab? (Y)/N	Lab ID Number: FO 060746
Describe any deviations from standard procedures:	EXCESS SAMPLE SAVED FOR POSSIBLE SIEVING

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ENVIRONMENTAL SERVICES

Water Pollution control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

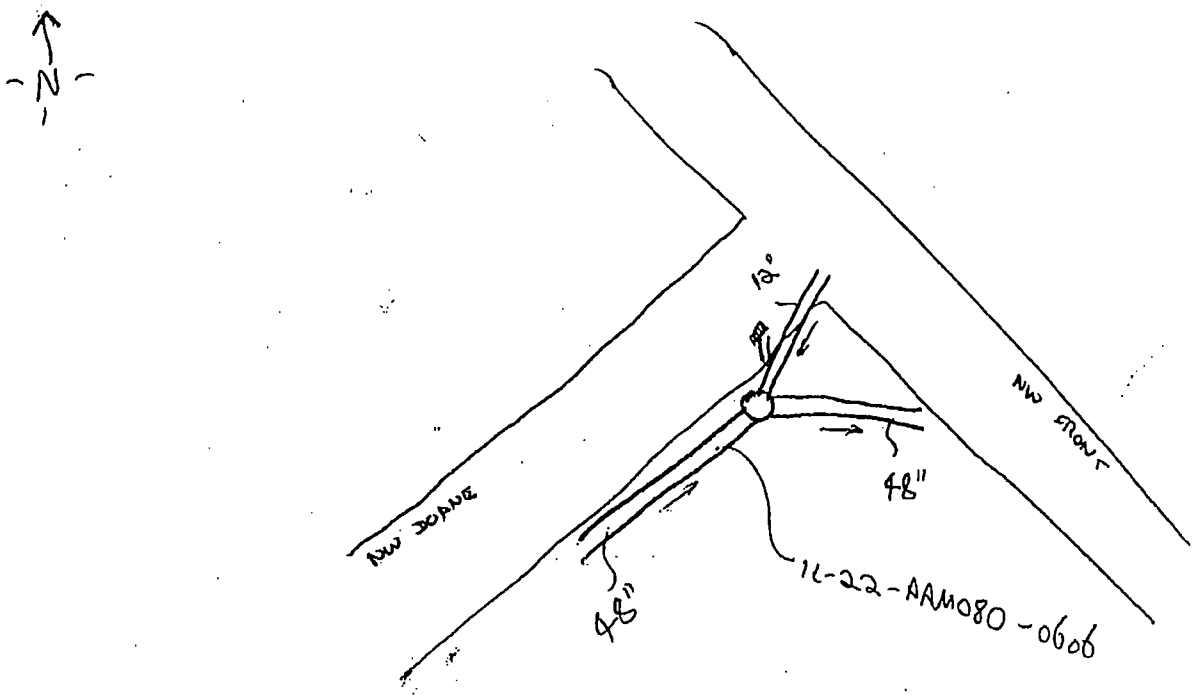
SEDIMENT SAMPLING FIELD DATA SHEET

Date: 6-27-06	Time: 1020	Current Weather conditions: SUNNY 80's
Sampling Team Present: MJH / JXB / BCL		
Basin: BASIN 22	Node: AAM080	Subbasin:
Sampling Location Description/Address: JUST S. OF INTERSECTION OF NW FRONT & DOANE		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	2/10 GPS, 1-7" DEEP
Does river appear to back up to this location? Describe rate/color/odor of flow:	NO
Are sediments observed in the line?	YES
Are sample-able quantities of sediments present in the line?	YES
Describe lateral extent of sample-able sediments present in the line:	AS FAR AS VISIBLE.

SITE DIAGRAM: Include street intersections/laterals/MH's/driveways cuts and extent of solids accumulation



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Date: 6/27/06	SECTION 2 - SAMPLE COLLECTION REPORT	Node: AAM080

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 6-27-06	Sample time: 1039
Sample Identification: (IL-XX-NNNNNN-mmyy)	IL-22-AAM080-0606
Sample location description: (number of feet from node of entry)	6' UPSTRAM OF NODE IN 48" LINE
Sample collection technique:	SS SPOON INTO BUCKET.
Describe Color of sample:	BROWN,
Describe Texture/Particle size:	GRAVEL - SANDS + FINER
Describe visual or olfactory evidence of contamination:	SHEEN OBSERVED ON WATER.
Desacribe depth of solids in area where sample collected:	2"
Describe amount and type of debris in sample:	
Compositing notes:	

Sample Jars Collected

If not enough sample to fill all of the jars, then fill jars in this order:				
	Metals	One 4oz glass jar		
	PAHs/SVOCs	One 4oz glass jar		
	PCBs	One 4oz glass jar		
	TPH (two jars)	Two 4oz glass jars		
	TOC	One 4oz glass jar		

Duplicate sample collected?	NO
Duplicate sample fictitious identification # on COC:	
Samples placed in chilled cooler? (Y)N	
Samples delivered to lab? (Y)N	Lab ID Number: FO 060747
Describe any deviations from standard procedures:	EXCESS SAMPLE SAVED FOR SIEVING

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Water Pollution control Laboratory
6543 N. Burlington Ave.,
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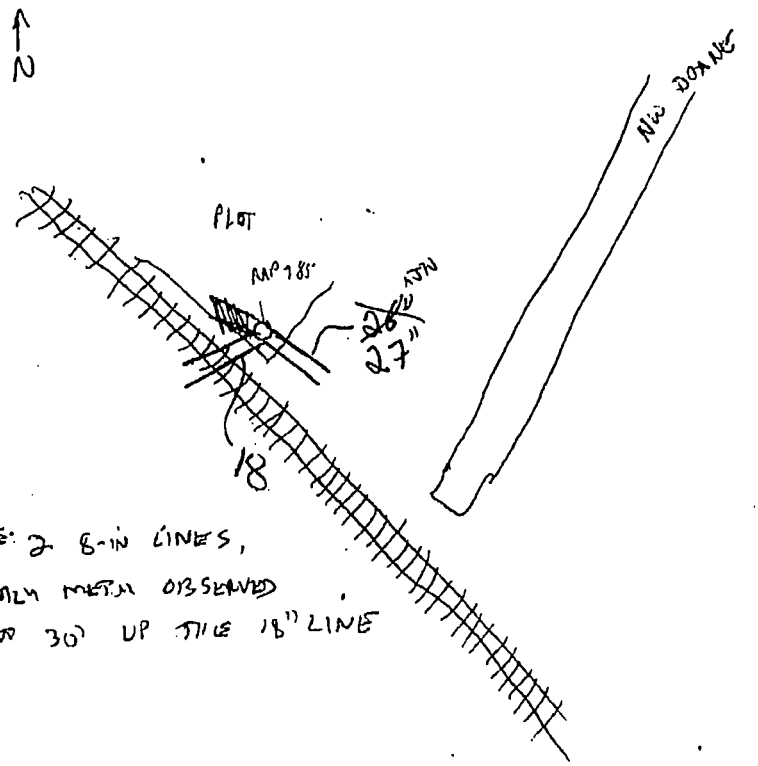
SEDIMENT SAMPLING FIELD DATA SHEET

Date: 6-27-06	Time: 1123	Current Weather conditions: SUNNY 80's
Sampling Team Present: MJH / JAB / BCL		
Basin: 22	Node: AAP 785	Subbasin:
Sampling Location Description/Address: IN PARKING LOT AT TOP OF PLANT BY TRAIN TRACKS		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	SMALL ARTESIAN SPRING TRICKLED A CRACK IN THE PIPE AT THE MH.
Does river appear to back up to this location? Describe rate/color/odor of flow:	NO
Are sediments observed in the line?	~~YES MINOR AMTS DOWNSTREAM~~ NO
Are sample-able quantities of sediments present in the line?	~~YES~~ NO WHAT WAS THOUGHT TO BE SEDS WAS, IN FACT, EXPOSED AGGREGATE OF THE PIPE
Describe lateral extent of sample-able sediments present in the line:	DOWNSTREAM OF MH IN 27"

SITE DIAGRAM: Include street intersections/laterals/MH's/driveways cuts and extent of solids accumulation



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Water Pollution control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

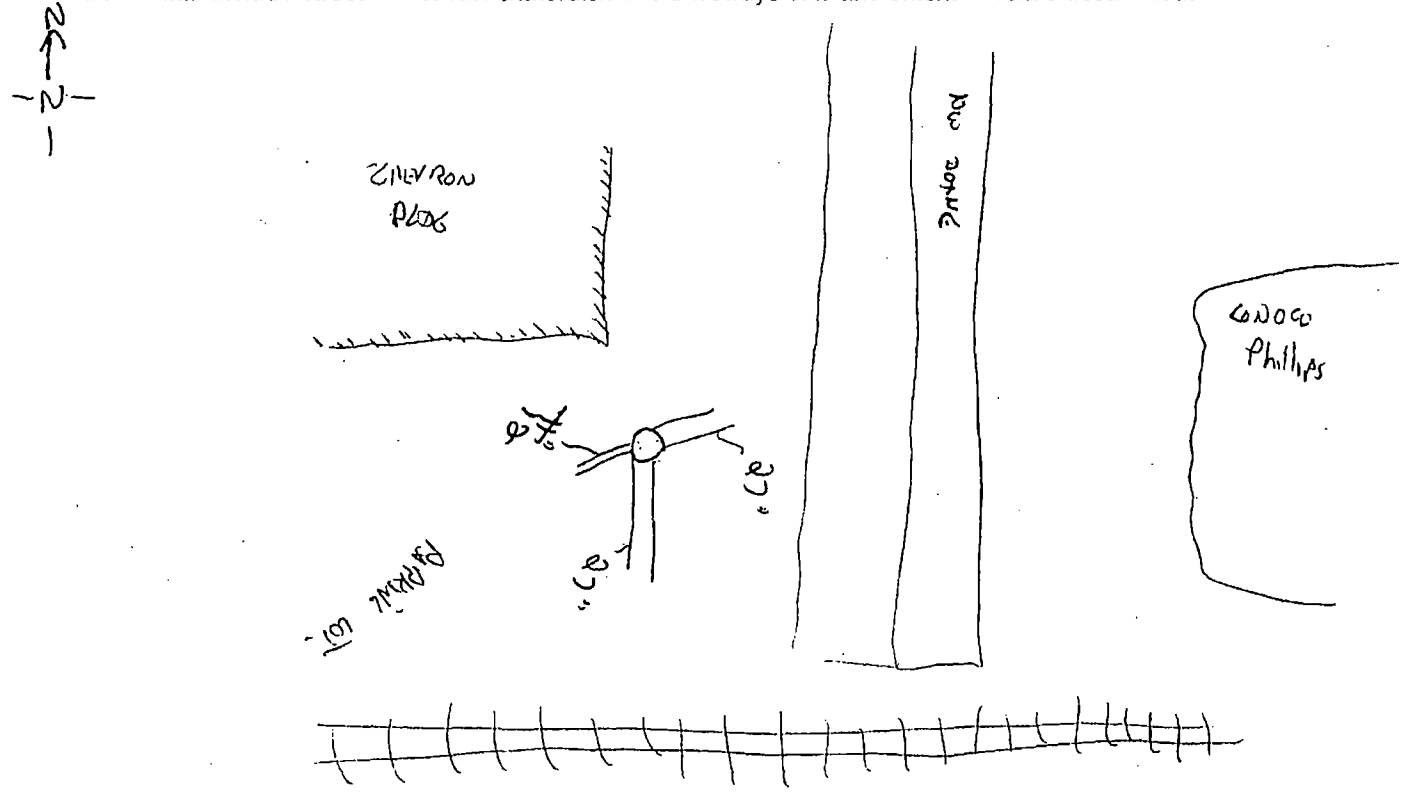
SEDIMENT SAMPLING FIELD DATA SHEET

Date: 6-27-06	Time: 1151	Current Weather conditions: SUNNY 90's	
Sampling Team Present: MJH | BCL | JXB			
Basin: 22	Node: AAP792	Subbasin:	
Sampling Location Description/Address: MH IN YELLOW STRIPED AREA AT ENTRY GATE TO CHEVRON PLANT AT TOP OF NW DOANE.			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	MINOR FROM SPRING UPSTREAM
Does river appear to back up to this location? Describe rate/color/odor of flow:	N.O
Are sediments observed in the line?	NO
Are sample-able quantities of sediments present in the line?	NO
Describe lateral extent of sample-able sediments present in the line:	—

SITE DIAGRAM: Include street intersections/laterals/MH's/driveways cuts and extent of solids accumulation



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Water Pollution control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

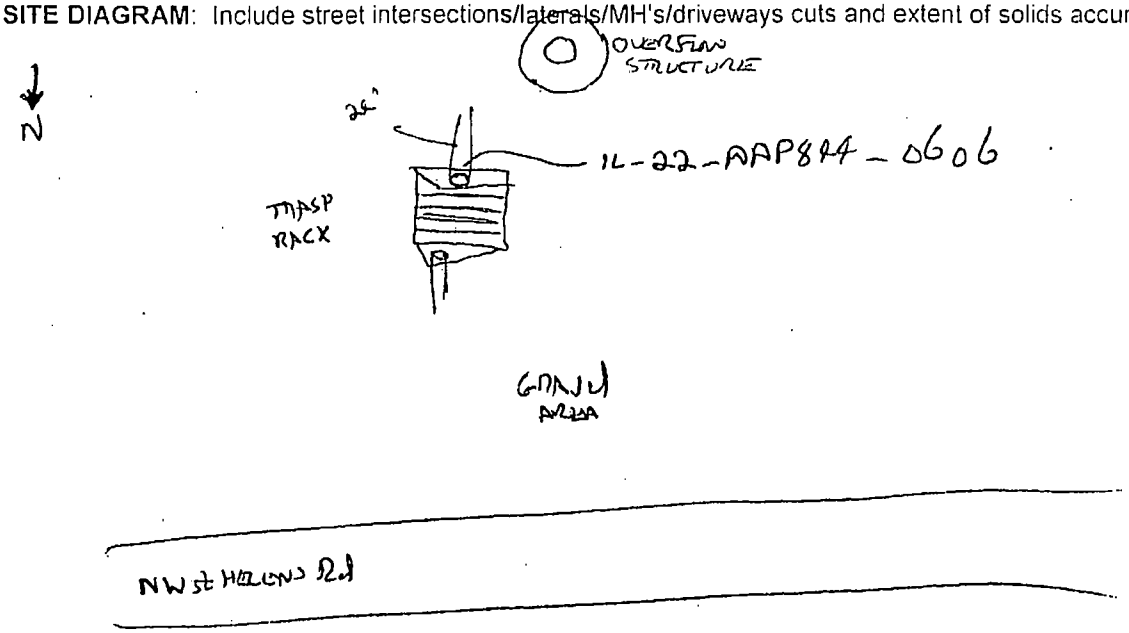
SEDIMENT SAMPLING FIELD DATA SHEET

Date: 6-27-06	Time: 1235	Current Weather conditions: SUNNY 90's
Sampling Team Present:		
Basin: BASIN 22	Node: AAP 844	Subbasin:
Sampling Location Description/Address: TRACK RACK AT NW ST HELENS Rd + NW 55TH.		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	NO
Does river appear to back up to this location? Describe rate/color/odor of flow:	NO
Are sediments observed in the line?	YES ABOUT 1/3 FULL
Are sample-able quantities of sediments present in the line?	YES
Describe lateral extent of sample-able sediments present in the line:	AS FAR AS VISIBLE UP + DOWN STREAM

SITE DIAGRAM: Include street intersections/laterals/MH's/driveways cuts and extent of solids accumulation



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Date: 6-27-06	SECTION 2 - SAMPLE COLLECTION REPORT	Node: AAP 844

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a ☐ Other (Describe)
Sample date: 6-27-06	Sample time: 1238
Sample Identification: (IL-XX-NNNNNN-mmyy)	IL-22-AAP844-0606
Sample location description: (number of feet from node of entry)	JUST UPSTREAM OF TRASH RACK
Sample collection technique:	SS SPOON INTO SS BOWL
Describe Color of sample:	DK GRAY
Describe Texture/Particle size:	COBBLES ALL THE WAY TO FINE SANDS
Describe visual or olfactory evidence of contamination:	NO
Desacribe depth of solids in area where sample collected:	3"
Describe amount and type of debris in sample:	—
Compositing notes:	

Sample Jars Collected 2 8oz, 5 4oz

If not enough sample to fill all of the jars, then fill jars in this order:				
	Metals	One 4oz glass jar		
	PAHs/SVOCs	One 4oz glass jar		
	PCBs	One 4oz glass jar		
	TPH (two jars)	Two 4oz glass jars		
	TOC	One 4oz glass jar		

Duplicate sample collected?	NO
Duplicate sample fictitious identification # on COC:	—
Samples placed in chilled cooler? (Y)N	
Samples delivered to lab? (Y)N	Lab ID Number: FO 060748
Describe any deviations from standard procedures:	

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Attachment C
Laboratory Results

Groundwater Solutions, Inc.
55 SW Yamhill Street, Suite 400 Portland, Oregon 97204
ph: 503.239.8799 fx: 503.239.8940 e: groundwatersolutions.com

Laboratory Data QA/QC Review
Upland Source Control Investigation
City Outfall Basin 22

To: File

From: Robyn Cook, GSI

Date: September 21, 2006

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated during source control investigation sampling and analyses recently conducted by the City of Portland (City) in Outfall Basin 22. This includes a sampling round conducted in June, 2006. Solid samples were collected in the field, and a subset of each sample was sieved using a 500 micron sieve. The sieved samples were analyzed on a later date. The results of the sampling and analysis are presented in the Technical Memorandum No. OF 22-1.

The laboratory analysis for these source control program samples were completed by the City's BES laboratory and three subcontracted laboratories. The following analyses were conducted each laboratory for each of the sampling rounds:

- BES Laboratory
  - Metals (EPA Method 6020)
- Analytical Resources, Inc.
  - Grain Size Analysis (ASTM D421/422)
- Test America
  - Total Organic Carbon (EPA Method 9060MOD)
- STL Laboratory
  - Semivolatile Organics (EPA Method 8270-SIM)
  - Pesticides (EPA Method 8081A)
  - Polychlorinated Biphenyls (EPA Method 8082)

Attachment C of the Technical Memorandum No. OF 22-1 presents the BES laboratory LIMS summary report for all analyses associated with this Outfall Basin investigation and the subcontracted laboratory's data reports.

This QA/QC review is based upon the available documentation supplied from each laboratory. The QA/QC review of the analytical data consisted of reviewing the following for each laboratory report:

- Chain-of-custody complete and correct
- Analysis within holding times
- Chemicals of interest in method blanks
- Surrogate recoveries within accuracy control limits
- Laboratory duplicates within analytical accuracy control limits
- Laboratory blank spike recoveries within accuracy control limits
- Laboratory blank spike duplicate results within analytical precision control limits
- Matrix spike recoveries within accuracy control limits
- Matrix spike duplicate results within analytical precision control limits

The results of the laboratory report QA/QC review are presented for each sampling round below.

Whole Samples

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures were adequate and sample integrity was maintained through the sample collection and delivery process.

Analysis Holding Times

Semi-Volatile Organic Analyses
All samples were extracted and analyzed within the required holding times.

Pesticides Analyses
All samples were extracted and analyzed within the required holding times.

Polychlorinated Biphenyls (PCBs) Analyses
All samples were extracted and analyzed within the required holding times.

Metal Analyses
All samples were extracted and analyzed within the required holding times.

Total Organic Carbon Analyses
Only one sample had sufficient material for this analysis; this sample was analyzed within the required holding times.

Grain Size Analyses
Only one sample had sufficient material for this analysis; there are no required holding times for this analysis.

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Method Blanks

Method blanks were processed during the laboratory analysis of SVOCs, pesticides, PCBs, total organic carbon (TOC) and metals. No chemicals were detected in the method blanks associated with TOC, metals, pesticides or PCBs. One analyte (bis(2-Ethylhexyl)phthalate) was detected in a method blank associated with the SVOC analysis. The samples contained bis(2-Ethylhexyl)phthalate at concentrations significantly higher than the method blank, therefore no data are qualified.

Surrogate Recoveries

Surrogate recoveries were completed during the laboratory analysis of SVOCs, pesticides and PCBs. All surrogate recoveries were within laboratory control limits for the analysis of SVOCs and PCBs. One of the surrogates analyzed with the pesticide blank and laboratory control sample during pesticide analysis (tetrachloro-m-xylene) was outside laboratory control limits. The surrogate recovery was just outside of the range of acceptable limits, and surrogate recoveries were within laboratory control limits for the sample analyses; therefore no data are qualified.

Laboratory Control Sample Recoveries

Laboratory control samples were processed during the laboratory analyses of SVOCs, PCBs, TOC, and metals. All laboratory blank spike recoveries were within laboratory control limits.

Laboratory Control Sample Duplicates

Laboratory blank spike duplicates were processed during the laboratory analysis of PCBs and SVOCs. The relative percent difference (RPD) between the laboratory blank and the laboratory blank spike duplicates were within quality control limits for both analyses.

Matrix Spike Recoveries

Laboratory matrix spikes and matrix spike duplicates were processed during the laboratory analysis of SVOCs, PCBs and TOC. The RPDs between the matrix spike and the matrix spike duplicates were within quality control limits all three analyses.

Sieved Samples

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures were adequate and sample integrity was maintained through the sample collection and delivery process.

Analysis Holding Times

Semi-Volatile Organic Analyses

All samples were extracted and analyzed within the required holding times.

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Pesticides Analyses
All samples were extracted and analyzed within the required holding times.

Polychlorinated Biphenyls (PCBs) Analyses
All samples were extracted and analyzed within the required holding times.

Metal Analyses
All samples were extracted and analyzed within the required holding times.

Total Organic Carbon Analyses
All samples were analyzed within the required holding times.

Grain Size Analyses
There are no required holding times for this analysis.

Method Blanks

Method blanks were processed during the laboratory analysis of SVOCs, pesticides, PCBs, total organic carbon (TOC) and metals. No chemicals were detected in the method blanks associated with TOC, metals, pesticides or PCBs. Three analytes (bis(2-Ethylhexyl)phthalate, di-n-octyl phthalate and pyrene) were detected in a method blank associated with the SVOC analysis. Only phthalates are reported for this sampling event. The samples contained bis(2-ethylhexyl) phthalate at concentrations significantly higher than the method blank, therefore the samples are not qualified for that analyte. However, the samples contained di-n-octyl phthalate at concentrations that are not significantly higher than the method blank, and the samples are qualified by flagging the detected concentrations with a "J."

Surrogate Recoveries

Surrogate recoveries were completed during the laboratory analysis of SVOCs, pesticides and PCBs. All surrogate recoveries were within laboratory control limits.

Laboratory Control Sample Recoveries

Laboratory control samples were processed during the laboratory analyses of TOC, SVOCs, pesticides and PCBs. All laboratory blank spike recoveries were within laboratory control limits.

Laboratory Control Sample Duplicates

Laboratory blank spike duplicates were processed during the laboratory analysis of TOC, pesticides, PCBs and SVOCs. The relative percent difference (RPD) between the laboratory blank and the laboratory blank spike duplicates were within quality control limits for the analysis of TOC, SVOCs, pesticides and PCBs.

Matrix Spike Recoveries

Laboratory matrix spikes and matrix spike duplicates were processed during the laboratory analysis of TOC, SVOCs, pesticides, PCBs. The RPDs between the matrix spike and the matrix spike duplicates associated with SVOC, pesticide and PCB analysis were within quality control limits. The RPDs for the matrix spike and matrix spike duplicate associated with the TOC analysis exceeded quality control limits. Visual examination indicated that the RPD was outside

COP0019477

of quality control limits because the sample was not homogeneous, therefore no data are qualified.

COP0019478

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 6-27-06
Page: 1 of 1
Collected By: MJN | JXB
BCL

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 **Matrix:** OTHER

Requested Analyses

OUTFALL 22

*STL will perform Pesticide /PCB and PAH analysis
STL - Please send invoice to Howard Holmes at Northcreek and lab reports to Renee Chauvin or Jennifer Shackleford

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	General: Pesticides/PCBs*	General: PAH*	General: Total Organic Carbon	General: Grain size	Metals: Total Metals (Cd, Cu, Zn)	Field Comments
FO 060746	IL-22-AAM078-0606 upstream of node	22_1	27-Jun-06	0917	G	●	●	●	●	●	EXTRA SAMPLE ARCHIVED IN STAGING AREA FRIDGE
FO 060747	IL-22-AAM080-0606 upstream of node	22_2	27-Jun-06	1039	G	●	●	●	●	●	EXTRA SAMPLE ARCHIVED IN STAGING AREA FRIDGE
FO 060748	-22-AAP844-0606 pstream of trash rack	22_3	27-Jun-06	1238	G	●	●	●	●	●	EXTRA SAMPLE ARCHIVED IN STAGING AREA FRIDGE
FO 060749	Duplicate	Dup	27-Jun-06		G	●	●	●	●	●	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: [signature] Time: 1534	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: MICHAEL HOUSER Date: 6-27-06	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By:** 2.	**Received By:** 3.	**Received By:** 4.
Signature: [signature] Time: 1534	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Rona Kluch Date: 6/27/06	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

s:\eid\1000\1020.001\Sampdoc\Portland Harbor Water COC - OF 22.xls

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060746**	**Sample Collected:**	6/27/2006 09:17	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/27/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 3
Address/Location:	IL-22-AAM078-0606		
	UPSTREAM OF NODE	**System ID:**	AK05618
Sample Point Code:	22_1	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.64	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	75.3	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	670	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	2860	mg/Kg dry wt	50	EPA 9060 MOD	07/07/06
GRAIN SIZE BY SIEVE - ARI					
Coarse Sand (4750-2000 µm)	12.3	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (150-75 µm)	1.4	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (250-150 µm)	6.0	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (425-250 µm)	13.2	Fract %	0.1	ASTM D422	07/12/06
Gravel (1/2-3/8 in)	9.2	Fract %	0.1	ASTM D422	07/12/06
Gravel (1-3/4 in)	<0.1	Fract %	0.1	ASTM D422	07/12/06
Gravel (3/4-1/2 in)	12.2	Fract %	0.1	ASTM D422	07/12/06
Gravel (3/8 in-#4)	20.6	Fract %	0.1	ASTM D422	07/12/06
Medium Sand (2000-850 µm)	12.7	Fract %	0.1	ASTM D422	07/12/06
Medium Sand (850-425 µm)	11.9	Fract %	0.1	ASTM D422	07/12/06
Silt (<75)	0.5	Fract %	0.1	ASTM D422	07/12/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
4,4'-DDE	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
4,4'-DDT	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
Aldrin	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Alpha-BHC	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Alpha-Chlordane	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Beta-BHC	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Delta-BHC	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Dieldrin	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
Endosulfan I	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Endosulfan II	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
Endosulfan Sulfate	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
Endrin	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
Endrin Aldehyde	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06

Report Date: 08/29/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060746**	**Sample Collected:**	6/27/2006 09:17	**Sample Status:**	**COMPLETE AND VALIDATED**
		Sample Received:	06/27/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 2 of 3
Address/Location:	IL-22-AAM078-0606		
	UPSTREAM OF NODE	**System ID:**	AK05618
Sample Point Code:	22_1	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Endrin ketone	<2.1	µg/Kg dry wt	2.1	EPA 8081	07/06/06
Gamma-BHC(Lindane)	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Gamma-Chlordane	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Heptachlor	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Heptachlor Epoxide	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Methoxychlor	<11	µg/Kg dry wt	11	EPA 8081	07/06/06
Toxaphene	<110	µg/Kg dry wt	110	EPA 8081	07/06/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1221	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1232	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1242	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1248	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1254	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1260	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Acenaphthene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Acenaphthylene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Anthracene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	33	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	40	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	37	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzofluoranthenes	41	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	360	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	740	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Chrysene	44	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	10	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Diethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Dimethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	<23	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	68	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06

Report Date: 08/29/06 **Validated By:** Signature on File

COP0019481

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060746**	**Sample Collected:**	6/27/2006 09:17	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/27/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 3 of 3
Address/Location:	IL-22-AAM078-0606 UPSTREAM OF NODE	**System ID:**	AK05618
Sample Point Code:	22_1	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Fluoranthene	46	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Fluorene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	39	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Naphthalene	<5.8	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Phenanthrene	18	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Pyrene	58	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060746

Report Date: 08/29/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060747**	**Sample Collected:**	6/27/2006	10:39	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/27/06			

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 3
Address/Location:	IL-22-AAM080-0606 UPSTREAM OF NODE	**System ID:**	AK05619
Sample Point Code:	22_2	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.41	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	51.3	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	316	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	5290	mg/Kg dry wt	50	EPA 9060 MOD	07/07/06
GRAIN SIZE BY SIEVE - ARI					
Coarse Sand (4750-2000 µm)	16.1	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (150-75 µm)	1.4	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (250-150 µm)	3.6	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (425-250 µm)	11.5	Fract %	0.1	ASTM D422	07/12/06
Gravel (1/2-3/8 in)	16.3	Fract %	0.1	ASTM D422	07/12/06
Gravel (1-3/4 in)	<0.1	Fract %	0.1	ASTM D422	07/12/06
Gravel (3/4-1/2 in)	2.5	Fract %	0.1	ASTM D422	07/12/06
Gravel (3/8 in-#4)	22.9	Fract %	0.1	ASTM D422	07/12/06
Medium Sand (2000-850 µm)	13.2	Fract %	0.1	ASTM D422	07/12/06
Medium Sand (850-425 µm)	11.1	Fract %	0.1	ASTM D422	07/12/06
Silt (<75)	1.4	Fract %	0.1	ASTM D422	07/12/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
4,4'-DDE	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
4,4'-DDT	5.7	µg/Kg dry wt	2.5	EPA 8081	07/06/06
Aldrin	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Alpha-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Alpha-Chlordane	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Beta-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Delta-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Dieldrin	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
Endosulfan I	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Endosulfan II	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
Endosulfan Sulfate	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
Endrin	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
Endrin Aldehyde	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06

Report Date: 08/29/06 **Validated By:** Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060747**	**Sample Collected:**	6/27/2006 10:39	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/27/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 2 of 3
Address/Location:	IL-22-AAM080-0606		
	UPSTREAM OF NODE	**System ID:**	AK05619
Sample Point Code:	22_2	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Endrin ketone	<2.5	µg/Kg dry wt	2.5	EPA 8081	07/06/06
Gamma-BHC(Lindane)	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Gamma-Chlordane	1.9	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Heptachlor	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Heptachlor Epoxide	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Methoxychlor	<13	µg/Kg dry wt	13	EPA 8081	07/06/06
Toxaphene	<130	µg/Kg dry wt	130	EPA 8081	07/06/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1221	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1232	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1242	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1248	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1254	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1260	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	6.0	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	7.2	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Acenaphthene	58	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Acenaphthylene	<5.9	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Anthracene	76	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	610	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	710	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	520	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Benzofluoranthenes	650	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	790	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	45	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Chrysene	700	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	160	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Diethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Dimethyl phthalate	1600	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	27	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	74	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06

Report Date: 08/29/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-6600 fax (503) 823-6656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060747**	**Sample Collected:**	6/27/2006	10:39	**Sample Status:**	**COMPLETE AND VALIDATED**
		Sample Received:	06/27/06			

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 3 of 3
Address/Location:	IL-22-AAM080-0606		
	UPSTREAM OF NODE	**System ID:**	AK05619
Sample Point Code:	22_2	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Fluoranthene	1000	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Fluorene	42	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	600	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Naphthalene	17	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Phenanthrene	640	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06
Pyrene	870	µg/Kg dry wt	5.9	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060747

Report Date: 08/29/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5658

LABORATORY ANALYSIS REPORT

Sample ID: FO060748 **Sample Collected:** 6/27/2006 12:38 **Sample Received:** 06/27/06 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 3
Address/Location:	IL-22-AAP844-0606		
	UPSTREAM OF TRASH RACK	**System ID:**	AK05620
Sample Point Code:	22_3	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.18	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	35.9	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	79.6	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	16400	mg/Kg dry wt	50	EPA 9060 MOD	07/07/06
GRAIN SIZE BY ASTM - ARI					
Clay (<3.2 µm)	2.7	Fract %	0.1	ASTM D421/422	07/12/06
Coarse Sand (4750-2000 µm)	10.0	Fract %	0.1	ASTM D421/422	07/12/06
Fine Sand (425-75 µm)	16.9	Fract %	0.1	ASTM D421/422	07/12/06
Gravel (>4750 µm)	29.8	Fract %	0.1	ASTM D421/422	07/12/06
Medium Sand (2000-425 µm)	14.2	Fract %	0.1	ASTM D421/422	07/12/06
Silt (13-9 µm)	1.3	Fract %	0.1	ASTM D421/422	07/12/06
Silt (22-13 µm)	2.2	Fract %	0.1	ASTM D421/422	07/12/06
Silt (32-22 µm)	5.8	Fract %	0.1	ASTM D421/422	07/12/06
Silt (7-3.2 µm)	<0.1	Fract %	0.1	ASTM D421/422	07/12/06
Silt (75-32 µm)	15.8	Fract %	0.1	ASTM D421/422	07/12/06
Silt (9-7 µm)	1.3	Fract %	0.1	ASTM D421/422	07/12/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
4,4'-DDE	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
4,4'-DDT	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
Aldrin	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Alpha-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Alpha-Chlordane	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Beta-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Delta-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Dieldrin	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
Endosulfan I	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Endosulfan II	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
Endosulfan Sulfate	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
Endrin	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
Endrin Aldehyde	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06
Endrin ketone	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/06/06

Report Date: 08/29/06 Validated By: Signature on File

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO060748 **Sample Collected:** 6/27/2006 12:38 **Sample Received:** 06/27/06 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 2 of 3
Address/Location:	IL-22-AAP844-0606		
	UPSTREAM OF TRASH RACK	**System ID:**	AK05620
Sample Point Code:	22_3	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Gamma-BHC(Lindane)	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Gamma-Chlordane	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Heptachlor	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Heptachlor Epoxide	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/06/06
Methoxychlor	<13	µg/Kg dry wt	13	EPA 8081	07/06/06
Toxaphene	<130	µg/Kg dry wt	130	EPA 8081	07/06/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1221	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1232	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1242	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1248	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1254	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1260	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	<6.2	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	<6.2	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Acenaphthene	<6.2	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Acenaphthylene	<6.2	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Anthracene	6.9	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	44	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	63	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	59	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Benzofluoranthenes	56	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	950	µg/Kg dry wt	25	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	<25	µg/Kg dry wt	25	EPA 8270-SIM	07/07/06
Chrysene	62	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	10	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Diethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Dimethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	<25	µg/Kg dry wt	25	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	<25	µg/Kg dry wt	25	EPA 8270-SIM	07/07/06
Fluoranthene	65	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Fluorene	<6.2	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	65	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06

Report Date: 08/29/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060748**	**Sample Collected:**	6/27/2006 12:38	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/27/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 3 of 3
Address/Location:	IL-22-AAP844-0606 UPSTREAM OF TRASH RACK	**System ID:**	AK05620
Sample Point Code:	22_3	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Naphthalene	<6.2	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Phenanthrene	29	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06
Pyrene	69	µg/Kg dry wt	6.2	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060748

Report Date: 08/29/06 Validated By: Signature on File

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO060749 **Sample Collected:** 6/27/2006 00:00 **Sample Received:** 06/27/06 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: DUPLICATE

Report Page: Page 1 of 3

System ID: AK05621
Sample Point Code: DUP
EID File # : 1020.001
Sample Type: GRAB
LocCode: PORTHARI
Sample Matrix: SEDIMENT
Collected By: MJH/JXB/BCL

Comments:
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.48	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	376	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	336	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	4430	mg/Kg dry wt	50	EPA 9060 MOD	07/07/06
GRAIN SIZE BY SIEVE - ARI					
Coarse Sand (4750-2000 µm)	14.5	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (150-75 µm)	1.1	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (250-150 µm)	4.3	Fract %	0.1	ASTM D422	07/12/06
Fine Sand (425-250 µm)	10.1	Fract %	0.1	ASTM D422	07/12/06
Gravel (1/2-3/8 in)	9.2	Fract %	0.1	ASTM D422	07/12/06
Gravel (1-3/4 in)	3.5	Fract %	0.1	ASTM D422	07/12/06
Gravel (3/4-1/2 in)	17.1	Fract %	0.1	ASTM D422	07/12/06
Gravel (3/8 in-#4)	17.9	Fract %	0.1	ASTM D422	07/12/06
Medium Sand (2000-850 µm)	11.9	Fract %	0.1	ASTM D422	07/12/06
Medium Sand (850-425 µm)	10.1	Fract %	0.1	ASTM D422	07/12/06
Silt (<75)	0.4	Fract %	0.1	ASTM D422	07/12/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
4,4'-DDE	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
4,4'-DDT	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
Aldrin	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Alpha-BHC	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Alpha-Chlordane	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Beta-BHC	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Delta-BHC	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Dieldrin	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
Endosulfan I	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Endosulfan II	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
Endosulfan Sulfate	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
Endrin	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
Endrin Aldehyde	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06

Report Date: 08/29/06 **Validated By:** Signature on File

COP0019489

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5658

LABORATORY ANALYSIS REPORT

Sample ID: FO060749 **Sample Collected:** 6/27/2006 00:00 **Sample Received:** 06/27/06 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: DUPLICATE

Report Page: Page 2 of 3

System ID: AK05621
Sample Point Code: DUP
EID File # : 1020.001
Sample Type: GRAB
LocCode: PORTHARI
Sample Matrix: SEDIMENT
Collected By: MJH/JXB/BCL

Comments:
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Endrin ketone	<2.3	µg/Kg dry wt	2.3	EPA 8081	07/06/06
Gamma-BHC(Lindane)	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Gamma-Chlordane	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Heptachlor	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Heptachlor Epoxide	<1.1	µg/Kg dry wt	1.1	EPA 8081	07/06/06
Methoxychlor	<11	µg/Kg dry wt	11	EPA 8081	07/06/06
Toxaphene	<110	µg/Kg dry wt	110	EPA 8081	07/06/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1221	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1232	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1242	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1248	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1254	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
Aroclor 1260	<11	µg/Kg dry wt	11	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	<5.6	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	<5.6	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Acenaphthene	<5.6	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Acenaphthylene	6.7	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Anthracene	<5.6	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	92	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	110	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	84	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Benzofluoranthenes	110	µg/Kg dry wt	11	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	380	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	<23	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Chrysene	140	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	23	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Diethyl phthalate	<11	µg/Kg dry wt	11	EPA 8270-SIM	07/07/06
Dimethyl phthalate	<11	µg/Kg dry wt	11	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	<23	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	34	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06

Report Date: 08/29/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060749**	**Sample Collected:**	6/27/2006 00:00	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/27/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 3 of 3
Address/Location:	DUPLICATE		
		System ID:	AK05621
Sample Point Code:	DUP	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH/JXB/BCL

Comments:

QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. One phthalate was detected in the method blank but at insignificant concentration compared to the sample. LAB: Grain size analysis for this sample was by sieve only; the sample did not contain enough fines for the hydrometer portion of the analysis.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Fluoranthene	80	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Fluorene	<5.6	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	100	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Naphthalene	<5.6	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Phenanthrene	17	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06
Pyrene	98	µg/Kg dry wt	5.6	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060749

Report Date: 08/29/06 Validated By: Signature on File

TestAmerica
ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

August 24, 2006

Jennifer Shackelford
City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 06/28/06 15:55. The following list is a summary of the Work Orders contained in this report, generated on 08/24/06 16:31.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
PPF1182	Portland Harbor	36238

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/24/06 16:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FO 060746	PPF1182-01	Soil	06/27/06 09:17	06/28/06 15:55
FO 060747	PPF1182-02	Soil	06/27/06 10:39	06/28/06 15:55
FO 060748	PPF1182-03	Soil	06/27/06 12:38	06/28/06 15:55
FO 060749	PPF1182-04	Soil	06/27/06 00:00	06/28/06 15:55

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name: **Portland Harbor**	
6543 N. Burlington Ave.	Project Number: 36238	Report Created:
Portland, OR 97203	Project Manager: Jennifer Shackelford	08/24/06 16:31

Conventional Chemistry Parameters by APHA/EPA Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PPF1182-01 (FO 060746)		**Soil**			**Sampled: 06/27/06 09:17**					
Total Organic Carbon	EPA 9060 mod.	**2860**	-----	569	mg/kg dry	1x	6G14068	07/07/06 21:50	07/14/06 18:19	
PPF1182-02 (FO 060747)		**Soil**			**Sampled: 06/27/06 10:39**					
Total Organic Carbon	EPA 9060 mod.	**5290**	-----	661	mg/kg dry	1x	6G14068	07/07/06 21:50	07/14/06 18:52	
PPF1182-03 (FO 060748)		**Soil**			**Sampled: 06/27/06 12:38**					
Total Organic Carbon	EPA 9060 mod.	**16400**	-----	678	mg/kg dry	1x	6G14068	07/07/06 21:50	07/14/06 18:58	
PPF1182-04 (FO 060749)		**Soil**			**Sampled: 06/27/06 00:00**					
Total Organic Carbon	EPA 9060 mod.	**4430**	-----	587	mg/kg dry	1x	6G15011	07/07/06 20:48	07/15/06 13:06	

TestAmerica - Portland, OR

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Howard Holmes, Project Manager

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ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name: **Portland Harbor**	
6543 N. Burlington Ave.	Project Number: 36238	Report Created:
Portland, OR 97203	Project Manager: Jennifer Shackelford	08/24/06 16:31

Physical Parameters by APHA/ASTM/EPA Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PPF1182-01 (FO 060746)		**Soil**			**Sampled: 06/27/06 09:17**					
Dry Weight	BSOPSPL003R08	**87.9**	-----	1.00	%	1x	6G07017	07/07/06 08:34	07/08/06 00:00	
PPF1182-02 (FO 060747)		**Soil**			**Sampled: 06/27/06 10:39**					
Dry Weight	BSOPSPL003R08	**75.6**	-----	1.00	%	1x	6G07017	07/07/06 08:34	07/08/06 00:00	
PPF1182-03 (FO 060748)		**Soil**			**Sampled: 06/27/06 12:38**					
Dry Weight	BSOPSPL003R08	**73.7**	-----	1.00	%	1x	6G07017	07/07/06 08:34	07/08/06 00:00	
PPF1182-04 (FO 060749)		**Soil**			**Sampled: 06/27/06 00:00**					
Dry Weight	BSOPSPL003R08	**85.2**	-----	1.00	%	1x	6G07017	07/07/06 08:34	07/08/06 00:00	

TestAmerica - Portland, OR

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Howard Holmes, Project Manager

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City of Portland Water Pollution Laboratory	Project Name: **Portland Harbor**	
6543 N. Burlington Ave.	Project Number: 36238	Report Created:
Portland, OR 97203	Project Manager: Jennifer Shackelford	08/24/06 16:31

Conventional Chemistry Parameters by APHA/EPA Methods - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 6G14068 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6G14068-BLK1)								Extracted: 07/14/06 17:13						
Total Organic Carbon	EPA 9060 mod.	ND	---	500	mg/kg wet	1x	--	--	--	--	--	--	07/14/06 17:13	
LCS (6G14068-BS1)								Extracted: 07/07/06 21:50						
Total Organic Carbon	EPA 9060 mod.	25700	---	500	mg/kg wet	1x	--	29900	86.0%	(72-130)	--	--	07/14/06 17:19	
Duplicate (6G14068-DUP1)							QC Source: BPG0022-01		Extracted: 07/07/06 21:50					
Total Organic Carbon	EPA 9060 mod.	16600	---	753	mg/kg dry	1x	8050	--	--	--	69.4%	(35)	07/14/06 17:35	Q-14
Duplicate (6G14068-DUP2)							QC Source: BPG0023-01		Extracted: 07/07/06 21:50					
Total Organic Carbon	EPA 9060 mod.	15600	---	942	mg/kg dry	1x	11500	--	--	--	30.3%	(35)	07/14/06 17:57	
Duplicate (6G14068-DUP3)							QC Source: BPG0024-01		Extracted: 07/07/06 21:50					
Total Organic Carbon	EPA 9060 mod	22400	---	947	mg/kg dry	1x	23200	--	--	--	3.51%	(35)	07/14/06 18:12	
Duplicate (6G14068-DUP4)							QC Source: PPF1182-01		Extracted: 07/07/06 21:50					
Total Organic Carbon	EPA 9060 mod.	3160	---	569	mg/kg dry	1x	2860	--	--	--	9.97%	(35)	07/14/06 18:45	
Matrix Spike (6G14068-MS1)							QC Source: BPG0022-01		Extracted: 07/07/06 21:50					
Total Organic Carbon	EPA 9060 mod.	25600	---	753	mg/kg dry	1x	8050	12900	136%	(40-160)	--	--	07/14/06 17:42	

QC Batch: 6G15011 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6G15011-BLK1)								Extracted: 07/15/06 12:50						
Total Organic Carbon	EPA 9060 mod.	ND	---	500	mg/kg wet	1x	--	--	--	--	--	--	07/15/06 12:50	
LCS (6G15011-BS1)								Extracted: 07/07/06 20:48						
Total Organic Carbon	EPA 9060 mod.	27600	---	500	mg/kg wet	1x	--	29900	92.3%	(72-130)	--	--	07/15/06 12:57	
Duplicate (6G15011-DUP1)							QC Source: BPG0064-01		Extracted: 07/07/06 20:48					
Total Organic Carbon	EPA 9060 mod.	18500	---	1150	mg/kg dry	1x	20800	--	--	--	11.7%	(35)	07/15/06 13:27	
Matrix Spike (6G15011-MS1)							QC Source: BPG0064-01		Extracted: 07/07/06 20:48					

TestAmerica - Portland, OR

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Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/24/06 16:31

Conventional Chemistry Parameters by APHA/EPA Methods - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 6G15011 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (6G15011-MS1)					**QC Source: BPG0064-01**				**Extracted: 07/07/06 20:48**					
Total Organic Carbon	EPA 9060 mod.	28800	---	1150	mg/kg dry	1x	20800	9540	83.9%	(40-160)	--	--	07/15/06 13:36	

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City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/24/06 16:31

Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 6G07017 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6G07017-BLK1)													**Extracted: 07/07/06 08:34**	
Dry Weight	BSOPSPL00 3R08	100	---	1.00	%	1x	--	--	--	--	--	--	07/08/06 00:00	

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Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/24/06 16:31

Notes and Definitions

Report Specific Notes:

Q-14 - Visual examination indicates the RPD and/or matrix spike recovery is outside the control limit due to a non-homogeneous sample matrix.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA - Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

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TestAmerica
ANALYTICAL TESTING CORPORATION

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 ✓
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PPF1182

Called Test Amer @ 0850 on 6/28. RNK

CLIENT: City of Portland
INVOICE TO: Charles Lytle
REPORT TO: Jennifer Shackelford
ADDRESS:
PHONE: FAX:
P.O. NUMBER: 36238
PROJECT NAME: Portland Harbor
PROJECT NUMBER: Inline Samp
SAMPLED BY:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [X] STD [7] [5] [4] [3] [2] [1] [<1]
Petroleum Hydrocarbon Analyses: [5] STD. [4] [3] [2] [1] [<1]
[OTHER] Specify.
* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	Pest/PCBs EPA 8081 - LOW-LEVEL (*)	PAH 8270-SIM LOW-LEVEL (*)	TOC	Grain Size	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	FO 060746	6/27/06 0917		X	X	X	X	S	5		
2	FO 060747	1039		X	X	X	X	S	5		
3	FO 060748	1238		X	X	X	X	S	5		
4	FO 060749	—		X	X	X	X	S	5		
5											
6											
7											
8											
9											
10											

RELEASED BY: Kona Klnek DATE 6/28/06
PRINT NAME: Kona Klnek FIRM: City of Portland TIME 1430
RECEIVED BY: Bob F DATE 6/28/06
PRINT NAME: Bob F FIRM: TAP TIME 14:30
RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY: DATE: lab
PRINT NAME: FIRM: TIME: 15.55

ADDITIONAL REMARKS: (*) Send Low-Level Pesticides/PCBs and Low-Level PAH to STL

TEMP: 1.7

COC REV 03/2004

PAGE 1 OF 1

COP0019500

TAT: _____

Non-Conformances?
Circle Y or N
(If Y, see other side)

TEST AMERICA SAMPLE RECEIPT CHECKLIST

Received By: (applies to temp at receipt)
Date: 6/28/06
Time: 14:30
Initials: JH

Logged-in By:
Date: 6/27
Initials: LF

Unpacked/Labeled By:
Date: 6/28
Initials: LF

Cooler ID: ____ (__ of __)

Work Order No. PPF1182
Client: City of Portland
Project: _____

Container Type:
1 Cooler
___ Box
___ None/Other _____

COC Seals:
___ Ship. Container ___ Sign By
___ On Bottles ___ Date
✓ None

Packing Material
___ Bubble Bags ___ Styrofoam
___ Foam Packs
___ None/Other (2) bagged

Refrigerant:
___ Gel Ice Pack _____ ___ None
✓ Loose Ice
___ None/Other _____

Received Via: Bill#
___ Fed Ex ___ Client
___ UPS ✓ NCA Courier
___ DHL ___ Mid Valley
___ Senvoy ___ TDP
___ GS ___ Other _____

Cooler Temperature (IR): 1.7 °C Plastic (Glass) (circle one) (Frozen filters, Tedlars and aqueous Metals exempt)

Temperature Blank? _____ °C or NA

Trip Blank? Y or N or NA

Sample Containers:		ID			ID
Intact?	Y or N	_____	Metals Preserved?	Y or N or NA	_____
Provided by NCA?	Y or N	_____	Client QAPP Preserved?	Y or N or NA	_____
Correct Type?	Y or N	_____	Adequate Volume? (for tests requested)	Y or N	_____
#Containers match COC?	Y or N	_____	Water VOAs: Headspace?	Y or N or NA	_____
IDs/time/date match COC?	Y or N	_____	Comments:		
Hold Times in hold?	Y or N	_____			

PROJECT MANAGEMENT

Is the Chain of Custody complete? Y or N If N, circle the items that were incomplete

Comments,Problems _____

Total access set up? Y or N
Has client been contacted regarding non-conformances? Y or N If Y, ____/____ (Date / Time)

PM Initials _____ Date: _____ Time: _____

(rev 3. 09/12/05)

COP0019501

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 13, 2006

Mr. Howard Holmes
Test America, Inc.
9405 SW Nimbus Ave.
Beaverton, OR 97008

Subject: Project No.: PPF1182;
ARI Project No.: JO49

Dear Mr. Holmes;

The following pages provide the information you requested. The report consists of tables, plots, and a narrative describing the testing methods. Please call me to discuss any questions, or comments you may have on the data or its presentation.

Best Regards,
Analytical Resources Incorporated

Harold Benny
Geotechnical Division Manager
206-695-6246
haroldb@arilabs.com

Enclosures

cc: File JO49

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Test America	ARI Project No.: JO49
Client Project: PPF1182	

Case Narrative

1. Four samples were received on June 30, 2006, and were in good condition.
2. The samples were tested for grain size distribution according to ASTM D-422.
3. A visual examination of the grain size was performed on each sample. It was determined that all the samples would be tested by sieve only method except for PPF1182-03. This sample contained enough fines to be tested by hydrometer and sieve, and was prepared using the dry prep method ASTM D-421.
4. A specific gravity of 2.65 was assumed for the calculations. This appeared to be a reasonable assumption.
5. A "milkshake" mixer was used to disperse the hydrometer portion of the sample.
6. The data is provided in summary tables and plots.
7. There were no perceived anomalies to the samples or testing.

Approved by: Taylor McKenzie Date: 7/12/06
Title: Lead Technician

SUBCONTRACT ORDER

J049

TestAmerica - Portland, OR

PPF1182

5.2°

SENDING LABORATORY:

TestAmerica - Portland, OR
9405 SW Nimbus Ave.
Beaverton, OR 97008
Phone: (503) 906-9200
Fax: (503) 906-9210
Project Manager: Howard Holmes

RECEIVING LABORATORY:

Rosa Environmental & Geotechnical Laboratory/ARI
4611 S. 134th Place Suite 100
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: PPF1182-01	**Soil**	**Sampled:06/27/06 09:17**		
Grain Size (ASTM) - SUB	07/12/06 23:59	12/24/06 09:17		
Containers Supplied:				
8 oz. jar (A)				
Sample ID: PPF1182-02	**Soil**	**Sampled:06/27/06 10:39**		
Grain Size (ASTM) - SUB	07/12/06 23:59	12/24/06 10:39		
Containers Supplied:				
8 oz. jar (A)				
Sample ID: PPF1182-03	**Soil**	**Sampled:06/27/06 12:38**		
Grain Size (ASTM) - SUB	07/12/06 23:59	12/24/06 12:38		
Containers Supplied:				
8 oz. jar (A)				
Sample ID: PPF1182-04	**Soil**	**Sampled:06/27/06 00:00**		
Grain Size (ASTM) - SUB	07/12/06 23:59	12/24/06 00:00		
Containers Supplied:				
8 oz. jar (A)				

Released By	Date	Received By	Date
[signature]	6/28/06	[signature]	6/30/06 1015

COP0019504

Cooler Receipt Form

ANALYTICAL RESOURCES INCORPORATED

RI Client: TEST Am Project Name: _____

OC NO.: _____ Delivered By: UPS

racking NO.: _____ Date: _____

RI Job No.: J049 Lims NO.: _____

reliminary Examination Phase:

1. Were intact, properly signed and dated custody seals attached To the outside of the cooler? ..... YES **NO**
2. Were custody papers included with the cooler ..... **YES** NO
3. Were custody papers properly filled out (ink, signed etc.)? ..... **YES** NO
4. Complete custody forms and attach all shipping documents ..... OK **NA**

ooler Accepted BY: Bob Congles Date: 6/30/06 Time: 1015

og-IN Phase:

5. Was a temperature blank include in the cooler? ..... YES **NO**
6. Record Cooler Temperature ..... 5.2 °C
7. What kind of packing material was used? ..... ICE
8. Was sufficient ice used (if appropriate)? ..... **YES** NO
9. Were all bottles sealed in separate plastic bags? ..... YES **NO**
10. Did all bottles arrive in good condition (unbroken)? ..... **YES** NO
11. Were all bottle labels complete and legible? ..... **YES** NO
12. Did all bottle labels and tags agree with custody papers? ..... **YES** NO
13. Were all bottles used correct for the requested analyses? ..... **YES** NO
14. Do any of the analyses (bottles) require preservative? (If so, Preservation checklist must be attached) ..... YES **NO**
15. Were all VOA vials free of air bubbles? ..... ~~YES~~ ~~NO~~
16. Was sufficient amount of sample sent in each bottle? ..... **YES** NO
17. Notify Project Manager of any discrepancies or concerns ..... **OK** NA

ooler Opened By: Bob Congles Date: 6/30/06 Time 1015

plain any discrepancies or negative responses:

_____

16F Cooler Receipt Form Revision7(1/10/01)

ANALYTICAL RESOURCES INCORPORATED

Test America
PPF1182

Percent Finer Than Indicated Size, By ASTM D422

Sample ID	Moisture Content (%)	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PPF1182-01	13.4	100.0	100.0	87.8	78.6	58.1	45.7	33.1	21.2	7.9	2.0	0.5
PPF1182-02	30.1	100.0	100.0	97.5	81.2	58.3	42.2	28.9	17.8	6.3	2.8	1.4
PPF1182-04	13.0	100.0	96.5	79.4	70.3	52.4	37.9	26.0	15.9	5.8	1.5	0.4

JO49

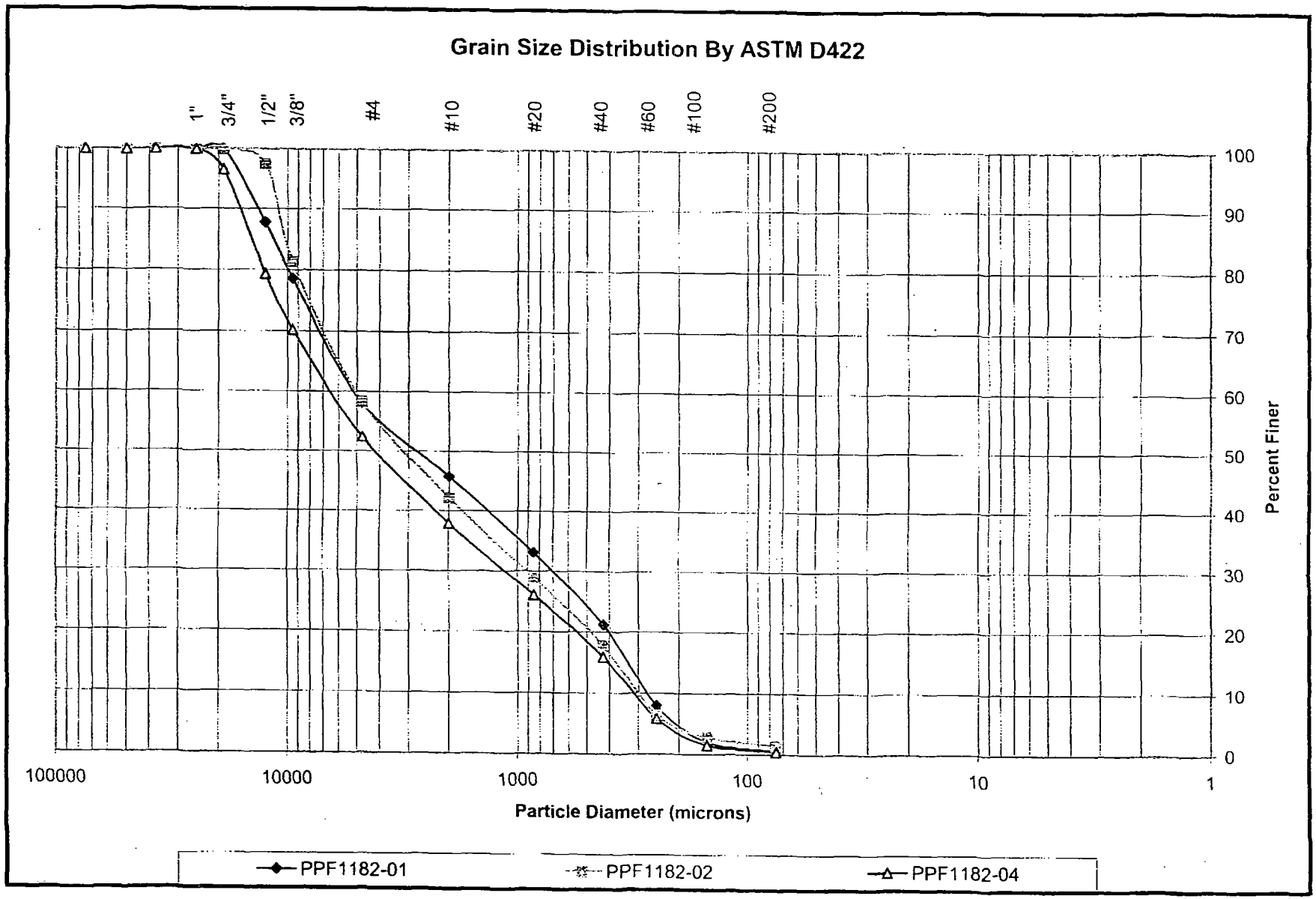
Test America
PPF1182

Percent Retained in Each Size Fraction, By ASTM D422

Sieve Size (microns)	1-3/4"	3/4-1/2"	1/2-3/8"	3/8-#4	4750-2000	2000-850	850-425	425-250	250-150	150-75	<75
PPF1182-01	0.0	12.2	9.2	20.6	12.3	12.7	11.9	13.2	6.0	1.4	0.5
PPF1182-02	0.0	2.5	16.3	22.9	16.1	13.2	11.1	11.5	3.6	1.4	1.4
PPF1182-04	3.5	17.1	9.2	17.9	14.5	11.9	10.1	10.1	4.3	1.1	0.4

JO49

ANALYTICAL RESOURCES INCORPORATED



COP0019508

ANALYTICAL RESOURCES INCORPORATED

Test America
PPF1182

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
PPF1182-03	100.0	90.3	83.1	70.2	60.2	52.2	46.0	40.7	36.1	29.1	13.3	7.5	5.3	4.0	2.7	2.7	2.7

Testing performed according to ASTM D421/D422

JO49

ANALYTICAL RESOURCES INCORPORATED

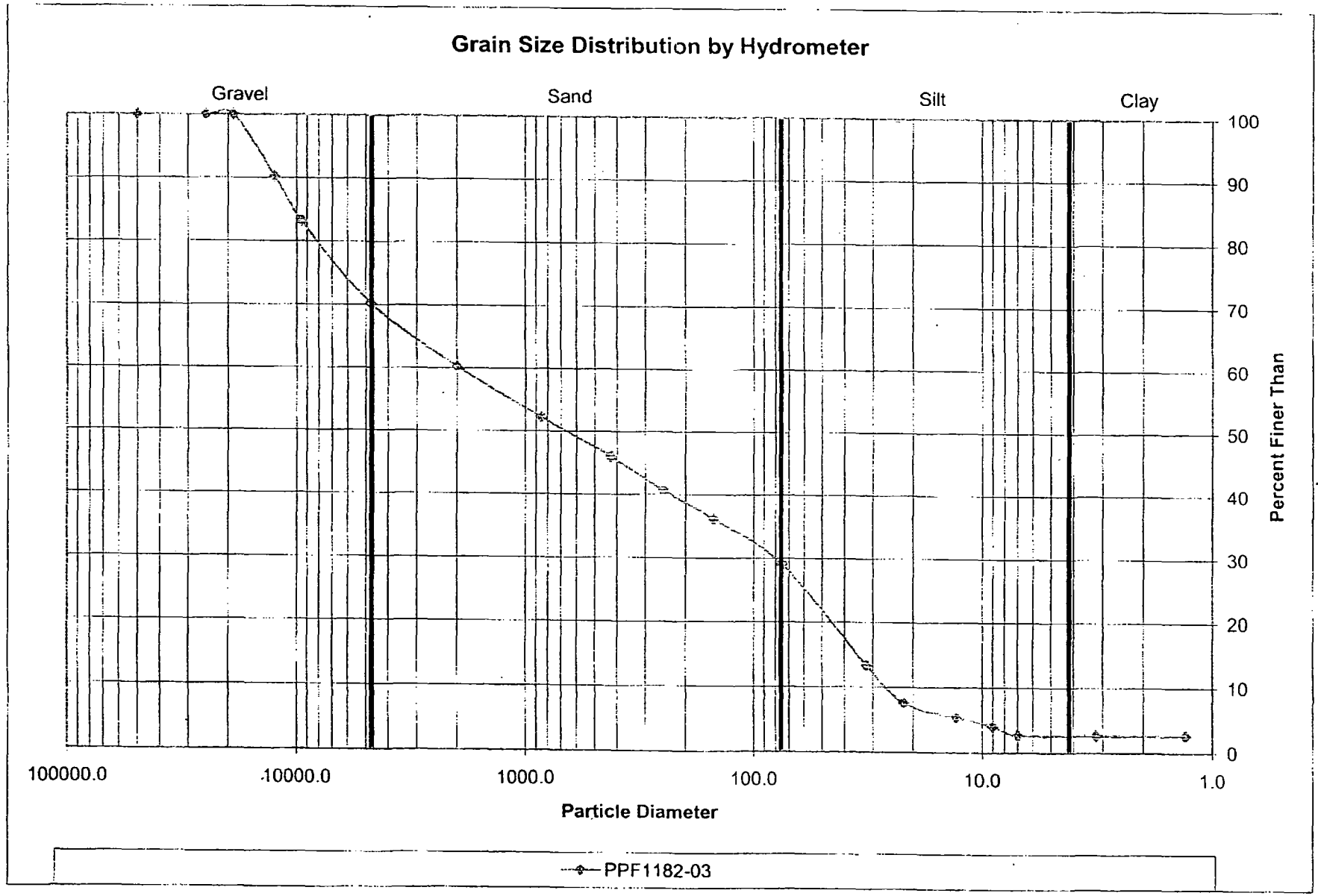
Test America
PPF1182

Percent Retained in Each Size Fraction

Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
Particle Size (microns)	> 4750	4750-2000	2000-425	425-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
PPF1182-03	29.8	10.0	14.2	16.9	15.8	5.8	2.2	1.3	1.3	0.0	2.7

JO49

ANALYTICAL RESOURCES INCORPORATED



TestAmerica
ANALYTICAL TESTING CORPORATION

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 ✓
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PPF1182

Called Test Amer. @ 0850 on 6/28. RAK

CLIENT: City of Portland

INVOICE TO: Charles Lytle

REPORT TO: Jennifer Shackelford
ADDRESS:

PHONE: FAX:

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor
PROJECT NUMBER: Inline Samp.
SAMPLED BY:

TURNAROUND REQUEST
in Business Days *
Organic & Inorganic Analyses: [X] STD. [7] [5] [4] [3] [2] [1] [<1]
Petroleum Hydrocarbon Analyses: [5] STD. [4] [3] [2] [1] [<1]
[OTHER] Specify:
* Turnaround Requests less than standard may incur Rush Charges.

#	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	Pest/PCBs EPA 8081 LOW LEVEL (*)	PAH Low-Level BCT0-SIM (*)	TOC	Grain Size	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	FO 060746	6/27/06 0917		X	X	X	X	S	5		
2	FO 060747	1039		X	X	X	X	S	5		
3	FO 060748	1238		X	X	X	X	S	5		
4	FO 060749	—		X	X	X	X	S	5		
5											
6											
7											
8											
9											
10											

REQUESTED ANALYSES

RELEASED BY: Rona Klnek DATE: 6/28/06
PRINT NAME: Rona Klnek FIRM: City of Portland TIME: 1430
RECEIVED BY: Bob F DATE: 6/28/06
PRINT NAME: Bob F FIRM: TAP TIME: 14:30

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY DATE: lab
PRINT NAME: FIRM. TIME. 15:55

ADDITIONAL REMARKS: (*) Send Low-Level Pesticides/PCBs and Low-Level PAH to STL.

TEMP: 1.7

COC REV 09/2004

PAGE 1 OF 1

COP0019512

SEVERN TRENT STL

ANALYTICAL REPORT

Job Number: 580-2965-1

Job Description: PPF1182

For:
TestAmerica Analytical Testing Corp.
9405 SW Nimbus Ave
Beaverton, OR 97008

Attention: Howard Holmes

Tom Coyner
Project Manager I
tcoyner@stl-inc.com
07/25/2006

Project Manager: Tom Coyner

STL Seattle is a part of Severn Trent Laboratories, Inc.

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

Case Narrative for project: 580-2965

CHLORINATED PESTICIDES

Samples 580-2965-1 through 580-2965-4 were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A. The samples were prepared on 07/06/2006 and analyzed on 07/12/2006, which was within the method required holding time. **Tetrachloro-m-xylene had a recovery of 129%, which failed the LCS recovery criteria of 49 - 123%.**

----LCS 580-8618/2-A-----

Tetrachloro-m-xylene had a recovery of 130%, which failed the LCS recovery criteria of 49 - 123%.

No difficulties were encountered during the chlorinated pesticides analyses.

POLYCHLORINATED BIPHENYLS (PCB'S)

Samples 580-2965-1 through 580-2965-4 were analyzed for polychlorinated biphenyls (PCB's) in accordance with EPA SW-846 Method 8082. The samples were prepared on 07/07/2006 and analyzed on 07/10/2006, which was within the method required holding time. No difficulties were encountered during the PCB analyses.

SEMIVOLATILE ORGANICS

Samples 580-2965-1 through 580-2965-4 were analyzed for semivolatile organics in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/07/2006 and analyzed on 07/14/2006 and 07/25/2006, which was within the method required holding time. Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-8685/1-A at a level exceeding the reporting limit. The associated sample results have been flagged "B".

COP0019514

METHOD SUMMARY

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)	STL-SEA	SW846 8270C	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Organochlorine Pesticides by Gas Chromatography	STL-SEA	SW846 8081A	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	STL-SEA	SW846 8082	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Percent Moisture	STL-SEA	EPA PercentMoisture	

LAB REFERENCES:

STL-SEA = STL-Seattle

METHOD REFERENCES:

EPA - US Environmental Protection Agency

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-2965-1	PPF1182-01	Solid	06/27/2006 0917	06/30/2006 0900
580-2965-2	PPF1182-02	Solid	06/27/2006 1039	06/30/2006 0900
580-2965-3	PPF1182-03	Solid	06/27/2006 1238	06/30/2006 0900
580-2965-4	PPF1182-04	Solid	06/27/2006 0000	06/30/2006 0900

COP0019516

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-01**

Lab Sample ID: 580-2965-1 Date Sampled: 06/27/2006 0917
Client Matrix: Solid % Moisture: 13.9 Date Received: 06/30/2006 0900

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C Analysis Batch: 580-8140 Instrument ID: SEA023
Preparation: 3550B Prep Batch: 580-8685 Lab File ID: HP01938.D
Dilution: 1.0 Initial Weight/Volume: 10.0493 g
Date Analyzed: 07/14/2006 1656 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1341 Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND		5.8
2-Methylnaphthalene		ND		5.8
1-Methylnaphthalene		ND		5.8
Acenaphthylene		ND		5.8
Acenaphthene		ND		5.8
Fluorene		ND		5.8
Phenanthrene		18		5.8
Anthracene		ND		5.8
Fluoranthene		46		5.8
Pyrene		58		5.8
Benzo[a]anthracene		33		5.8
Chrysene		44		5.8
Benzofluoranthene		41		12
Benzo[a]pyrene		40		5.8
Indeno[1,2,3-cd]pyrene		39		5.8
Dibenz(a,h)anthracene		10		5.8
Benzo[g,h,i]perylene		37		5.8
Bis(2-ethylhexyl) phthalate		360	B	23
Butyl benzyl phthalate		740		23
Diethyl phthalate		ND		12
Dimethyl phthalate		ND		12
Di-n-butyl phthalate		ND		23
Di-n-octyl phthalate		68		23

Surrogate	%Rec	Acceptance Limits
Nitrobenzene-d5	98	38 - 141
2-Fluorobiphenyl	89	42 - 140
Terphenyl-d14	83	42 - 151

COP0019517

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-02**

Lab Sample ID: 580-2965-2 Date Sampled: 06/27/2006 1039
Client Matrix: Solid % Moisture: 22.3 Date Received: 06/30/2006 0900

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C Analysis Batch: 580-8140 Instrument ID: SEA023
Preparation: 3550B Prep Batch: 580-8685 Lab File ID: HP01958.D
Dilution: 1.0 Initial Weight/Volume: 10.8685 g
Date Analyzed: 07/25/2006 0932 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1341 Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Naphthalene		17		5.9
2-Methylnaphthalene		7.2		5.9
1-Methylnaphthalene		6.0		5.9
Acenaphthylene		ND		5.9
Acenaphthene		58		5.9
Fluorene		42		5.9
Phenanthrene		640		5.9
Anthracene		76		5.9
Fluoranthene		1000		5.9
Pyrene		870		5.9
Benzo[a]anthracene		610		5.9
Chrysene		700		5.9
Benzofluoranthene		650		12
Benzo[a]pyrene		710		5.9
Indeno[1,2,3-cd]pyrene		600		5.9
Dibenz(a,h)anthracene		160		5.9
Benzo[g,h,i]perylene		520		5.9
Bis(2-ethylhexyl) phthalate		790		24
Butyl benzyl phthalate		45		24
Diethyl phthalate		ND		12
Dimethyl phthalate		1600		12
Di-n-butyl phthalate		27		24
Di-n-octyl phthalate		74		24

Surrogate	%Rec	Acceptance Limits
Nitrobenzene-d5	98	38 - 141
2-Fluorobiphenyl	94	42 - 140
Terphenyl-d14	94	42 - 151

COP0019518

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-03**

Lab Sample ID: 580-2965-3 Date Sampled: 06/27/2006 1238
Client Matrix: Solid % Moisture: 26.5 Date Received: 06/30/2006 0900

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C Analysis Batch: 580-8140 Instrument ID: SEA023
Preparation: 3550B *Prep Batch: 580-8685* *Lab File ID:* HP01956.D
Dilution: 1.0 Initial Weight/Volume: 10.9233 g
Date Analyzed: 07/25/2006 0847 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1341 Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND		6.2
2-Methylnaphthalene		ND		6.2
1-Methylnaphthalene		ND		6.2
Acenaphthylene		ND		6.2
Acenaphthene		ND		6.2
Fluorene		ND		6.2
Phenanthrene		29		6.2
Anthracene		6.9		6.2
Fluoranthene		65		6.2
Pyrene		69		6.2
Benzo[a]anthracene		44		6.2
Chrysene		62		6.2
Benzofluoranthene		56		12
Benzo[a]pyrene		63		6.2
Indeno[1,2,3-cd]pyrene		65		6.2
Dibenz(a,h)anthracene		10		6.2
Benzo[g,h,i]perylene		59		6.2
Bis(2-ethylhexyl) phthalate		950		25
Butyl benzyl phthalate		ND		25
Diethyl phthalate		ND		12
Dimethyl phthalate		ND		12
Di-n-butyl phthalate		ND		25
Di-n-octyl phthalate		ND		25

Surrogate	%Rec	Acceptance Limits
Nitrobenzene-d5	110	38 - 141
2-Fluorobiphenyl	117	42 - 140
Terphenyl-d14	120	42 - 151

COP0019519

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: PPF1182-04

Lab Sample ID: 580-2965-4 Date Sampled: 06/27/2006 0000
Client Matrix: Solid % Moisture: 15.5 Date Received: 06/30/2006 0900

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C Analysis Batch: 580-8140 Instrument ID: SEA023
Preparation: 3550B Prep Batch: 580-8685 Lab File ID: HP01957.D
Dilution: 1.0 Initial Weight/Volume: 10.4781 g
Date Analyzed: 07/25/2006 0909 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1341 Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND		5.6
2-Methylnaphthalene		ND		5.6
1-Methylnaphthalene		ND		5.6
Acenaphthylene		6.7		5.6
Acenaphthene		ND		5.6
Fluorene		ND		5.6
Phenanthrene		17		5.6
Anthracene		ND		5.6
Fluoranthene		80		5.6
Pyrene		98		5.6
Benzo[a]anthracene		92		5.6
Chrysene		140		5.6
Benzofluoranthene		110		11
Benzo[a]pyrene		110		5.6
Indeno[1,2,3-cd]pyrene		100		5.6
Dibenz(a,h)anthracene		23		5.6
Benzo[g,h,i]perylene		84		5.6
Bis(2-ethylhexyl) phthalate		380		23
Butyl benzyl phthalate		ND		23
Diethyl phthalate		ND		11
Dimethyl phthalate		ND		11
Di-n-butyl phthalate		ND		23
Di-n-octyl phthalate		34		23

Surrogate	%Rec	Acceptance Limits
Nitrobenzene-d5	96	38 - 141
2-Fluorobiphenyl	95	42 - 140
Terphenyl-d14	96	42 - 151

COP0019520

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-01**

Lab Sample ID: 580-2965-1 Date Sampled: 06/27/2006 0917
Client Matrix: Solid % Moisture: 13.9 Date Received: 06/30/2006 0900

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A Analysis Batch: 580-8899 Instrument ID: SEA035
Preparation: 3550B Prep Batch: 580-8618 Lab File ID: ECD20276.D
Dilution: 1.0 Initial Weight/Volume: 10.8104 g
Date Analyzed: 07/12/2006 1538 Final Weight/Volume: 10 mL
Date Prepared: 07/06/2006 0915 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Aldrin		ND		1.1
alpha-BHC		ND		1.1
beta-BHC		ND		1.1
delta-BHC		ND		1.1
gamma-BHC (Lindane)		ND		1.1
4,4'-DDD		ND		2.1
4,4'-DDE		ND		2.1
4,4'-DDT		ND		2.1
Dieldrin		ND		2.1
Endosulfan I		ND		1.1
Endosulfan II		ND		2.1
Endosulfan sulfate		ND		2.1
Endrin		ND		2.1
Endrin aldehyde		ND		2.1
Heptachlor		ND		1.1
Heptachlor epoxide		ND		1.1
Methoxychlor		ND		11
Endrin ketone		ND		2.1
Toxaphene		ND		110
alpha-Chlordane		ND		1.1
gamma-Chlordane		ND		1.1

Surrogate	%Rec		Acceptance Limits
Tetrachloro-m-xylene	47		49 - 123
DCB Decachlorobiphenyl	49		40 - 158

COP0019521

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-02**

Lab Sample ID: 580-2965-2 Date Sampled: 06/27/2006 1039
Client Matrix: Solid % Moisture: 22.3 Date Received: 06/30/2006 0900

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A Analysis Batch: 580-8899 Instrument ID: SEA035
Preparation: 3550B Prep Batch: 580-8618 Lab File ID: ECD20277.D
Dilution: 1.0 Initial Weight/Volume: 10.2289 g
Date Analyzed: 07/12/2006 1557 Final Weight/Volume: 10 mL
Date Prepared: 07/06/2006 0915 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Aldrin		ND		1.3
alpha-BHC		ND		1.3
beta-BHC		ND		1.3
delta-BHC		ND		1.3
gamma-BHC (Lindane)		ND		1.3
4,4'-DDD		ND		2.5
4,4'-DDE		ND		2.5
4,4'-DDT		5.7		2.5
Dieldrin		ND		2.5
Endosulfan I		ND		1.3
Endosulfan II		ND		2.5
Endosulfan sulfate		ND		2.5
Endrin		ND		2.5
Endrin aldehyde		ND		2.5
Heptachlor		ND		1.3
Heptachlor epoxide		ND		1.3
Methoxychlor		ND		13
Endrin ketone		ND		2.5
Toxaphene		ND		130
alpha-Chlordane		ND		1.3
gamma-Chlordane		1.9	M	1.3

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	54	49 - 123
DCB Decachlorobiphenyl	50	40 - 158

COP0019522

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-03**

Lab Sample ID: 580-2965-3 Date Sampled: 06/27/2006 1238
Client Matrix: Solid % Moisture: 26.5 Date Received: 06/30/2006 0900

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A Analysis Batch: 580-8899 Instrument ID: SEA035
Preparation: 3550B Prep Batch: 580-8618 Lab File ID: ECD20278.D
Dilution: 1.0 Initial Weight/Volume: 10.5849 g
Date Analyzed: 07/12/2006 1617 Final Weight/Volume: 10 mL
Date Prepared: 07/06/2006 0915 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Aldrin		ND		1.3
alpha-BHC		ND		1.3
beta-BHC		ND		1.3
delta-BHC		ND		1.3
gamma-BHC (Lindane)		ND		1.3
4,4'-DDD		ND		2.6
4,4'-DDE		ND		2.6
4,4'-DDT		ND		2.6
Dieldrin		ND		2.6
Endosulfan I		ND		1.3
Endosulfan II		ND		2.6
Endosulfan sulfate		ND		2.6
Endrin		ND		2.6
Endrin aldehyde		ND		2.6
Heptachlor		ND		1.3
Heptachlor epoxide		ND		1.3
Methoxychlor		ND		13
Endrin ketone		ND		2.6
Toxaphene		ND		130
alpha-Chlordane		ND		1.3
gamma-Chlordane		ND		1.3

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	123	49 - 123
DCB Decachlorobiphenyl	81	40 - 158

COP0019523

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-04**

Lab Sample ID: 580-2965-4 Date Sampled: 06/27/2006 0000
Client Matrix: Solid % Moisture: 15.5 Date Received: 06/30/2006 0900

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A Analysis Batch: 580-8899 Instrument ID: SEA035
Preparation: 3550B Prep Batch: 580-8618 Lab File ID: ECD20279.D
Dilution: 1.0 Initial Weight/Volume: 10.5006 g
Date Analyzed: 07/12/2006 1636 Final Weight/Volume: 10 mL
Date Prepared: 07/06/2006 0915 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
Aldrin		ND		1.1
alpha-BHC		ND		1.1
beta-BHC		ND		1.1
delta-BHC		ND		1.1
gamma-BHC (Lindane)		ND		1.1
4,4'-DDD		ND		2.3
4,4'-DDE		ND		2.3
4,4'-DDT		ND		2.3
Dieldrin		ND		2.3
Endosulfan I		ND		1.1
Endosulfan II		ND		2.3
Endosulfan sulfate		ND		2.3
Endrin		ND		2.3
Endrin aldehyde		ND		2.3
Heptachlor		ND		1.1
Heptachlor epoxide		ND		1.1
Methoxychlor		ND		11
Endrin ketone		ND		2.3
Toxaphene		ND		110
alpha-Chlordane		ND		1.1
gamma-Chlordane		ND		1.1

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	53	49 - 123
DCB Decachlorobiphenyl	46	40 - 158

COP0019524

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-01**

Lab Sample ID: 580-2965-1 Date Sampled: 06/27/2006 0917
Client Matrix: Solid % Moisture: 13.9 Date Received: 06/30/2006 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082 Analysis Batch: 580-8967 Instrument ID: SEA034
Preparation: 3550B Prep Batch: 580-8673 Lab File ID: PCB1950.D
Dilution: 1.0 Initial Weight/Volume: 10.8121 g
Date Analyzed: 07/10/2006 1854 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1126 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	RL
PCB-1016		ND		0.011
PCB-1221		ND		0.011
PCB-1232		ND		0.011
PCB-1242		ND		0.011
PCB-1248		ND		0.011
PCB-1254		ND		0.011
PCB-1260		ND		0.011

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	98	60 - 123
DCB Decachlorobiphenyl	88	65 - 126

COP0019525

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-02**

Lab Sample ID: 580-2965-2 Date Sampled: 06/27/2006 1039
Client Matrix: Solid % Moisture: 22.3 Date Received: 06/30/2006 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082 Analysis Batch: 580-8967 Instrument ID: SEA034
Preparation: 3550B Prep Batch: 580-8673 Lab File ID: PCB1951.D
Dilution: 1.0 Initial Weight/Volume: 10.4825 g
Date Analyzed: 07/10/2006 1917 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1126 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	RL
PCB-1016		ND		0.012
PCB-1221		ND		0.012
PCB-1232		ND		0.012
PCB-1242		ND		0.012
PCB-1248		ND		0.012
PCB-1254		ND		0.012
PCB-1260		ND		0.012

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	101	60 - 123
DCB Decachlorobiphenyl	93	65 - 126

COP0019526

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-03**

Lab Sample ID: 580-2965-3 Date Sampled: 06/27/2006 1238
Client Matrix: Solid % Moisture: 26.5 Date Received: 06/30/2006 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082 Analysis Batch: 580-8967 Instrument ID: SEA034
Preparation: 3550B Prep Batch: 580-8673 Lab File ID: PCB1952.D
Dilution: 1.0 Initial Weight/Volume: 10.8933 g
Date Analyzed: 07/10/2006 1941 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1126 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	RL
PCB-1016		ND		0.012
PCB-1221		ND		0.012
PCB-1232		ND		0.012
PCB-1242		ND		0.012
PCB-1248		ND		0.012
PCB-1254		ND		0.012
PCB-1260		ND		0.012

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	101	60 - 123
DCB Decachlorobiphenyl	91	65 - 126

COP0019527

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Client Sample ID: **PPF1182-04**

Lab Sample ID: 580-2965-4 Date Sampled: 06/27/2006 0000
Client Matrix: Solid % Moisture: 15.5 Date Received: 06/30/2006 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082 Analysis Batch: 580-8967 Instrument ID: SEA034
Preparation: 3550B Prep Batch: 580-8673 Lab File ID: PCB1953.D
Dilution: 1.0 Initial Weight/Volume: 10.8224 g
Date Analyzed: 07/10/2006 2004 Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1126 Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	RL
PCB-1016		ND		0.011
PCB-1221		ND		0.011
PCB-1232		ND		0.011
PCB-1242		ND		0.011
PCB-1248		ND		0.011
PCB-1254		ND		0.011
PCB-1260		ND		0.011

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	94	60 - 123
DCB Decachlorobiphenyl	90	65 - 126

COP0019528

General Chemistry

Client Sample ID: PPF1182-01

Lab Sample ID: 580-2965-1
Client Matrix: Solid

Date Sampled: 06/27/2006 0917
Date Received: 06/30/2006 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	86		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			
Percent Moisture	14		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			

Client Sample ID: PPF1182-02

Lab Sample ID: 580-2965-2
Client Matrix: Solid

Date Sampled: 06/27/2006 1039
Date Received: 06/30/2006 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	78		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			
Percent Moisture	22		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			

Client Sample ID: PPF1182-03

Lab Sample ID: 580-2965-3
Client Matrix: Solid

Date Sampled: 06/27/2006 1238
Date Received: 06/30/2006 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	73		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			
Percent Moisture	27		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			

General Chemistry

Client Sample ID: **PPF1182-04**

Lab Sample ID: 580-2965-4
Client Matrix: Solid

Date Sampled: 06/27/2006 0000
Date Received: 06/30/2006 0900

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	84		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			
Percent Moisture	16		%	0.10	1.0	PercentMoisture
	Anly Batch: 580-8555	Date Analyzed	07/03/2006 0823			

DATA REPORTING QUALIFIERS

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	B	Compound was found in the blank and sample.
GC Semi VOA		
	I	Indicates the presence of an interference, recovery is not calculated.
	M	Manual integrated compound.
	X	Surrogate exceeds the control limits

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS Semi VOA				
Prep Batch: 580-8685				
LCS 580-8685/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-8685/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-8685/1-A	Method Blank	Solid	3550B	
580-2965-1	PPF1182-01	Solid	3550B	
580-2965-2	PPF1182-02	Solid	3550B	
580-2965-3	PPF1182-03	Solid	3550B	
580-2965-4	PPF1182-04	Solid	3550B	
Analysis Batch:580-8140				
LCS 580-8685/2-A	Lab Control Spike	Solid	8270C	580-8685
LCSD 580-8685/3-A	Lab Control Spike Duplicate	Solid	8270C	580-8685
MB 580-8685/1-A	Method Blank	Solid	8270C	580-8685
580-2965-1	PPF1182-01	Solid	8270C	580-8685
580-2965-2	PPF1182-02	Solid	8270C	580-8685
580-2965-3	PPF1182-03	Solid	8270C	580-8685
580-2965-4	PPF1182-04	Solid	8270C	580-8685

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC Semi VOA				
Prep Batch: 580-8618				
LCS 580-8618/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-8618/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-8618/1-A	Method Blank	Solid	3550B	
580-2965-1	PPF1182-01	Solid	3550B	
580-2965-2	PPF1182-02	Solid	3550B	
580-2965-3	PPF1182-03	Solid	3550B	
580-2965-4	PPF1182-04	Solid	3550B	
Prep Batch: 580-8673				
LCS 580-8673/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-8673/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-8673/1-A	Method Blank	Solid	3550B	
580-2965-1	PPF1182-01	Solid	3550B	
580-2965-2	PPF1182-02	Solid	3550B	
580-2965-3	PPF1182-03	Solid	3550B	
580-2965-4	PPF1182-04	Solid	3550B	
Analysis Batch:580-8899				
LCS 580-8618/2-A	Lab Control Spike	Solid	8081A	580-8618
LCSD 580-8618/3-A	Lab Control Spike Duplicate	Solid	8081A	580-8618
MB 580-8618/1-A	Method Blank	Solid	8081A	580-8618
580-2965-1	PPF1182-01	Solid	8081A	580-8618
580-2965-2	PPF1182-02	Solid	8081A	580-8618
580-2965-3	PPF1182-03	Solid	8081A	580-8618
580-2965-4	PPF1182-04	Solid	8081A	580-8618
Analysis Batch:580-8967				
LCS 580-8673/2-A	Lab Control Spike	Solid	8082	580-8673
LCSD 580-8673/3-A	Lab Control Spike Duplicate	Solid	8082	580-8673
MB 580-8673/1-A	Method Blank	Solid	8082	580-8673
580-2965-1	PPF1182-01	Solid	8082	580-8673
580-2965-2	PPF1182-02	Solid	8082	580-8673
580-2965-3	PPF1182-03	Solid	8082	580-8673
580-2965-4	PPF1182-04	Solid	8082	580-8673
General Chemistry				
Analysis Batch:580-8555				
580-2965-1	PPF1182-01	Solid	PercentMoisture	
580-2965-2	PPF1182-02	Solid	PercentMoisture	
580-2965-3	PPF1182-03	Solid	PercentMoisture	
580-2965-4	PPF1182-04	Solid	PercentMoisture	

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Surrogate Recovery Report

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Client Matrix: Solid

Lab Sample ID	Client Sample	(FBP) (%Rec)	(NBZ) (%Rec)	(TPH) (%Rec)
580-2965-1	PPF1182-01	89	98	83
580-2965-2	PPF1182-02	94	98	94
580-2965-3	PPF1182-03	117	110	120
580-2965-4	PPF1182-04	95	96	96
LCS 580-8685/2-A		102	106	98
LCSD 580-8685/3-A		106	109	97
MB 580-8685/1-A		99	104	99

Surrogate		Acceptance Limits
(FBP)	2-Fluorobiphenyl	42 - 140
(NBZ)	Nitrobenzene-d5	38 - 141
(TPH)	Terphenyl-d14	42 - 151

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Surrogate Recovery Report

8081A Organochlorine Pesticides by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample	(DCB 1) (%Rec)	(TCX 1) (%Rec)
580-2965-1	PPF1182-01	49	47 I
580-2965-2	PPF1182-02	50	54
580-2965-3	PPF1182-03	81	123
580-2965-4	PPF1182-04	46	53
LCS 580-8618/2-A		127	130 X
LCSD 580-8618/3-A		124	129 X
MB 580-8618/1-A		125	130 X

Surrogate		Acceptance Limits
(DCB 1)	DCB Decachlorobiphenyl	40 - 158
(TCX 1)	Tetrachloro-m-xylene	49 - 123

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Surrogate Recovery Report

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample	(DCB 1) (%Rec)	(TCX 1) (%Rec)
580-2965-1	PPF1182-01	88	98
580-2965-2	PPF1182-02	93	101
580-2965-3	PPF1182-03	91	101
580-2965-4	PPF1182-04	90	94
LCS 580-8673/2-A		99	105
LCSD 580-8673/3-A		106	109
MB 580-8673/1-A		97	106

Surrogate		Acceptance Limits
(DCB 1)	DCB Decachlorobiphenyl	65 - 126
(TCX 1)	Tetrachloro-m-xylene	60 - 123

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Method Blank - Batch: 580-8685

Method: 8270C
Preparation: 3550B

Lab Sample ID: MB 580-8685/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/14/2006 1352
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685
Units: ug/Kg

Instrument ID: SEA023
Lab File ID: HP01930.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		5.0
2-Methylnaphthalene	ND		5.0
1-Methylnaphthalene	ND		5.0
Acenaphthylene	ND		5.0
Acenaphthene	ND		5.0
Fluorene	ND		5.0
Phenanthrene	ND		5.0
Anthracene	ND		5.0
Fluoranthene	ND		5.0
Pyrene	ND		5.0
Benzo[a]anthracene	ND		5.0
Chrysene	ND		5.0
Benzofluoranthene	ND		10
Benzo[a]pyrene	ND		5.0
Indeno[1,2,3-cd]pyrene	ND		5.0
Dibenz(a,h)anthracene	ND		5.0
Benzo[g,h,i]perylene	ND		5.0
Bis(2-ethylhexyl) phthalate	35		20
Butyl benzyl phthalate	ND		20
Diethyl phthalate	ND		10
Dimethyl phthalate	ND		10
Di-n-butyl phthalate	ND		20
Di-n-octyl phthalate	ND		20

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	104	38 - 141
2-Fluorobiphenyl	99	42 - 140
Terphenyl-d14	99	42 - 151

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-8685

Method: 8270C
Preparation: 3550B

LCS Lab Sample ID: LCS 580-8685/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/14/2006 1415
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685
Units: ug/Kg

Instrument ID: SEA023
Lab File ID: HP01931.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:

LCSD Lab Sample ID: LCSD 580-8685/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/14/2006 1438
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685
Units: ug/Kg

Instrument ID: SEA023
Lab File ID: HP01932.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Naphthalene	103	112	54 - 131	9	26		
2-Methylnaphthalene	118	129	51 - 138	9	27		
1-Methylnaphthalene	117	126	50 - 150	8	30		
Acenaphthylene	107	117	52 - 130	9	28		
Acenaphthene	102	112	50 - 144	9	27		
Fluorene	109	121	50 - 134	11	31		
Phenanthrene	101	110	55 - 133	8	28		
Anthracene	107	113	52 - 135	6	27		
Fluoranthene	98	106	54 - 135	7	36		
Pyrene	101	109	47 - 152	8	31		
Benzo[a]anthracene	117	125	55 - 135	7	27		
Chrysene	90	96	59 - 133	7	26		
Benzofluoranthene	53	55	43 - 154	5	31		
Benzo[a]pyrene	107	113	54 - 138	6	30		
Indeno[1,2,3-cd]pyrene	105	117	45 - 153	11	29		
Dibenz(a,h)anthracene	108	122	50 - 150	12	30		
Benzo[g,h,i]perylene	97	112	54 - 142	14	28		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Nitrobenzene-d5	106	109	38 - 141
2-Fluorobiphenyl	102	106	42 - 140
Terphenyl-d14	98	97	42 - 151

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Method Blank - Batch: 580-8618

Method: 8081A
Preparation: 3550B

Lab Sample ID: MB 580-8618/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/12/2006 1439
Date Prepared: 07/06/2006 0915

Analysis Batch: 580-8899
Prep Batch: 580-8618
Units: ug/Kg

Instrument ID: SEA035
Lab File ID: ECD20273.D
Initial Weight/Volume: 10.0 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result	Qual	RL
Aldrin	ND		1.0
alpha-BHC	ND		1.0
beta-BHC	ND		1.0
delta-BHC	ND		1.0
gamma-BHC (Lindane)	ND		1.0
4,4'-DDD	ND		2.0
4,4'-DDE	ND		2.0
4,4'-DDT	ND		2.0
Dieldrin	ND		2.0
Endosulfan I	ND		1.0
Endosulfan II	ND		2.0
Endosulfan sulfate	ND		2.0
Endrin	ND		2.0
Endrin aldehyde	ND		2.0
Heptachlor	ND		1.0
Heptachlor epoxide	ND		1.0
Methoxychlor	ND		10
Endrin ketone	ND		2.0
Toxaphene	ND		100
alpha-Chlordane	ND		1.0
gamma-Chlordane	ND		1.0

Surrogate	% Rec		Acceptance Limits
Tetrachloro-m-xylene	130	X	49 - 123
DCB Decachlorobiphenyl	125		40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: TestAmerica Analytical Testing Corp.

Job Number: 580-2965-1

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-8618

Method: 8081A
Preparation: 3550B

LCS Lab Sample ID: LCS 580-8618/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/12/2006 1459
Date Prepared: 07/06/2006 0915

Analysis Batch: 580-8899
Prep Batch: 580-8618
Units: ug/Kg

Instrument ID: SEA035
Lab File ID: ECD20274.D
Initial Weight/Volume: 10.0 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-8618/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/12/2006 1518
Date Prepared: 07/06/2006 0915

Analysis Batch: 580-8899
Prep Batch: 580-8618
Units: ug/Kg

Instrument ID: SEA035
Lab File ID: ECD20275.D
Initial Weight/Volume: 10.0 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Aldrin	96	98	53 - 126	2	24		
alpha-BHC	77	78	41 - 128	1	28		
beta-BHC	92	94	48 - 121	3	32		
delta-BHC	85	88	22 - 153	4	36		
gamma-BHC (Lindane)	84	86	50 - 127	2	29		
4,4'-DDD	81	85	44 - 141	4	41		
4,4'-DDE	79	82	47 - 140	3	40		
4,4'-DDT	74	75	34 - 159	1	47		
Dieldrin	81	83	53 - 134	2	32		
Endosulfan I	80	82	52 - 122	2	31		
Endosulfan II	96	99	53 - 132	3	36		
Endosulfan sulfate	82	84	42 - 128	2	43		
Endrin	83	91	46 - 138	10	36		
Endrin aldehyde	93	96	12 - 179	3	47		
Heptachlor	103	107	50 - 130	4	31		
Heptachlor epoxide	84	86	49 - 123	2	31		
Methoxychlor	92	93	46 - 154	1	46		
Endrin ketone	88	89	45 - 127	1	45		
alpha-Chlordane	80	81	46 - 118	2	33		
gamma-Chlordane	83	85	49 - 122	2	32		

Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits
Tetrachloro-m-xylene	130	X	129	X	49 - 123
DCB Decachlorobiphenyl	127		124		40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

COP0019540

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Method Blank - Batch: 580-8673

Method: 8082
Preparation: 3550B

Lab Sample ID: MB 580-8673/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/10/2006 1434
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673
Units: mg/Kg

Instrument ID: SEA034
Lab File ID: PCB1939.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result	Qual	RL
PCB-1016	ND		0.010
PCB-1221	ND		0.010
PCB-1232	ND		0.010
PCB-1242	ND		0.010
PCB-1248	ND		0.010
PCB-1254	ND		0.010
PCB-1260	ND		0.010

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	106	60 - 123
DCB Decachlorobiphenyl	97	65 - 126

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-8673

Method: 8082
Preparation: 3550B

LCS Lab Sample ID: LCS 580-8673/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/10/2006 1457
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673
Units: mg/Kg

Instrument ID: SEA034
Lab File ID: PCB1940.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-8673/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/10/2006 1521
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673
Units: mg/Kg

Instrument ID: SEA034
Lab File ID: PCB1941.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec. LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
PCB-1260	99	107	65 - 132	8	8		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	105	109	60 - 123
DCB Decachlorobiphenyl	99	106	65 - 126

Calculations are performed before rounding to avoid round-off errors in calculated results.

#2965

SUBCONTRACT ORDER

TestAmerica - Portland, OR

PPF1182

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica - Portland, OR	Severn Trent Laboratories - Tacoma
9405 SW Nimbus Ave.	5755 8th Street East
Beaverton, OR 97008	Tacoma, WA 98424
Phone: (503) 906-9200	Phone :253-922-2310
Fax: (503) 906-9210	Fax: 253-922-5047
Project Manager: Howard Holmes	

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: PPF1182-01	**Soil**	**Sampled:06/27/06 09:17**	[redacted]	
8270 SIM PAH	07/12/06 23:59	07/11/06 09:17		Low Level
8081A/8082 Pest/PCB	07/12/06 23:59	07/11/06 09:17		Low Level
Containers Supplied:				
4 oz. jar (C)	4 oz. jar (D)			
Sample ID: PPF1182-02	**Soil**	**Sampled:06/27/06 10:39**	[redacted]	
8270 SIM PAH	07/12/06 23:59	07/11/06 10:39		Low Level
8081A/8082 Pest/PCB	07/12/06 23:59	07/11/06 10:39		Low Level
Containers Supplied:				
4 oz. jar (C)	4 oz. jar (D)			
Sample ID: PPF1182-03	**Soil**	**Sampled:06/27/06 12:38**	[redacted]	
8270 SIM PAH	07/12/06 23:59	07/11/06 12:38		Low Level
8081A/8082 Pest/PCB	07/12/06 23:59	07/11/06 12:38		Low Level
Containers Supplied:				
4 oz. jar (C)	4 oz. jar (D)			
Sample ID: PPF1182-04	**Soil**	**Sampled:06/27/06 00:00**	[redacted]	
8270 SIM PAH	07/12/06 23:59	07/11/06 00:00		Low Level
8081A/8082 Pest/PCB	07/12/06 23:59	07/11/06 00:00		Low Level
Containers Supplied:				
4 oz. jar (C)	4 oz. jar (D)			

Released By	Date	Received By	Date
[signature]	6/28/06	[signature]	6/30/06 0900
Released By	*Date*	*Received By*	*Date*

COP0019542

TestAmerica
ANALYTICAL TESTING CORPORATION

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210 ✓
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

7.4°C

CHAIN OF CUSTODY REPORT

Work Order #: PPF1182

CLIENT: City of Portland

REPORT TO: Jennifer Shackelford
ADDRESS:

PHONE: FAX:

INVOICE TO: Charles Lytle

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor
PROJECT NUMBER: Inline Samp.
SAMPLED BY:

TURNAROUND REQUEST
In Business Days *
Organic & Inorganic Analyses: [X] STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	Pest/PCBs EPA 8081-LOW LEVEL (*)	PAH 8270-SIM LOW-LEVEL (*)	TOC	Grain Size	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 FO 060746	6/27/06 0917		X	X	X	X	S	5		
2 FO 060747	1039		X	X	X	X	S	5		
3 FO 060748	1238		X	X	X	X	S	5		
4 FO 060749	—		X	X	X	X	S	5		
5										
6										
7										
8										
9										
10										

REQUESTED ANALYSES

RELEASED BY: Rona Klneh — DATE: 6/28/06
PRINT NAME: Rona Klneh — FIRM: City of Portland — TIME: 1430

RECEIVED BY: Bob F — DATE: 6/28/06
PRINT NAME: Bob F — FIRM: TAP — TIME: 14:30

RELEASED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE: Lab
PRINT NAME: — FIRM: — TIME: 15:55

ADDITIONAL REMARKS: (*) Send Low-Level Pesticides/PCBs and Low-Level PAH to STL.

TEMP: 1.7

PAGE 1 OF 1

COC Rev 09/2004

Page 33 of 34

COP0019543

LOGIN SAMPLE RECEIPT CHECK LIST

Client: TestAmerica Analytical Testing Corp. Job Number: 580-2965-1

Login Number: 2965

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	temp above 6.0 c
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	NA	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

COP0019544

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 6/30/06
Page: 1 of 1
Collected By: MJH

Project Name: PORTLAND HARBOR INLINE SAMP

File Number: 1020.001 Matrix: OTHER

Requested Analyses

OUTFALL 22

*STL will perform Pesticide /PCB and PAH analysis
STL - Please send invoice to Howard Holmes at Northcreek and lab reports to Renee Chauvin or Jennifer Shackleford

Change SRC's / no "S" per PHA 7/18/06

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Pesticides\PCBs*	PAH*	Total Organic Carbon	Total Metals (Cd, Cu, Zn)	Field Comments
FO 060767	IL-22-AAM078-0606-~~s~~ upstream of node	22 ~~4~~ 1a	27-Jun-06	0917	G	●	●	●	●	NOTE: THESE SAMPLES WERE
FO 060768	IL-22-AAM080-0606-~~s~~ upstream of node	22 ~~5~~ 2a	27-Jun-06	1039	G	●	●	●	●	CREATED FROM THE UN-SUBMITTED PORTION OF ~~MAT~~ SEDIMENTS COLLECTED
FO 060769	IL-22-AAP844-0606-~~s~~ upstream of trash rack	22 ~~6~~ 3a	27-Jun-06	1238	G	●	●	●	●	FROM BASIN 22 ON 6-27-06. FOR EACH OF THESE SAMPLES, THE SEDIMENTS WERE
										SIEVED USING A 500-MICRON STAINLESS STEEL SIEVE.
										THESE SAMPLES ARE COMPRISED OF THE MATERIAL THAT PASSED
										THROUGH THE SIEVE. -MJH
										NOTE: Samples were sieved by adding
										1-1½L DI water. The water was
										discarded.

FO 060767 ⇒ FO 060746 (22.1)
0768 — 0747 (22.2)
0769 — 0748 (22.3)
sieved not sieved

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: [signature] Time: 1449	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: MICHAEL HAUSER Date: 6-30-06	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By: 2.**	**Received By: 3.**	**Received By: 4.**
Signature: [signature] Time: 1449	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Rona Kluch Date: 6/30/06	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

s:\eid\1000\1020.001\Sampdoc\Portland Harbor Water COC - OF 22a.xls

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060767**	**Sample Collected:**	6/27/2006 09:17	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/30/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 2
Address/Location:	IL-22-AAM078-0606 RINSED/SIEVED SED UPSTREAM OF NODE	**System ID:**	AK05744
Sample Point Code:	22_1a	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Di-n-octylphthalate was detected in the method blank at more than 1/10th the amount in the samples. Two other semi-volatile analytes were also detected in the blank but at insignificant levels compared to concentrations in the sample. NOTE: Other results flagged as EST are above the MDL but less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.67	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	385	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	390	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	4070	mg/Kg dry wt	50	EPA 9060 MOD	07/10/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	EST 0.48	µg/Kg dry wt	2.4	EPA 8081	07/07/06
4,4'-DDE	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
4,4'-DDT	EST 2.2	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Aldrin	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Alpha-BHC	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Alpha-Chlordane	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Beta-BHC	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Delta-BHC	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Dieldrin	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endosulfan I	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Endosulfan II	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endosulfan Sulfate	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endrin	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endrin Aldehyde	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endrin ketone	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Gamma-BHC(Lindane)	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Gamma-Chlordane	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Heptachlor	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Heptachlor Epoxide	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Methoxychlor	<12	µg/Kg dry wt	12	EPA 8081	07/07/06
Toxaphene	<120	µg/Kg dry wt	120	EPA 8081	07/07/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1221	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1232	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1242	<12	µg/Kg dry wt	12	EPA 8082	07/07/06

Report Date: 09/06/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-6600 fax (503) 823-6656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060767**	**Sample Collected:**	6/27/2006 09:17	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/30/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 2 of 2
Address/Location:	IL-22-AAM078-0606 RINSED/SIEVED SED UPSTREAM OF NODE	**System ID:**	AK05744
Sample Point Code:	22_1a	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Di-n-octylphthalate was detected in the method blank at more than 1/10th the amount in the samples. Two other semi-volatile analytes were also detected in the blank but at insignificant levels compared to concentrations in the sample. NOTE: Other results flagged as EST are above the MDL but less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Aroclor 1248	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1254	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1260	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	EST 3.8	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	EST 3.5	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Acenaphthene	EST 2.7	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Acenaphthylene	EST 3.4	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Anthracene	EST 5.6	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	58	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	69	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	61	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Benzofluoranthenes	70	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	860	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	150	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Chrysene	73	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	15	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Diethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Dimethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	EST 6.4	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	EST 54	µg/Kg dry wt	24	EPA 8270-SIM	07/07/06
Fluoranthene	79	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Fluorene	EST 3.4	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	63	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Naphthalene	EST 3.9	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Phenanthrene	34	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06
Pyrene	96	µg/Kg dry wt	6.1	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060767

Report Date: 09/06/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060768**	**Sample Collected:**	6/27/2006 10:39	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/30/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 2
Address/Location:	IL-22-AAM080-0606 RINSED/SIEVED SED UPSTREAM OF NODE	**System ID:**	AK05745
Sample Point Code:	22_2a	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Di-n-octylphthalate was detected in the method blank at more than 1/10th the amount in the samples. Two other semi-volatile analytes were also detected in the blank but at insignificant levels compared to concentrations in the sample. NOTE: Other results flagged as EST are above the MDL but less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.46	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	49.5	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	320	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	7490	mg/Kg dry wt	50	EPA 9060 MOD	07/10/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
4,4'-DDE	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
4,4'-DDT	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Aldrin	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Alpha-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Alpha-Chlordane	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Beta-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Delta-BHC	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Dieldrin	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Endosulfan I	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Endosulfan II	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Endosulfan Sulfate	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Endrin	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Endrin Aldehyde	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Endrin ketone	<2.6	µg/Kg dry wt	2.6	EPA 8081	07/07/06
Gamma-BHC(Lindane)	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Gamma-Chlordane	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Heptachlor	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Heptachlor Epoxide	<1.3	µg/Kg dry wt	1.3	EPA 8081	07/07/06
Methoxychlor	<13	µg/Kg dry wt	13	EPA 8081	07/07/06
Toxaphene	<130	µg/Kg dry wt	130	EPA 8081	07/07/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<13	µg/Kg dry wt	13	EPA 8082	07/07/06
Aroclor 1221	<13	µg/Kg dry wt	13	EPA 8082	07/07/06
Aroclor 1232	<13	µg/Kg dry wt	13	EPA 8082	07/07/06
Aroclor 1242	<13	µg/Kg dry wt	13	EPA 8082	07/07/06

Report Date: 09/06/06 **Validated By:** Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5658

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060768**	**Sample Collected:**	6/27/2006 10:39	**Sample Status:**	**COMPLETE AND VALIDATED**
		Sample Received:	06/30/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 2 of 2
Address/Location:	IL-22-AAM080-0606 RINSED/SIEVED SED UPSTREAM OF NODE	**System ID:**	AK05745
Sample Point Code:	22_2a	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Di-n-octylphthalate was detected in the method blank at more than 1/10th the amount in the samples. Two other semi-volatile analytes were also detected in the blank but at insignificant levels compared to concentrations in the sample. NOTE: Other results flagged as EST are above the MDL but less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Aroclor 1248	<13	µg/Kg dry wt	13	EPA 8082	07/07/06
Aroclor 1254	<13	µg/Kg dry wt	13	EPA 8082	07/07/06
Aroclor 1260	EST 3.9	µg/Kg dry wt	13	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	EST 2.3	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	EST 2.0	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Acenaphthene	EST 3.7	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Acenaphthylene	EST 3.1	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Anthracene	7.8	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	61	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	73	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	60	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Benzofluoranthenes	62	µg/Kg dry wt	14	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	370	µg/Kg dry wt	28	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	EST 13	µg/Kg dry wt	28	EPA 8270-SIM	07/07/06
Chrysene	61	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	13	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Diethyl phthalate	<14	µg/Kg dry wt	14	EPA 8270-SIM	07/07/06
Dimethyl phthalate	EST 2.0	µg/Kg dry wt	14	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	<28	µg/Kg dry wt	28	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	EST 24	µg/Kg dry wt	28	EPA 8270-SIM	07/07/06
Fluoranthene	86	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Fluorene	EST 3.3	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	63	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Naphthalene	7.9	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Phenanthrene	37	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06
Pyrene	99	µg/Kg dry wt	6.9	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060768

Report Date: 09/06/06 Validated By: Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060769**	**Sample Collected:**	6/27/2006 12:38	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/30/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 2
Address/Location:	IL-22-AAP844-0606 RINSED/SIEVED SED UPSTREAM OF TRASH RACK	**System ID:**	AK05746
Sample Point Code:	22_3a	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Di-n-octylphthalate was detected in the method blank at more than 1/10th the amount in the samples. Two other semi-volatile analytes were also detected in the blank but at insignificant levels compared to concentrations in the sample. NOTE: Other results flagged as EST are above the MDL but less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
METALS					
CADMIUM	0.14	mg/Kg dry wt	0.10	EPA 6020	07/05/06
COPPER	27.6	mg/Kg dry wt	0.25	EPA 6020	07/05/06
ZINC	62.5	mg/Kg dry wt	0.50	EPA 6020	07/05/06
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	16000	mg/Kg dry wt	50	EPA 9060 MOD	07/10/06
PESTICIDES BY EPA 8081 - STL					
4,4'-DDD	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
4,4'-DDE	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
4,4'-DDT	2.9	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Aldrin	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Alpha-BHC	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Alpha-Chlordane	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Beta-BHC	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Delta-BHC	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Dieldrin	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endosulfan I	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Endosulfan II	EST 1.3	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endosulfan Sulfate	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endrin	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endrin Aldehyde	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Endrin ketone	<2.4	µg/Kg dry wt	2.4	EPA 8081	07/07/06
Gamma-BHC(Lindane)	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Gamma-Chlordane	1.3	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Heptachlor	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Heptachlor Epoxide	<1.2	µg/Kg dry wt	1.2	EPA 8081	07/07/06
Methoxychlor	<12	µg/Kg dry wt	12	EPA 8081	07/07/06
Toxaphene	<120	µg/Kg dry wt	120	EPA 8081	07/07/06
POLYCHLORINATED BIPHENYLS (PCBs) - STL					
Aroclor 1016	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1221	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1232	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1242	<12	µg/Kg dry wt	12	EPA 8082	07/07/06

Report Date: 09/06/06 **Validated By:** Signature on File

City of Portland

Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID:	**FO060769**	**Sample Collected:**	6/27/2006 12:38	**Sample Status:**	COMPLETE AND VALIDATED
		Sample Received:	06/30/06		

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 2 of 2
Address/Location:	IL-22-AAP844-0606 RINSED/SIEVED SED UPSTREAM OF TRASH RACK	**System ID:**	AK05746
Sample Point Code:	22_3a	**EID File # :**	1020.001
Sample Type:	GRAB	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	MJH

Comments:

QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Di-n-octylphthalate was detected in the method blank at more than 1/10th the amount in the samples. Two other semi-volatile analytes were also detected in the blank but at insignificant levels compared to concentrations in the sample. NOTE: Other results flagged as EST are above the MDL but less than the MRL.

Test Parameter	Result	Units	MRL	Method	Analysis Date
Aroclor 1248	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1254	12	µg/Kg dry wt	12	EPA 8082	07/07/06
Aroclor 1260	<12	µg/Kg dry wt	12	EPA 8082	07/07/06
SEMI-VOLATILE ORGANICS, CUSTOM - STL					
1-Methylnaphthalene	EST 4.9	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
2-Methylnaphthalene	7.5	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Acenaphthene	14	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Acenaphthylene	EST 5.7	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Anthracene	24	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzo(a)anthracene	250	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzo(a)pyrene	300	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzo(g,h,i)perylene	260	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Benzofluoranthenes	320	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Bis(2-ethylhexyl) phthalate	980	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Butylbenzylphthalate	350	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Chrysene	300	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Dibenzo(a,h)anthracene	71	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Diethyl phthalate	<12	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Dimethyl phthalate	EST 4.1	µg/Kg dry wt	12	EPA 8270-SIM	07/07/06
Di-n-butyl phthalate	EST 4.0	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Di-n-octyl phthalate	EST 130	µg/Kg dry wt	23	EPA 8270-SIM	07/07/06
Fluoranthene	400	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Fluorene	17	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Indeno(1,2,3-cd)pyrene	310	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Naphthalene	10	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Phenanthrene	200	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06
Pyrene	390	µg/Kg dry wt	5.8	EPA 8270-SIM	07/07/06

End of Report for Sample ID: FO060769

Report Date: 09/06/06 Validated By: Signature on File

TestAmerica
ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

September 01, 2006

Jennifer Shackelford
City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 07/03/06 11:15. The following list is a summary of the Work Orders contained in this report, generated on 08/31/06 20:00.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
PPG0024	Portland Harbor	36238

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/31/06 20:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
F0060767	PPG0024-01	Soil	06/27/06 09:17	07/03/06 11:15
F0060768	PPG0024-02	Soil	06/27/06 10:39	07/03/06 11:15
F0060769	PPG0024-03	Soil	06/27/06 12:38	07/03/06 11:15

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Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name: **Portland Harbor**	
6543 N. Burlington Ave.	Project Number: 36238	Report Created:
Portland, OR 97203	Project Manager: Jennifer Shackelford	08/31/06 20:00

Conventional Chemistry Parameters by APHA/EPA Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PPG0024-01 (F0060767)		**Soil**				**Sampled: 06/27/06 09:17**				
Total Organic Carbon	EPA 9060 mod.	**4070**	-----	689	mg/kg dry	1x	6G18030	07/10/06 12:48	07/17/06 12:51	
PPG0024-02 (F0060768)		**Soil**				**Sampled: 06/27/06 10:39**				
Total Organic Carbon	EPA 9060 mod.	**7490**	-----	923	mg/kg dry	1x	6G18030	07/10/06 12:48	07/17/06 13:21	
PPG0024-03 (F0060769)		**Soil**				**Sampled: 06/27/06 12:38**				
Total Organic Carbon	EPA 9060 mod.	**16000**	-----	813	mg/kg dry	1x	6G18030	07/10/06 12:48	07/17/06 13:36	

TestAmerica - Portland, OR

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Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name: **Portland Harbor**	
6543 N. Burlington Ave.	Project Number: 36238	Report Created:
Portland, OR 97203	Project Manager: Jennifer Shackelford	08/31/06 20:00

Physical Parameters by APHA/ASTM/EPA Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PPG0024-01 (F0060767)		**Soil**				**Sampled: 06/27/06 09:17**				
Dry Weight	BSOPSPL003R08	**72.6**	-----	1.00	%	1x	6G11058	07/11/06 14:48	07/12/06 00:00	
PPG0024-02 (F0060768)		**Soil**				**Sampled: 06/27/06 10:39**				
Dry Weight	BSOPSPL003R08	**54.2**	-----	1.00	%	1x	6G11058	07/11/06 14:48	07/12/06 00:00	
PPG0024-03 (F0060769)		**Soil**				**Sampled: 06/27/06 12:38**				
Dry Weight	BSOPSPL003R08	**61.5**	-----	1.00	%	1x	6G11058	07/11/06 14:48	07/12/06 00:00	

TestAmerica - Portland, OR

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

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ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name: **Portland Harbor**	
6543 N. Burlington Ave.	Project Number: 36238	Report Created:
Portland, OR 97203	Project Manager: Jennifer Shackelford	08/31/06 20:00

Conventional Chemistry Parameters by APHA/EPA Methods - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 6G18030 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6G18030-BLK1)									Extracted: 07/17/06 10:59					
Total Organic Carbon	EPA 9060 mod.	ND	---	500	mg/kg wet	1x	--	--	--	--	--	--	07/17/06 10:59	
LCS (6G18030-BS1)									Extracted: 07/07/06 12:48					
Total Organic Carbon	EPA 9060 mod.	28200	---	500	mg/kg wet	1x	--	29900	94.3%	(72-130)	--	--	07/17/06 11:08	
Duplicate (6G18030-DUP1)					QC Source: BPG0096-21				Extracted: 07/10/06 12:48					
Total Organic Carbon	EPA 9060 mod	22300	---	611	mg/kg dry	1x	21700	--	--	--	2.73%	(35)	07/17/06 12:20	
Duplicate (6G18030-DUP2)					QC Source: PPG0024-01				Extracted: 07/10/06 12:48					
Total Organic Carbon	EPA 9060 mod.	4120	---	689	mg/kg dry	1x	4070	--	--	--	1.22%	(35)	07/17/06 13:12	
Duplicate (6G18030-DUP3)					QC Source: BPG0281-02				Extracted: 07/13/06 12:48					
Total Organic Carbon	EPA 9060 mod	986	---	715	mg/kg dry	1x	1770	--	--	--	56.9%	(35)	07/17/06 15.17	Q-14
Matrix Spike (6G18030-MS1)					QC Source: BPG0096-21				Extracted: 07/10/06 12:48					
Total Organic Carbon	EPA 9060 mod.	60400	---	611	mg/kg dry	1x	21700	18800	206%	(40-160)	--	--	07/17/06 12.23	Q-14

TestAmerica - Portland, OR

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/31/06 20:00

Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 6G11058 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (6G11058-BLK1)													Extracted: 07/11/06 14:48	
Dry Weight	BSOPSPL003R08	100	---	1.00	%	1x	--	--	--	--	--	--	07/12/06 00:00	

TestAmerica - Portland, OR

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

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TestAmerica
ANALYTICAL TESTING CORPORATION

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	08/31/06 20:00

Notes and Definitions

Report Specific Notes:

Q-14 - Visual examination indicates the RPD and/or matrix spike recovery is outside the control limit due to a non-homogeneous sample matrix.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA - Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Howard Holmes, Project Manager

COP0019558

TestAmerica
ANALYTICAL TESTING CORPORATION

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11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
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2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PPG0004

CLIENT: City of Portland

REPORT TO: ADDRESS: Jennifer Shackelford

PHONE: FAX:

INVOICE TO: Charles Lytle

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor

PROJECT NUMBER: Inline Samp.

SAMPLED BY

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: X (STD) 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses: 5 (STD) 4 3 2 1 <1

OTHER Specify

* Turnaround Requests less than standard may incur Rush Charges

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Pest/PCBs EPA 8081 - LOW LEVEL (*)	PAH 8270-SIM - LOW LEVEL (*)	TOC	MATRIX (W, S, O)	# OF CONT.	LOCATION COMMENTS	FA WO ID
1	F0060767	6/27/06 0917	X	X	X	S	3	(*)	
2	F0060768	1039	X	X	X	S	3	(*)	
3	F0060769	1238	X	X	X	S	3	(*)	
4									
5									
6									
7									
8									
9									
10									

RELEASED BY: [signature] DATE: 7/3/06
PRINT NAME: Daniel K. Van Metern FIRM: City of Portland TIME: 0948

RECEIVED BY: [signature] DATE: 7-3-06
PRINT NAME: FIRM: TIME: 9:48

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: (*) Send Low-level Pest/PCBs and Low-level PAH to STL. [signature]

TEMP:

PAGE 1 OF 1

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and for any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice unless otherwise contracted. Sample(s) will be disposed of after 30 days unless otherwise contracted.

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COP0019559

Non-Conformances?

Circle Y or N

(If Y, see other side)

TEST AMERICA SAMPLE RECEIPT CHECKLIST

Received By: (applies to temp at receipt)
Date: 7/3/06
Time: 1115
Initials: [illegible]

Logged-in By:
Date: 7/3
Initials: SM

Unpacked/Labeled By:
Date: 7/3
Initials: SM

Cooler ID: ____ (____ of ____)

Work Order No: PPG0024
Client: COP
Project: Portland Harbor

Container Type:
1 Cooler
____ Box
____ None/Other ____

COC Seals:
____ Ship. Container ____ Sign By
____ On Bottles ____ Date
____ None

taped Shut

Packing Material
6 Bubble Bags ____ Styrofoam
____ Foam Packs
____ None/Other Other ____

Refrigerant:
Gel Ice Pack ____ ____ None
____ Loose Ice
None/Other Blue

Received Via: Bill#
____ Fed Ex ____ Client
____ UPS ____ NCA Courier
____ DHL ____ Mid Valley
6 Senvoy ____ TDP
____ GS ____ Other____

Cooler Temperature (*IR*): 3.8 °C Plastic Glass (circle one) (Frozen filters, Tedlars and aqueous Metals exempt)

Temperature Blank? ____ °C or NA Trip Blank? Y or N or NA

Sample Containers:		ID			ID
Intact?	Y or N		Metals Preserved?	Y or N or NA	
Provided by NCA?	Y or N		Client QAPP Preserved?	Y or N or NA	
Correct Type?	Y or N		Adequate Volume? (for tests requested)	Y or N	
#Containers match COC?	Y or N		Water VOAs: Headspace?	Y or N or NA	
IDs/time/date match COC?	Y or N		Comments:		
Hold Times in hold?	Y or N				

PROJECT MANAGEMENT

Is the Chain of Custody complete? Y or N If N, circle the items that were incomplete

Comments,Problems ____

Total access set up? Y or N
Has client been contacted regarding non-conformances? Y or N If Y, ____/____ Date Time

PM Initials: ____ Date: ____ Time: ____

(rev 3, 09/12/05)

COP0019560

SEVERN TRENT STL

ANALYTICAL REPORT

Job Number: 580-2989-1

Job Description: Portland Harbor Inline Samp

For:
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Attention: Peter Abrams

Tom Coyner
Project Manager I
tcoyner@stl-inc.com
07/19/2006

Project Manager: Tom Coyner

STL Seattle is a part of Severn Trent Laboratories, Inc.

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Case Narrative for: 580-2989

CHLORINATED PESTICIDES

Samples 580-2989-1 through 580-2989-3 were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081A. The samples were prepared on 07/07/2006 and analyzed on 07/13/2006, which was within the method required holding time. No difficulties were encountered during the chlorinated pesticides analyses.

POLYCHLORINATED BIPHENYLS (PCB'S)

Samples 580-2989-1 through 580-2989-3 were analyzed for polychlorinated biphenyls (PCB's) in accordance with EPA SW-846 Method 8082. The samples were prepared on 07/07/2006 and analyzed on 07/10/2006, which was within the method required holding time. No difficulties were encountered during the PCB analyses.

SEMIVOLATILE ORGANICS

Samples 580-2989-1 through 580-2989-3 were analyzed for semivolatile organics in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/07/2006 and analyzed on 07/14/2006, which was within the method required holding time. Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-8685/1-A at a level exceeding the reporting limit. The associated sample results have been flagged "B".

Di-n-octyl phthalate and Pyrene were detected in method blank MB 580-8685/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". The associated sample results have been flagged "B".

PERCENT SOLIDS

Samples 580-2989-1 through 580-2989-3 were analyzed for percent solids in accordance with EPA Method 160.3 Modified. The samples were analyzed on 07/07/2006, which was within the required method holding time. No difficulties were encountered during the percent solids analyses.

COP0019562

METHOD SUMMARY

Client: City of Portland BES

Job Number: 580-2989-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)	STL-SEA	SW846 8270C	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Organochlorine Pesticides by Gas Chromatography	STL-SEA	SW846 8081A	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	STL-SEA	SW846 8082	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Percent Moisture	STL-SEA	EPA PercentMoisture	

LAB REFERENCES:

STL-SEA = STL-Seattle

METHOD REFERENCES:

EPA - US Environmental Protection Agency

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

COP0019563

METHOD / ANALYST SUMMARY

Client: City of Portland BES

Job Number: 580-2989-1

Method	Analyst	Analyst ID
SW846 8270C	Frans, Ben	BF
SW846 8081A	League, Steve	SL
SW846 8082	Marfiak, Steve T	STM
EPA PercentMoisture	Durrant, Stephanie	SD

COP0019564

SAMPLE SUMMARY

Client: City of Portland BES

Job Number: 580-2989-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-2989-1	PPG0024-01	Solid	06/27/2006 0917	07/06/2006 0815
580-2989-2	PPG0024-02	Solid	06/27/2006 1039	07/06/2006 0815
580-2989-3	PPG0024-03	Solid	06/27/2006 1238	07/06/2006 0815

SAMPLE RESULTS

COP0019566

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-01**

Lab Sample ID: 580-2989-1
Client Matrix: Solid % Moisture: 19.4

Date Sampled: 06/27/2006 0917
Date Received: 07/06/2006 0815

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/14/2006 1501
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685

Instrument ID: SEA023
Lab File ID: HP01933.D
Initial Weight/Volume: 10.1765 g
Final Weight/Volume: 10 mL
Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		3.9	J	0.66	6.1
2-Methylnaphthalene		3.5	J	0.72	6.1
1-Methylnaphthalene		3.8	J	0.89	6.1
Acenaphthylene		3.4	J	0.69	6.1
Acenaphthene		2.7	J	0.68	6.1
Fluorene		3.4	J	0.71	6.1
Phenanthrene		34		0.85	6.1
Anthracene		5.6	J	0.60	6.1
Fluoranthene		79		0.57	6.1
Pyrene		96	B	0.59	6.1
Benzo[a]anthracene		58		0.91	6.1
Chrysene		73		0.66	6.1
Benzofluoranthene		70		1.5	12
Benzo[a]pyrene		69		0.63	6.1
Indeno[1,2,3-cd]pyrene		63		1.7	6.1
Dibenz(a,h)anthracene		15		1.7	6.1
Benzo[g,h,i]perylene		61		2.0	6.1
Bis(2-ethylhexyl) phthalate		860	B	3.5	24
Butyl benzyl phthalate		150		7.9	24
Diethyl phthalate		ND		12	12
Dimethyl phthalate		ND		1.4	12
Di-n-butyl phthalate		6.4	J	2.3	24
Di-n-octyl phthalate		54	B	1.3	24

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	88	42 - 140
Nitrobenzene-d5	91	38 - 141
Terphenyl-d14	75	42 - 151

Client: City of Portland BES | Job Number: 580-2989-1

Client Sample ID: **PPG0024-02**

Lab Sample ID: 580-2989-2 | Date Sampled: 06/27/2006 1039
Client Matrix: Solid | % Moisture: 28.2 | Date Received: 07/06/2006 0815

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C | Analysis Batch: 580-8140 | Instrument ID: SEA023
Preparation: 3550B | Prep Batch: 580-8685 | Lab File ID: HP01936.D
Dilution: 1.0 | Initial Weight/Volume: 10.0914 g
Date Analyzed: 07/14/2006 1610 | Final Weight/Volume: 10 mL
Date Prepared: 07/07/2006 1341 | Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		7.9		0.75	6.9
2-Methylnaphthalene		2.0	J	0.82	6.9
1-Methylnaphthalene		2.3	J	1.0	6.9
Acenaphthylene		3.1	J	0.78	6.9
Acenaphthene		3.7	J	0.77	6.9
Fluorene		3.3	J	0.81	6.9
Phenanthrene		37		0.97	6.9
Anthracene		7.8		0.68	6.9
Fluoranthene		86		0.64	6.9
Pyrene		99	B	0.67	6.9
Benzo[a]anthracene		61		1.0	6.9
Chrysene		61		0.74	6.9
Benzofluoranthene		62		1.8	14
Benzo[a]pyrene		73		0.71	6.9
Indeno[1,2,3-cd]pyrene		63		2.0	6.9
Dibenz(a,h)anthracene		13		1.9	6.9
Benzo[g,h,i]perylene		60		2.2	6.9
Bis(2-ethylhexyl) phthalate		370	B	4.0	28
Butyl benzyl phthalate		13	J	8.9	28
Diethyl phthalate		ND		14	14
Dimethyl phthalate		2.0	J	1.6	14
Di-n-butyl phthalate		ND		2.6	28
Di-n-octyl phthalate		24	J B	1.5	28

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	93	42 - 140
Nitrobenzene-d5	103	38 - 141
Terphenyl-d14	98	42 - 151

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-03**

Lab Sample ID: 580-2989-3
Client Matrix: Solid % Moisture: 22.2

Date Sampled: 06/27/2006 1238
Date Received: 07/06/2006 0815

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/14/2006 1633
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685

Instrument ID: SEA023
Lab File ID: HP01937.D
Initial Weight/Volume: 10.9910 g
Final Weight/Volume: 10 mL
Injection Volume:

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		10		0.64	5.8
2-Methylnaphthalene		7.5		0.69	5.8
1-Methylnaphthalene		4.9	J	0.85	5.8
Acenaphthylene		5.7	J	0.66	5.8
Acenaphthene		14		0.65	5.8
Fluorene		17		0.68	5.8
Phenanthrene		200		0.82	5.8
Anthracene		24		0.57	5.8
Fluoranthene		400		0.54	5.8
Pyrene		390	B	0.57	5.8
Benzo[a]anthracene		250		0.87	5.8
Chrysene		300		0.63	5.8
Benzofluoranthene		320		1.5	12
Benzo[a]pyrene		300		0.60	5.8
Indeno[1,2,3-cd]pyrene		310		1.7	5.8
Dibenz(a,h)anthracene		71		1.6	5.8
Benzo[g,h,i]perylene		260		1.9	5.8
Bis(2-ethylhexyl) phthalate		980	B	3.4	23
Butyl benzyl phthalate		350		7.6	23
Diethyl phthalate		ND		12	12
Dimethyl phthalate		4.1	J	1.4	12
Di-n-butyl phthalate		4.0	J	2.2	23
Di-n-octyl phthalate		130	B	1.3	23

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	76	42 - 140
Nitrobenzene-d5	84	38 - 141
Terphenyl-d14	68	42 - 151

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-01**

Lab Sample ID: 580-2989-1
Client Matrix: Solid % Moisture: 19.4

Date Sampled: 06/27/2006 0917
Date Received: 07/06/2006 0815

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/13/2006 1340
Date Prepared: 07/07/2006 1420

Analysis Batch: 580-8942
Prep Batch: 580-8691

Instrument ID: SEA035
Lab File ID: ECD20294.D
Initial Weight/Volume: 10.3339 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aldrin		ND		0.13	1.2
alpha-BHC		ND		0.13	1.2
beta-BHC		ND		0.16	1.2
delta-BHC		ND		0.14	1.2
gamma-BHC (Lindane)		ND		0.14	1.2
4,4'-DDD		0.48	J	0.32	2.4
4,4'-DDE		ND		0.27	2.4
4,4'-DDT		2.2	J	0.32	2.4
Dieldrin		ND		0.27	2.4
Endosulfan I		ND		0.14	1.2
Endosulfan II		ND		0.32	2.4
Endosulfan sulfate		ND		0.41	2.4
Endrin		ND		0.51	2.4
Endrin aldehyde		ND		0.30	2.4
Heptachlor		ND		0.16	1.2
Heptachlor epoxide		ND		0.15	1.2
Methoxychlor		ND		1.6	12
Endrin ketone		ND		0.30	2.4
Toxaphene		ND		12	120
alpha-Chlordane		ND		0.14	1.2
gamma-Chlordane		ND		0.14	1.2

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	109	49 - 123
DCB Decachlorobiphenyl	107	40 - 158

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-02**

Lab Sample ID: 580-2989-2
Client Matrix: Solid % Moisture: 28.2

Date Sampled: 06/27/2006 1039
Date Received: 07/06/2006 0815

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/13/2006 1442
Date Prepared: 07/07/2006 1420

Analysis Batch: 580-8942
Prep Batch: 580-8691

Instrument ID: SEA035
Lab File ID: ECD20297.D
Initial Weight/Volume: 10.5590 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aldrin		ND		0.14	1.3
alpha-BHC		ND		0.14	1.3
beta-BHC		ND		0.17	1.3
delta-BHC		ND		0.16	1.3
gamma-BHC (Lindane)		ND		0.15	1.3
4,4'-DDD		ND		0.35	2.6
4,4'-DDE		ND		0.30	2.6
4,4'-DDT		ND		0.35	2.6
Dieldrin		ND		0.29	2.6
Endosulfan I		ND		0.16	1.3
Endosulfan II		ND		0.35	2.6
Endosulfan sulfate		ND		0.45	2.6
Endrin		ND		0.56	2.6
Endrin aldehyde		ND		0.33	2.6
Heptachlor		ND		0.18	1.3
Heptachlor epoxide		ND		0.17	1.3
Methoxychlor		ND		1.8	13
Endrin ketone		ND		0.33	2.6
Toxaphene		ND		13	130
alpha-Chlordane		ND		0.16	1.3
gamma-Chlordane		ND		0.16	1.3

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	106	49 - 123
DCB Decachlorobiphenyl	103	40 - 158

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-03**

Lab Sample ID: 580-2989-3
Client Matrix: Solid % Moisture: 22.2

Date Sampled: 06/27/2006 1238
Date Received: 07/06/2006 0815

8081A Organochlorine Pesticides by Gas Chromatography

Method: 8081A
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/13/2006 1502
Date Prepared: 07/07/2006 1420

Analysis Batch: 580-8942
Prep Batch: 580-8691

Instrument ID: SEA035
Lab File ID: ECD20298.D
Initial Weight/Volume: 10.6388 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aldrin		ND		0.13	1.2
alpha-BHC		ND		0.13	1.2
beta-BHC		ND		0.16	1.2
delta-BHC		ND		0.14	1.2
gamma-BHC (Lindane)		ND		0.14	1.2
4,4'-DDD		ND		0.32	2.4
4,4'-DDE		ND		0.28	2.4
4,4'-DDT		2.9		0.32	2.4
Dieldrin		ND		0.27	2.4
Endosulfan I		ND		0.14	1.2
Endosulfan II		1.3	J	0.32	2.4
Endosulfan sulfate		ND		0.41	2.4
Endrin		ND		0.51	2.4
Endrin aldehyde		ND		0.31	2.4
Heptachlor		ND		0.16	1.2
Heptachlor epoxide		ND		0.15	1.2
Methoxychlor		ND		1.6	12
Endrin ketone		ND		0.31	2.4
Toxaphene		ND		12	120
alpha-Chlordane		ND		0.14	1.2
gamma-Chlordane		1.3		0.14	1.2

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	119	49 - 123
DCB Decachlorobiphenyl	107	40 - 158

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-01**

Lab Sample ID: 580-2989-1
Client Matrix: Solid % Moisture: 19.4

Date Sampled: 06/27/2006 0917
Date Received: 07/06/2006 0815

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/10/2006 1545
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673

Instrument ID: SEA034
Lab File ID: PCB1942.D
Initial Weight/Volume: 10.0334 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0072	0.012
PCB-1221		ND		0.0072	0.012
PCB-1232		ND		0.0072	0.012
PCB-1242		ND		0.0072	0.012
PCB-1248		ND		0.0072	0.012
PCB-1254		ND		0.0019	0.012
PCB-1260		ND		0.0019	0.012

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	98	60 - 123
DCB Decachlorobiphenyl	86	65 - 126

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-02**

Lab Sample ID: 580-2989-2
Client Matrix: Solid % Moisture: 28.2

Date Sampled: 06/27/2006 1039
Date Received: 07/06/2006 0815

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/10/2006 1656
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673

Instrument ID: SEA034
Lab File ID: PCB1945.D
Initial Weight/Volume: 10.8241 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0075	0.013
PCB-1221		ND		0.0075	0.013
PCB-1232		ND		0.0075	0.013
PCB-1242		ND		0.0075	0.013
PCB-1248		ND		0.0075	0.013
PCB-1254		ND		0.0019	0.013
PCB-1260		0.0039	J	0.0019	0.013

Surrogate	*%Rec*	*Acceptance Limits*
Tetrachloro-m-xylene	105	60 - 123
DCB Decachlorobiphenyl	93	65 - 126

Client: City of Portland BES

Job Number: 580-2989-1

Client Sample ID: **PPG0024-03**

Lab Sample ID: 580-2989-3
Client Matrix: Solid % Moisture: 22.2

Date Sampled: 06/27/2006 1238
Date Received: 07/06/2006 0815

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Method: 8082
Preparation: 3550B
Dilution: 1.0
Date Analyzed: 07/10/2006 1719
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673

Instrument ID: SEA034
Lab File ID: PCB1946.D
Initial Weight/Volume: 10.5026 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0071	0.012
PCB-1221		ND		0.0071	0.012
PCB-1232		ND		0.0071	0.012
PCB-1242		ND		0.0071	0.012
PCB-1248		ND		0.0071	0.012
PCB-1254		0.012	J	0.0018	0.012
PCB-1260		ND		0.0018	0.012

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	104	60 - 123
DCB Decachlorobiphenyl	96	65 - 126

General Chemistry

Client Sample ID: **PPG0024-01**

Lab Sample ID: 580-2989-1
Client Matrix: Solid

Date Sampled: 06/27/2006 0917
Date Received: 07/06/2006 0815

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	81	H	%	0.10	0.10	1.0	PercentMoisture
	Anly Batch: 580-8694	Date Analyzed		07/07/2006 1512			
Percent Moisture	19	H	%	0.10	0.10	1.0	PercentMoisture
	Anly Batch: 580-8694	Date Analyzed		07/07/2006 1512			

Client Sample ID: **PPG0024-02**

Lab Sample ID: 580-2989-2
Client Matrix: Solid

Date Sampled: 06/27/2006 1039
Date Received: 07/06/2006 0815

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	72	H	%	0.10	0.10	1.0	PercentMoisture
	Anly Batch: 580-8694	Date Analyzed		07/07/2006 1512			
Percent Moisture	28	H	%	0.10	0.10	1.0	PercentMoisture
	Anly Batch: 580-8694	Date Analyzed		07/07/2006 1512			

Client Sample ID: **PPG0024-03**

Lab Sample ID: 580-2989-3
Client Matrix: Solid

Date Sampled: 06/27/2006 1238
Date Received: 07/06/2006 0815

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	78	H	%	0.10	0.10	1.0	PercentMoisture
	Anly Batch: 580-8694	Date Analyzed		07/07/2006 1512			
Percent Moisture	22	H	%	0.10	0.10	1.0	PercentMoisture
	Anly Batch: 580-8694	Date Analyzed		07/07/2006 1512			

DATA REPORTING QUALIFIERS

Client: City of Portland BES

Job Number: 580-2989-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC Semi VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	H	Sample was prepped or analyzed beyond the specified holding time

QUALITY CONTROL RESULTS

Client: City of Portland BES

Job Number: 580-2989-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS Semi VOA				
Prep Batch: 580-8685				
LCS 580-8685/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-8685/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-8685/1-A	Method Blank	Solid	3550B	
580-2989-1	PPG0024-01	Solid	3550B	
580-2989-1MS	Matrix Spike	Solid	3550B	
580-2989-1MSD	Matrix Spike Duplicate	Solid	3550B	
580-2989-2	PPG0024-02	Solid	3550B	
580-2989-3	PPG0024-03	Solid	3550B	
Analysis Batch:580-8140				
LCS 580-8685/2-A	Lab Control Spike	Solid	8270C	580-8685
LCSD 580-8685/3-A	Lab Control Spike Duplicate	Solid	8270C	580-8685
MB 580-8685/1-A	Method Blank	Solid	8270C	580-8685
580-2989-1	PPG0024-01	Solid	8270C	580-8685
580-2989-1MS	Matrix Spike	Solid	8270C	580-8685
580-2989-1MSD	Matrix Spike Duplicate	Solid	8270C	580-8685
580-2989-2	PPG0024-02	Solid	8270C	580-8685
580-2989-3	PPG0024-03	Solid	8270C	580-8685

Client: City of Portland BES

Job Number: 580-2989-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC Semi VOA				
Prep Batch: 580-8673				
LCS 580-8673/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-8673/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-8673/1-A	Method Blank	Solid	3550B	
580-2989-1	PPG0024-01	Solid	3550B	
580-2989-1MS	Matrix Spike	Solid	3550B	
580-2989-1MSD	Matrix Spike Duplicate	Solid	3550B	
580-2989-2	PPG0024-02	Solid	3550B	
580-2989-3	PPG0024-03	Solid	3550B	
Prep Batch: 580-8691				
LCS 580-8691/2-B	Lab Control Spike	Solid	3550B	
LCSD 580-8691/3-B	Lab Control Spike Duplicate	Solid	3550B	
MB 580-8691/1-A	Method Blank	Solid	3550B	
580-2989-1	PPG0024-01	Solid	3550B	
580-2989-1MS	Matrix Spike	Solid	3550B	
580-2989-1MSD	Matrix Spike Duplicate	Solid	3550B	
580-2989-2	PPG0024-02	Solid	3550B	
580-2989-3	PPG0024-03	Solid	3550B	
Analysis Batch:580-8967				
LCS 580-8673/2-A	Lab Control Spike	Solid	8082	580-8673
LCSD 580-8673/3-A	Lab Control Spike Duplicate	Solid	8082	580-8673
MB 580-8673/1-A	Method Blank	Solid	8082	580-8673
580-2989-1	PPG0024-01	Solid	8082	580-8673
580-2989-1MS	Matrix Spike	Solid	8082	580-8673
580-2989-1MSD	Matrix Spike Duplicate	Solid	8082	580-8673
580-2989-2	PPG0024-02	Solid	8082	580-8673
580-2989-3	PPG0024-03	Solid	8082	580-8673
Analysis Batch:580-8942				
LCS 580-8691/2-B	Lab Control Spike	Solid	8081A	580-8691
LCSD 580-8691/3-B	Lab Control Spike Duplicate	Solid	8081A	580-8691
MB 580-8691/1-A	Method Blank	Solid	8081A	580-8691
580-2989-1	PPG0024-01	Solid	8081A	580-8691
580-2989-1MS	Matrix Spike	Solid	8081A	580-8691
580-2989-1MSD	Matrix Spike Duplicate	Solid	8081A	580-8691
580-2989-2	PPG0024-02	Solid	8081A	580-8691
580-2989-3	PPG0024-03	Solid	8081A	580-8691
General Chemistry				
Analysis Batch:580-8694				
580-2989-1	PPG0024-01	Solid	PercentMoisture	
580-2989-2	PPG0024-02	Solid	PercentMoisture	
580-2989-3	PPG0024-03	Solid	PercentMoisture	

STL Seattle

COP0019580

Client: City of Portland BES

Job Number: 580-2989-1

Surrogate Recovery Report

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Client Matrix: Solid

Lab Sample ID	Client Sample	(FBP) (%Rec)	(NBZ) (%Rec)	(TPH) (%Rec)
580-2989-1	PPG0024-01	88	91	75
580-2989-2	PPG0024-02	93	103	98
580-2989-3	PPG0024-03	76	84	68
580-2989-1MS	PPG0024-01	97	104	82
580-2989-1MSD	PPG0024-01	95	101	84
LCS 580-8685/2-A		102	106	98
LCSD 580-8685/3-A		106	109	97
MB 580-8685/1-A		99	104	99

Surrogate		Acceptance Limits
(FBP)	2-Fluorobiphenyl	42 - 140
(NBZ)	Nitrobenzene-d5	38 - 141
(TPH)	Terphenyl-d14	42 - 151

Client: City of Portland BES

Job Number: 580-2989-1

Surrogate Recovery Report

8081A Organochlorine Pesticides by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample	(DCB 1) (%Rec)	(TCX 1) (%Rec)
580-2989-1	PPG0024-01	107	109
580-2989-2	PPG0024-02	103	106
580-2989-3	PPG0024-03	107	119
580-2989-1MS	PPG0024-01	92	101
580-2989-1MSD	PPG0024-01	90	99
LCS 580-8691/2-B		107	118
LCSD 580-8691/3-B		81	96
MB 580-8691/1-A		96	101

Surrogate		Acceptance Limits
(DCB 1)	DCB Decachlorobiphenyl	40 - 158
(TCX 1)	Tetrachloro-m-xylene	49 - 123

Client: City of Portland BES

Job Number: 580-2989-1

Surrogate Recovery Report

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample	(DCB 1) (%Rec)	(TCX 1) (%Rec)
580-2989-1	PPG0024-01	86	98
580-2989-2	PPG0024-02	93	105
580-2989-3	PPG0024-03	96	104
580-2989-1MS	PPG0024-01	93	99
580-2989-1MSD	PPG0024-01	91	102
LCS 580-8673/2-A		99	105
LCSD 580-8673/3-A		106	109
MB 580-8673/1-A		97	106

Surrogate		Acceptance Limits
(DCB 1)	DCB Decachlorobiphenyl	65 - 126
(TCX 1)	Tetrachloro-m-xylene	60 - 123

Client: City of Portland BES

Job Number: 580-2989-1

Method Blank - Batch: 580-8685

Method: 8270C
Preparation: 3550B

Lab Sample ID: MB 580-8685/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/14/2006 1352
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685
Units: ug/Kg

Instrument ID: SEA023
Lab File ID: HP01930.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:

Analyte	Result	Qual	MDL	RL
Naphthalene	ND		0.54	5.0
2-Methylnaphthalene	ND		0.59	5.0
1-Methylnaphthalene	ND		0.73	5.0
Acenaphthylene	ND		0.56	5.0
Acenaphthene	ND		0.56	5.0
Fluorene	ND		0.58	5.0
Phenanthrene	ND		0.70	5.0
Anthracene	ND		0.49	5.0
Fluoranthene	ND		0.46	5.0
Pyrene	0.50	J	0.48	5.0
Benzo[a]anthracene	ND		0.75	5.0
Chrysene	ND		0.54	5.0
Benzofluoranthene	ND		1.3	10
Benzo[a]pyrene	ND		0.52	5.0
Indeno[1,2,3-cd]pyrene	ND		1.4	5.0
Dibenz(a,h)anthracene	ND		1.4	5.0
Benzo[g,h,i]perylene	ND		1.6	5.0
Bis(2-ethylhexyl) phthalate	35		2.9	20
Butyl benzyl phthalate	ND		6.5	20
Diethyl phthalate	ND		10	10
Dimethyl phthalate	ND		1.2	10
Di-n-butyl phthalate	ND		1.9	20
Di-n-octyl phthalate	15	J	1.1	20

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	99	42 - 140
Nitrobenzene-d5	104	38 - 141
Terphenyl-d14	99	42 - 151

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-2989-1

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-8685

Method: 8270C
Preparation: 3550B

LCS Lab Sample ID: LCS 580-8685/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/14/2006 1415
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685
Units: ug/Kg

Instrument ID: SEA023
Lab File ID: HP01931.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:

LCSD Lab Sample ID: LCSD 580-8685/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/14/2006 1438
Date Prepared: 07/07/2006 1341

Analysis Batch: 580-8140
Prep Batch: 580-8685
Units: ug/Kg

Instrument ID: SEA023
Lab File ID: HP01932.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Naphthalene	103	112	54 - 131	9	26		
2-Methylnaphthalene	118	129	51 - 138	9	27		
1-Methylnaphthalene	117	126	50 - 150	8	30		
Acenaphthylene	107	117	52 - 130	9	28		
Acenaphthene	102	112	50 - 144	9	27		
Fluorene	109	121	50 - 134	11	31		
Phenanthrene	101	110	55 - 133	8	28		
Anthracene	107	113	52 - 135	6	27		
Fluoranthene	98	106	54 - 135	7	36		
Pyrene	101	109	47 - 152	8	31		
Benzo[a]anthracene	117	125	55 - 135	7	27		
Chrysene	90	96	59 - 133	7	26		
Benzofluoranthene	53	55	43 - 154	5	31		
Benzo[a]pyrene	107	113	54 - 138	6	30		
Indeno[1,2,3-cd]pyrene	105	117	45 - 153	11	29		
Dibenz(a,h)anthracene	108	122	50 - 150	12	30		
Benzo[g,h,i]perylene	97	112	54 - 142	14	28		
Bis(2-ethylhexyl) phthalate	110	116	23 - 154	5	60		
Butyl benzyl phthalate	114	119	44 - 147	5	60		
Diethyl phthalate	98	109	51 - 135	11	26		
Dimethyl phthalate	107	119	52 - 133	11	60		
Di-n-butyl phthalate	102	108	43 - 144	5	60		
Di-n-octyl phthalate	112	116	40 - 148	4	31		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-2989-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-8685

Method: 8270C
Preparation: 3550B

MS Lab Sample ID:	580-2989-1	Analysis Batch: 580-8140	Instrument ID: SEA023
Client Matrix:	Solid	Prep Batch: 580-8685	Lab File ID: HP01934.D
Dilution:	1.0		Initial Weight/Volume: 10.2065 g
Date Analyzed:	07/14/2006 1524		Final Weight/Volume: 10 mL
Date Prepared:	07/07/2006 1341		Injection Volume:

MSD Lab Sample ID:	580-2989-1	Analysis Batch: 580-8140	Instrument ID: SEA023
Client Matrix:	Solid	Prep Batch: 580-8685	Lab File ID: HP01935.D
Dilution:	1.0		Initial Weight/Volume: 10.7731 g
Date Analyzed:	07/14/2006 1547		Final Weight/Volume: 10 mL
Date Prepared:	07/07/2006 1341		Injection Volume:

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Naphthalene	94	104	54 - 131	5	26		
2-Methylnaphthalene	110	118	51 - 138	2	27		
1-Methylnaphthalene	108	119	50 - 150	4	30		
Acenaphthylene	94	105	52 - 130	6	28		
Acenaphthene	94	102	50 - 144	3	27		
Fluorene	98	110	50 - 134	5	31		
Phenanthrene	99	106	55 - 133	2	28		
Anthracene	78	93	52 - 135	12	27		
Fluoranthene	75	95	54 - 135	16	36		
Pyrene	80	100	47 - 152	15	31		
Benzo[a]anthracene	110	121	55 - 135	4	27		
Chrysene	80	90	59 - 133	5	26		
Benzofluoranthene	45	49	43 - 154	3	31		
Benzo[a]pyrene	91	99	54 - 138	3	30		
Indeno[1,2,3-cd]pyrene	80	86	45 - 153	2	29		
Dibenz(a,h)anthracene	85	94	50 - 150	4	30		
Benzo[g,h,i]perylene	69	76	54 - 142	4	28		
Bis(2-ethylhexyl) phthalate	114	107	23 - 154	7	60		
Butyl benzyl phthalate	97	109	44 - 147	5	60		
Diethyl phthalate	89	99	51 - 135	5	26		
Dimethyl phthalate	98	107	52 - 133	4	60		
Di-n-butyl phthalate	75	92	44 - 144	14	60		
Di-n-octyl phthalate	108	117	40 - 148	3	31		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-2989-1

Method Blank - Batch: 580-8691

Method: 8081A
Preparation: 3550B

Lab Sample ID: MB 580-8691/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/13/2006 1242
Date Prepared: 07/07/2006 1420

Analysis Batch: 580-8942
Prep Batch: 580-8691
Units: ug/Kg

Instrument ID: SEA035
Lab File ID: ECD20291.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Aldrin	ND		0.11	1.0
alpha-BHC	ND		0.11	1.0
beta-BHC	ND		0.13	1.0
delta-BHC	ND		0.12	1.0
gamma-BHC (Lindane)	ND		0.12	1.0
4,4'-DDD	ND		0.27	2.0
4,4'-DDE	ND		0.23	2.0
4,4'-DDT	ND		0.27	2.0
Dieldrin	ND		0.22	2.0
Endosulfan I	ND		0.12	1.0
Endosulfan II	ND		0.27	2.0
Endosulfan sulfate	ND		0.34	2.0
Endrin	ND		0.42	2.0
Endrin aldehyde	ND		0.25	2.0
Heptachlor	ND		0.14	1.0
Heptachlor epoxide	ND		0.13	1.0
Methoxychlor	ND		1.3	10
Endrin ketone	ND		0.25	2.0
Toxaphene	ND		10	100
alpha-Chlordane	ND		0.12	1.0
gamma-Chlordane	ND		0.12	1.0

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	101	49 - 123
DCB Decachlorobiphenyl	96	40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-2989-1

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-8691

Method: 8081A
Preparation: 3550B

LCS Lab Sample ID: LCS 580-8691/2-B
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/13/2006 1302
Date Prepared: 07/07/2006 1420

Analysis Batch: 580-8942
Prep Batch: 580-8691
Units: ug/Kg

Instrument ID: SEA035
Lab File ID: ECD20292.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-8691/3-B
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/13/2006 1321
Date Prepared: 07/07/2006 1420

Analysis Batch: 580-8942
Prep Batch: 580-8691
Units: ug/Kg

Instrument ID: SEA035
Lab File ID: ECD20293.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Aldrin	77	72	53 - 126	6	24		
alpha-BHC	61	58	41 - 128	5	28		
beta-BHC	71	66	48 - 121	7	32		
delta-BHC	68	62	22 - 153	9	36		
gamma-BHC (Lindane)	67	63	50 - 127	6	29		
4,4'-DDD	68	60	44 - 141	12	41		
4,4'-DDE	64	58	47 - 140	10	40		
4,4'-DDT	58	51	34 - 159	13	47		
Dieldrin	65	59	53 - 134	8	32		
Endosulfan I	64	59	52 - 122	8	31		
Endosulfan II	78	70	53 - 132	11	36		
Endosulfan sulfate	65	58	42 - 128	11	43		
Endrin	67	60	46 - 138	12	36		
Endrin aldehyde	76	71	12 - 179	7	47		
Heptachlor	79	74	50 - 130	7	31		
Heptachlor epoxide	68	63	49 - 123	7	31		
Methoxychlor	67	57	46 - 154	16	46		
Endrin ketone	68	61	45 - 127	11	45		
alpha-Chlordane	64	59	46 - 118	8	33		
gamma-Chlordane	66	61	49 - 122	8	32		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	118	96	49 - 123
DCB Decachlorobiphenyl	107	81	40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-2989-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-8691

Method: 8081A
Preparation: 3550B

MS Lab Sample ID:	580-2989-1	Analysis Batch: 580-8942	Instrument ID: SEA035
Client Matrix:	Solid	Prep Batch: 580-8691	Lab File ID: ECD20295.D
Dilution:	1.0		Initial Weight/Volume: 10.1261 g
Date Analyzed:	07/13/2006 1400		Final Weight/Volume: 10 mL
Date Prepared:	07/07/2006 1420		Injection Volume:
			Column ID: PRIMARY

MSD Lab Sample ID:	580-2989-1	Analysis Batch: 580-8942	Instrument ID: SEA035
Client Matrix:	Solid	Prep Batch: 580-8691	Lab File ID: ECD20296.D
Dilution:	1.0		Initial Weight/Volume: 10.1507 g
Date Analyzed:	07/13/2006 1423		Final Weight/Volume: 10 mL
Date Prepared:	07/07/2006 1420		Injection Volume:
			Column ID: PRIMARY

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aldrin	71	72	53 - 126	2	24		
alpha-BHC	59	61	41 - 128	3	28		
beta-BHC	68	71	48 - 121	3	32		
delta-BHC	66	69	22 - 153	3	36		
gamma-BHC (Lindane)	65	67	50 - 127	3	29		
4,4'-DDD	67	68	44 - 141	2	41		
4,4'-DDE	61	63	47 - 140	3	40		
4,4'-DDT	43	44	34 - 159	3	47		
Dieldrin	59	61	53 - 134	3	32		
Endosulfan I	58	60	52 - 122	3	31		
Endosulfan II	71	73	53 - 132	2	36		
Endosulfan sulfate	66	68	42 - 128	2	43		
Endrin	80	83	46 - 138	3	36		
Endrin aldehyde	71	73	12 - 179	2	47		
Heptachlor	69	72	50 - 130	4	31		
Heptachlor epoxide	62	64	49 - 123	3	31		
Methoxychlor	66	66	46 - 154	0	46		
Endrin ketone	65	67	45 - 127	2	45		
alpha-Chlordane	57	59	46 - 118	3	33		
gamma-Chlordane	59	61	49 - 122	3	32		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	101	99	49 - 123
DCB Decachlorobiphenyl	92	90	40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-2989-1

Method Blank - Batch: 580-8673

Method: 8082
Preparation: 3550B

Lab Sample ID: MB 580-8673/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/10/2006 1434
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673
Units: mg/Kg

Instrument ID: SEA034
Lab File ID: PCB1939.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
PCB-1016	ND		0.0058	0.010
PCB-1221	ND		0.0058	0.010
PCB-1232	ND		0.0058	0.010
PCB-1242	ND		0.0058	0.010
PCB-1248	ND		0.0058	0.010
PCB-1254	ND		0.0015	0.010
PCB-1260	ND		0.0015	0.010

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	106	60 - 123
DCB Decachlorobiphenyl	97	65 - 126

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-8673

Method: 8082
Preparation: 3550B

LCS Lab Sample ID: LCS 580-8673/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/10/2006 1457
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673
Units: mg/Kg

Instrument ID: SEA034
Lab File ID: PCB1940.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-8673/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/10/2006 1521
Date Prepared: 07/07/2006 1126

Analysis Batch: 580-8967
Prep Batch: 580-8673
Units: mg/Kg

Instrument ID: SEA034
Lab File ID: PCB1941.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
PCB-1016	103	107	57 - 128	4	8		
PCB-1260	99	107	65 - 132	8	8		

Calculations are performed before rounding to avoid round-off errors in calculated results.

2989

SUBCONTRACT ORDER

TestAmerica - Portland, OR

PPG0024

SENDING LABORATORY:

TestAmerica - Portland, OR
9405 SW Nimbus Ave.
Beaverton, OR 97008
Phone: (503) 906-9200
Fax: (503) 906-9210
Project Manager: Howard Holmes

RECEIVING LABORATORY:

Severn Trent Laboratories - Tacoma
5755 8th Street East
Tacoma, WA 98424
Phone :253-922-2310
Fax: 253-922-5047

Analysis	Due	Expires	Laboratory ID	Comments	
Sample ID: PPG0024-01	**Soil**	**Sampled:06/27/06 09:17**	[redacted]		
8081A/8082 Pest/PCB	07/17/06 23:59	07/11/06 09:17		C of P LL to STL	* Broken lid
8270C PDX-UIC	07/17/06 23:59	07/11/06 09:17		C of P LL to STL	
Containers Supplied:					
4 oz. jar (A)	4 oz. jar (B)				
Sample ID: PPG0024-02	**Soil**	**Sampled:06/27/06 10:39**	[redacted]		
8081A/8082 Pest/PCB	07/17/06 23:59	07/11/06 10:39		C of P LL to STL	
8270C PDX-UIC	07/17/06 23:59	07/11/06 10:39		C of P LL to STL	
Containers Supplied:					
4 oz. jar (A)	4 oz. jar (B)				
Sample ID: PPG0024-03	**Soil**	**Sampled:06/27/06 12:38**	[redacted]		
8081A/8082 Pest/PCB	07/17/06 23:59	07/11/06 12:38		C of P LL to STL	
8270C PDX-UIC	07/17/06 23:59	07/11/06 12:38		C of P LL to STL	
Containers Supplied:					
4 oz. jar (A)	4 oz. jar (B)				

Released By	Date	Received By	Date
[signature]	7/5/06	[signature]	7/6/06
Released By	Date	Received By	Date

COP0019591

LOGIN SAMPLE RECEIPT CHECK LIST

Client: City of Portland BES

Job Number: 580-2989-1

Login Number: 2989

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	NA	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

TestAmerica
ANALYTICAL TESTING CORPORATION

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave. Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave. Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PPG0024

CLIENT: City of Portland

INVOICE TO: Charles Lytle

REPORT TO: Jennifer Shackelford

ADDRESS:

PHONE: FAX:

P.O. NUMBER: 36238

PROJECT NAME: Portland Harbor

PROJECT NUMBER: Inline Samp.

SAMPLED BY:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [X] STD. [7] [5] [4] [3] [2] [1] [<1]

Petroleum Hydrocarbon Analyses: [5] STD. [4] [3] [2] [1] [<1]

[OTHER] Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE: Pest/PCBs EPA 8081 - Low Level *	PRESERVATIVE: PAH 8270-SIM - Low Level *	REQUESTED ANALYSES: TOC	MATRIX (W, S, O)	# OF CONT.	LOCATION COMMENTS	TA WO ID
1	F0060767	6/27/06 0917	X	X	X	S	3	*	
2	F0060768	1039	X	X	X	S	3	*	
3	F0060769	1238	X	X	X	S	3	*	
4									
5									
6									
7									
8									
9									
10									

RELEASED BY:		DATE: 7/3/06	RECEIVED BY:		DATE:
PRINT NAME: Daniel H. VanMeter	FIRM: City of Portland	TIME: 0948	PRINT NAME:	FIRM:	TIME: 9:15
RELEASED BY:		DATE:	RECEIVED BY:		DATE: 7-3-06
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME: 9:48

ADDITIONAL REMARKS: * Send Low-level Pest/PCBs and Low-level PAH to STL Alleghany (WWEK)

TEMP:

PAGE 1 OF 1

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and for any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice unless otherwise contracted. Sample(s) will be disposed of after 30 days unless otherwise contracted.

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COP0019593

Attachment D
NW Front Avenue Branch
1200-Z Stormwater Monitoring Data

1200-Z STORMWATER MONITORING DATA

BRENNTAG PACIFIC INC

5700 NW FRONT AVE

Org ID: 2252

Parameter (mg/L)	Cu	Pb	Zn	TSS	O&G	pH (stu)
Benchmark	0.1	0.4	0.6	130	10	5.5 - 9.0

Location Code: 01 Description: SUMP @ N PROP EDGE, E DRAINS

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
06-07	5/2/2007	self	0.0624	0.0365	0.428	< 10	< 4.81	6.59	
06-07	11/22/2006	self	0.01	0.00203	0.0631	< 10	< 4.72	6.51	
05-06	6/21/2006	self					< 5.21		
05-06	5/26/2006	self	0.017	0.0044	0.099	< 10		6.13	
05-06	9/30/2005	self	0.0276	0.0134	0.115	< 10	< 4.72	6.8	
04-05	3/30/2005	self						6.29	
04-05	3/23/2005	self	0.056	0.0128	0.574	11	< 5		
04-05	10/19/2004	self	0.0105	0.00161	0.152	< 10	< 5	6.66	18.8
03-04	4/19/2004	self	0.124	0.0497	0.179	68	< 5	5.98	
03-04	1/14/2004	*city*	0.128	0.0914	0.25	142	20.4	4.31	50
03-04	11/17/2003	self	0.136	0.0543	0.309	32	119	0	
02-03	5/16/2003	self	0.124	0.0403	0.29	24	< 4.95	4.79	
02-03	11/12/2002	self	0.0397	0.0163	0.118	< 10	< 5.88	6.25	
01-02	5/13/2002	self	0.069	0.006	0.24	22	< 2	5.97	
01-02	11/28/2001	*city*	< 0.05	< 0.2	0.085	9.2	< 5	5.5	12
01-02	11/20/2001	self	0.004	0.01	0.11	33	12	6.28	
00-01	6/11/2001	self	0.16	0.03	0.91	62	3.9	2.99	
00-01	9/8/2000	self	0.015	0.004	0.93	30	< 2	5	47
99-00	1/10/2000	self	0.05	< 0.08		11	6.4	3.3	

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Location Code: 01 Description: SUMP @ N PROP EDGE, E DRAINS

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
99-00	10/8/1999	self	0.16	< 0.06	0.52	63	3.3	5.2	
98-99	5/7/1999	self	< 0.025	< 0.06	< 0.02	17	< 2	5.4	43
98-99	11/20/1998	self	0.048	< 0.06	0.21	15	2.4	5.8	< 10
98-99	9/22/1998	self	0.51	0.22	0.49	110	22	5.6	130
97-98	6/25/1998	self	0.077	< 0.08	0.27	46	4.9	6.3	55
97-98	10/28/1997	self	0.049	0.11	0.21	42	2.6	6.2	82
96-97	6/4/1997	self	0.14	< 0.06	0.19	35	2.4	5.6	25
96-97	12/16/1996	self							
95-96	6/17/1996	self	1.8	0.23	1.5	42	< 3	5.89	480
95-96	10/17/1995	self	0.49	0.21	0.4	66	5	6.78	58
95-96	7/6/1995	self					8	5.57	
94-95	6/5/1995	self	0.09	0.037	0.55	110		5.43	40

Location Code: 02 Description: CB @ FRONT OF FACILITY

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
06-07	5/21/2007	self	0.0241	0.00133	0.26	< 10	< 4.81	6.87	
06-07	11/22/2006	self	0.00324	0.00153	0.0327	< 10	< 4.72	6.4	
05-06	5/26/2006	self	0.0096	0.0051	0.054	18	< 2	6.21	
05-06	9/30/2005	self	0.0117	0.003	0.0837	< 10	< 4.72	6.83	
04-05	3/30/2005	self						6.63	
04-05	3/23/2005	self	0.0152	0.00218	0.11	< 10	< 5		
04-05	10/19/2004	self	0.0091	0.0013	0.0647	< 10	< 5	6.72	15.4
03-04	4/19/2004	self	0.0732	0.017	0.325	27	< 5	6.28	
03-04	1/14/2004	*city*	0.0122	0.00811	0.0654	23	< 5	5.7	13
03-04	11/17/2003	self	< 0.02	< 0.02	0.289	< 10	< 5	0	
02-03	5/16/2003	self	0.0402	0.0684	0.284	245	< 5	6.19	

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Location Code: 02 Description: CB @ FRONT OF FACILITY

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
02-03	11/12/2002	self	0.02	0.0172	0.107	26	< 5.71	6.46	
01-02	5/13/2002	self	0.053	0.023	0.28	40	5.6	6.02	
01-02	11/28/2001	*city*	< 0.05	< 0.2	0.057	2.2	< 5	5.4	< 5
01-02	11/20/2001	self	0.03	0.01	0.11	88	3	6.46	
00-01	6/11/2001	self	0.51	0.04	0.26	212	7.7	6.29	
00-01	9/8/2000	self	0.023	0.02	1.25	32	2.8	4.6	< 10
99-00	3/27/2000	*city*	0.03	< 0.1	0.15	30	< 5	5.9	49
99-00	1/10/2000	self	0.01	0.08		14		5.8	
99-00	10/8/1999	self	0.017	< 0.06	0.3	14	3	5.9	
98-99	5/7/1999	self	0.035	0.087	0.16	78	< 2	5.5	
98-99	2/5/1999	*city*	0.06	< 0.1	0.25	22	< 5	6.2	23
98-99	11/20/1998	self	0.017	< 0.06	0.17	47	3.2	6	17
98-99	9/22/1998	self	0.065	< 0.2	0.29	94	< 2	5.6	63
97-98	6/24/1998	self	0.061	0.096	0.37	150	2.3	5.8	< 10
97-98	5/12/1998	*city*	0.055	< 0.1	0.295	13	14	6.5	39
97-98	10/28/1997	self	0.82	0.28	0.84	72	4.8	6.2	114
96-97	6/4/1997	self	0.049	< 0.06	0.19	47	2.9	5.9	28
96-97	3/3/1997	*city*	0.017	< 0.02	0.083	35	12		42
95-96	2/6/1996	*city*	0.0289	0.0262	0.138	59.4	129	6	19
94-95	6/5/1995	self	0.05	0.015	0.19	40		6.56	15
94-95	4/7/1995	*city*	0.012	< 0.02	0.106	40.8	9.2	6.9	41

Location Code: X-T6 Description: SOLVENT TANK 6 DISCHARGE

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
96-97	1/3/1997	self						6	
96-97	12/9/1996	self						7.3	

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Location Code: X-T6 Description: SOLVENT TANK 6 DISCHARGE

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
96-97	11/20/1996	self						7.2	
96-97	10/22/1996	self						6.5	

Location Code: X-T8 Description: SOLVENT TANK 8 DISCHARGE

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
96-97	12/30/1996	self						6.5	
96-97	12/4/1996	self						6.5	
96-97	11/19/1996	self						6.5	

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1200-Z STORMWATER MONITORING DATA

PARAMOUNT PETROLEUM CORPORATION

Org ID: 2576

5501 NW FRONT AVE

Parameter (mg/L)	Cu	Pb	Zn	TSS	O&G	pH (stu)
Benchmark	0.1	0.4	0.6	130	10	5.5 - 9.0

Location Code: 01 Description: VALVE 33 NEAR FRONT STREET

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
06-07	3/2/2007	self	0.0024	0.0026	0.0775	< 10	< 4.76	6.78	
06-07	10/16/2006	self	0.013	0.017	0.2	44	9.9	7.11	
05-06	4/14/2006	self	0.011	0.006	0.11	19	3.4	6.96	
05-06	11/1/2005	self	< 0.005	< 0.005	0.07	4	3.2	6.89	
04-05	3/23/2005	self	< 0.005	< 0.005	0.023	12	30.2	5.9	
04-05	1/7/2005	self	0.018	< 0.005	0.035	7	4.4	5.87	
03-04	3/25/2004	self	0.007	< 0.001	0.027	4	3.9		18
03-04	11/19/2003	self	0.009	0.022	0.02	22	3.4	6.22	740
02-03	4/7/2003	self	0.018	< 0.001	0.13	91	4	6.18	29
02-03	3/7/2003	*city*	0.00321	0.00121	0.0418	3.5	18.5	5.3	< 5
02-03	11/12/2002	self	0.017	< 0.001	0.068		< 2		< 10
01-02	6/30/2002	self	0.024	0.026	0.95	18	5.7	6.24	< 10
01-02	10/22/2001	self	< 0.001	< 0.001	0.08	29	11.8	6.5	16
00-01	3/15/2001	self	0.027	< 0.001	0.51	10	43	5.7	100
00-01	3/15/2001	*city*	< 0.05	< 0.2	0.149	20	< 5	5.8	37
00-01	12/15/2000	self	0.014	0.007	0.15	21	6	6.6	44
99-00	5/3/2000	self	< 0.01	< 0.09	0.13	26	4.2	5.8	17
99-00	2/28/2000	self	< 0.01	< 0.08	1.4	12	1.9	5.7	< 10
99-00	12/9/1999	*city*	< 0.03	< 0.1	0.073	15	7.4	5.9	3

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Location Code: 01 **Description: VALVE 38 NEAR FRONT STREET**

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
99-00	11/8/1999	self	0.012	< 0.04	0.31	4.5	2.1	6.1	12
98-99	2/9/1999	self	0.034	< 0.13	0.12	55	< 2	7.2	
98-99	12/7/1998	*city*	< 0.03	< 0.1	0.068	13	8.9	6.4	8
98-99	11/6/1998	self	0.021	< 0.062	0.073	16	2.6	5.8	19
97-98	3/10/1998	self				11		5.9	
97-98	3/3/1998	self	0.047	0.16	0.27	60	4	2.1	36.2
97-98	11/25/1997	self	0.023	< 0.06	0.11	21	2.2	6.3	
97-98	8/28/1997	*city*	0.025	< 0.3	0.299	141	6.2	6.1	
96-97	12/10/1996	*city*	0.007	0.02	0.075	12	7.8	7.3	8
95-96	3/14/1996	self	< 0.02	< 0.03	0.15	19	8	6.9	52
95-96	11/22/1995	*city*	0.013	< 0.02	0.072	50		7.8	23
95-96	11/6/1995	self	0.04	0.03	0.21	45	< 5	6.4	32
95-96	10/30/1995	self					< 5		
94-95	6/12/1995	self						6.7	48
94-95	5/1/1995	*city*	0.01	0.02	0.132	35	9.1	5.5	20
94-95	3/28/1995	self			0.07	18	5		

Location Code: 02 **Description: VALVE 39 @ SE CORNER FACILITY**

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
06-07	3/2/2007	self	0.00286	0.00278	0.027	< 10	< 5	6.9	
06-07	10/16/2006	self	0.007	< 0.005	0.054	10	9.3	6.68	
05-06	4/14/2006	self	0.012	0.013	0.051	42	< 2	7.02	
05-06	11/1/2005	self	0.009	0.028	0.12	73	3	6.85	
04-05	3/23/2005	self	< 0.005	< 0.005	0.22	34	14.9	6.51	
04-05	1/7/2005	self	0.041	< 0.005	0.041	43	< 2	6.3	
03-04	4/21/2004	self	0.02	0.005	0.027	46	< 2	6.73	< 10

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Location Code: 02 Description: VALVE 39 @ SE CORNER FACILITY

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
03-04	11/19/2003	self	0.009	0.015		18	3	5.96	760
02-03	4/7/2003	self	0.013	0.007	0.052	12	2	6.31	< 10
02-03	3/7/2003	*city*	0.00358	0.0109	0.0428	10	< 5	5.5	< 5
02-03	11/12/2002	self	0.02	< 0.001	0.032		< 2		11
01-02	6/30/2002	self	0.012	0.009	0.034	12	15.5	6.59	< 10
01-02	12/13/2001	self	0.01	0.002	0.14	22	< 2	6.37	26
00-01	3/16/2001	self	0.02	< 0.01	0.01	54	< 2	6.3	< 10
00-01	3/15/2001	*city*	< 0.05	< 0.2	0.158	176	6.5	6.4	22
00-01	12/15/2000	self	0.009	< 0.001	0.06	3.5	< 2	6.1	17
99-00	2/28/2000	self	< 0.01	< 0.08	0.07	7	2.4	6.1	< 10
99-00	12/9/1999	*city*	0.031	< 0.1	0.079	9	6.4	6	< 2
99-00	11/8/1999	self	0.012	< 0.04	0.048	13	< 2	6.4	18
98-99	2/9/1999	self	0.032	< 0.13	0.094	14	2	6.7	< 10
98-99	12/7/1998	*city*	< 0.03	< 0.1	< 0.05	2.6	< 5	6.5	3
98-99	11/6/1998	self	0.02	< 0.062	0.069	8.5	< 2	6.5	14
97-98	3/3/1998	self	0.012	0.13	0.031	5.7	3.1	6.4	< 10
97-98	11/25/1997	self	0.023	< 0.06	0.07	3.5	< 2	6.2	
97-98	8/28/1997	*city*	0.02	0.3	0.057	21	20	6.4	
96-97	12/10/1996	*city*	0.008	< 0.02	0.437	171	14	6.6	10
95-96	3/14/1996	self	0.02	< 0.03	0.23	20	11	6.9	41
95-96	11/6/1995	self	0.04	0.03	0.22	17	< 5	6.4	25
95-96	10/30/1995	self					0.5		
94-95	6/12/1995	self						6.7	6.5
94-95	5/1/1995	*city*	0.011	< 0.02	0.086	21	11	5.8	10
94-95	3/28/1995	self	0.03	0.02	0.13	9.8	5		

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Location Code: XT47 Description: HYDROSTATIC TEST H20 BATCH

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
96-97	10/3/1996	self						7.2	

Location Code: XT71 Description: HYDROSTATIC TEST H20 BATCH

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
95-96	5/8/1996	self		< 0.025			< 0.5	6.8	

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From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Monday, April 07, 2008 7:06 AM
To: Lauck, Terry S.; Lundeen, Bill J.; Smith, Myron - Environmental:; Kober, Steven; Lyons, Thomas:; Collins, Bill:
Cc: Jessica Eckart; William Edmund
Subject: FW: USCG requesting assistance - Portland Terminal (0922) City Outfall 22

FYI - The Coast Guard is apparently raising concerns Re: the number of sheen episodes being reported at Outfall 22.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
Noll Environmental, Inc.
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: ROMERO Mike [mailto:ROMERO.Mike@deq.state.or.us]
Sent: Friday, April 04, 2008 3:46 PM
To: Wayne.Lau@uscg.mil
Cc: CHRISTENSEN Jeff; ZOLLITSCH Michael; HOY Ray; VAN-PATTEN Kimberlee; GILLES Bruce A; JOHNSON Keith; ANDERSON Jim M; THIESSEN Kenneth; Noll, Michael D(DXT Services); Jessica Eckart
Subject: RE: USCG requesting assistance

Wayne,

Thank you for speaking with me about about the history of releases, the actions taken and planned future actions to deal with periodic petroleum sheens observed in Willbridge Cove. I also provided Ray Hoy with a brief summary a while back for distribution to the DEQ ER folks.

As we discussed, petroleum sheens have periodically appeared from both seeps at the shore line in the cove and from the City Of Portland Outfall-22 that runs through riverside portion of the Conoco Phillips facility. Sheens have also appeared from minor releases at the facilities' loading docks and from neighboring McCall Oil. Three bulk fuel terminals (Kinder Morgan, Chevron and Conoco Phillips) are under an order to complete a Remedial Investigation/Feasibility Study and Portland Harbor Source Control. Working together, they have conducted some interim actions which involved excavating near shore petroleum contaminated soil, installing two sheet pile cut-off walls with hydraulic containment systems behind them to remove and contain soil, groundwater and LNAPL contamination near the river. No sheen from historic seeps has been documented since the excavation and most recent wall installation.

On the stormwater pathway end of things, Conoco has lined and repaired their private stormwater system which had confirmed leaks of contaminated groundwater entering the system. Chevron has not confirmed contaminated groundwater leaks entering their stormwater system but is investigating/planning some system repairs and improvements. Kinder Morgan does not drain to City Outfall-22. Chevron and Conoco are pairing up and working with the City of Portland to line a portion the 60-in diameter section of the Outfall-22 system. Under our current understanding of the contamination at the site, this lining of this portion of the OF-22 system should stop the recurring sheens coming out of the end of the outfall from know groundwater infiltration.

Please note that Conoco has been maintain floating absorbing booms at the end of the outfall-22 on a daily basis for several years. They do daily inspections and have been reporting occurrence of sheen as they occur. Conoco recently changed environmental contractors which may be more diligent in their notification of these minor sheens and which may account for the appearance of a increased frequency of events. I have asked Sonoco's contractor to provide more detail in their reporting of these by giving an estimate of magnitude of the sheen and to clearly state if only coming from the Outfall in order to better assist the responding agency in determining priority of the response needed. I have also asked them to check the historic seep locations when a sheen appears at the end of the out fall and report this information along with the other necessary notification information.

As we discussed, you may find it useful to come in and meet with me and do a brief file review of the relevant documents that will help to give an even a better understanding of the site and the potential sources of petroleum sheens to the Willbridge Cove. Please contact Dawn Weinberger in our office at (503) 229-6729 to schedule a file review time. At that time, I can provide some useful figures and maps that should find useful in your future response to reported sheens or releases at the Willbridge Cove.

Mike

Michael Romero
Northwest Region Cleanup Section
(503) 229-5563
Romero.Mike@deq.state.or.us

-----Original Message-----
From: VAN-PATTEN Kimberlee
Sent: Thursday, April 03, 2008 4:17 PM
To: ROMERO Mike
Cc: 'Wayne.Lau@uscg.mil'; CHRISTENSEN Jeff; ZOLLITSCH Michael
Subject: USCG requesting assistance

Mike, I have received a request from the USCG to provide them with a timeline of events at the Conoco Phillips cleanup site which has caused the on-going sheen at outfall #22. They are looking for some background and current status of this cleanup and what is causing the on-going problem. They are also looking for any information that may link the project at Conoco Phillips to the issues that have occurred recently on Saltzman Creek. He specifically mentioned a wall that has been constructed by Conoco Phillips that ends at their property line. USCG fears historical contamination may be running down and around the wall. Can you please help?

Wayne Lau is the USCG contact I am working with. I have cc'd him on this correspondence.

Kimberlee Van Patten

Duty Officer
DEQ Emergency Response
503-229-5256

From: Jessica Eckart
Sent: Tuesday, April 08, 2008 4:07 PM
To: Noll, Michael D(DXT Services)
Cc: William Edmund
Subject: Sheen observation

Mike,
Sheen was observed discharging from Outfall 22 (Willamette River, river mile 7.5). A sample was collected at the outfall using a net sampler. Secor personnel placed additional absorbent pads within the containment booms to capture any additional sheen. I notified the following agencies of the sheen: ORS (report number 2008-0859), NRC (report number 867352), COP BES, and Arcadis (Grant Sprick, Chevron). I also spoke with DEQ about the sheen and the duty officer was going to talk with Mike Romero. I have not heard from the US Coast Guard about this sheen observation.

Regards,
Jessica

Jessica Eckart, R.G.
Geologist
SECOR International, now Stantec
Ph: 503-691-2030
Fx: 503-692-7074
jessica.eckart@stantec.com
stantec.com

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Please consider the environment before printing this email.

From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Tuesday, April 15, 2008 6:44 PM
To: Lauck, Terry S.; Lundeen, Bill J.; Smith, Myron - Environmental:; Kober, Steven; Collins, Bill:; Lyons, Thomas:
Cc: Jessica Eckart; William Edmund
Subject: ODEQ Questions Re: 60-Inch City Outfall Lining (0922 Portland)

All - Secor called ODEQ (Mike Romero) Re: his questions on the schedule for submitting City of Portland permits and lining the City of Portland 60-inch storm sewer outfall pipe between Front Avenue and Outfall 22. Apparently, EPA has been asking ODEQ questions about the number of recently reported sheen episodes at the outfall, since the sheen episodes are reported to the NRS. EPA wanted to know if these are uncontrolled sheen discharges to the river. Romero told the EPA that the sheen episodes have been contained within booms and have been addressed promptly with absorbent materials, etc. The impression is that EPA is putting some pressure on ODEQ to resolve the sheen episodes. Romero has assured EPA and Secor that ODEQ is in control of this issue, for now.

Romero wants to know when the permits will be submitted to the City to line the 60-inch pipe. ODEQ wants a copy of the permit submittal to the City. ODEQ also wants a draft Work Plan for the pipe lining project and a written Spill Management Plan for how the sheen episodes are addressed (this is separate from the terminal's SPCC Plan). Secor I be preparing these documents for review by COP and submittal to ODEQ. ODEQ also asked about lab testing results from the sheen episodes, since I have routinely been reporting that samples were collected when sheen was observed. A total of 7 samples have been submitted to B&B Lab in Texas; results for 4 samples have been received by Secor, which have been loaded into LiveLink. I need some guidance as to how we want to present these lab reports to ODEQ (cover letter, summary report with attachments?) and the timing for releasing these data (as they become available and are reviewed by COP, after the pipe is lined?).

Secor has been in constant contact with Stratus, the subcontractor who will be the lead on the pipe lining project and the necessary permits. Stratus has had some issues to deal with Re: access to the 60-inch pipe via City manhole AAM-077, located on the COP site just north of Front Avenue. This particular manhole was installed offsite from the pipe by a few feet, so there is no direct access to the 60-inch pipe. It also has a small (24-inch diameter) opening and was poured in place (no removable lid). In order to get adequate access to get the pipe lining material into the 60-inch pipe, the concrete top of the manhole will need to be exposed, cut off, and repaired. Shoring and engineered materials will be required to expose the top portion of the manhole so it can be safely cut. There are several drawings and calculations that need to be reviewed and stamped by an Oregon Professional Engineer. Stratus plans to have all the permit documentation to Secor for review and submittal by April 28th. ODEQ has indicated that they will help get the permitting process completed by coordinating the City permit review and any additional US Army Corps or other in-water permits issues resolved to help expedite the pipe lining.

As far as costs, Stratus has revised their cost estimate for lining the 60-inch pipe from the original $650,000 to

$700,000 based on the engineering and water handling issues, etc. Stratus also presented an estimate of $950,000 to line the 48-inch City storm drain line (1,240 feet).

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Wednesday, April 16, 2008 5:35 PM
To: William Edmund
Cc: John Bollier; Jessica Eckart; Carl Swanson
Subject: RE: Sheen Observation - Portland Terminal Outfall 22

Bill - Send me an update or call me, and I will email your sheen report data and photos to COP. Thanks.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

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Noll Environmental, Inc.
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: William Edmund [mailto:wedmund@secor.com]
Sent: Wednesday, April 16, 2008 12:16 PM
To: Noll, Michael D(DXT Services)
Cc: John Bollier; Jessica Eckart; Carl Swanson
Subject: Sheen Observation - Portland Terminal Outfall 22
Importance: High

Mike:

I just left you a voice message about a sheen observation witnessed by SECOR's Norman Swanson at approximately 11:00 A.M. by Outfall 22 at the Portland terminal River mile 7.5.

The sheen has apparently stopped as of 11:45 observation. And absorbent pads have adequately assessed the mitigation of the sheen. I will wait for further direction from ConocoPhillips. Norman Swanson has contacted Tom

Lyons to notify him of the sheen observation.

Thx.

William C. Edmund, P.G., R.E.A.I
Senior Geologist
SECOR International, now Stantec
Phone: (949) 257-7545
Fax: (503) 692-7074
bill.edmund@stantec.com
stantec.com

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From: Carl Swanson
Sent: Wednesday, April 16, 2008 3:28 PM
To: William Edmund
Subject: RE: Sheen Observation - Portland Terminal Outfall 22

Mr. Edmund,

Just spoke with Arby and he says everything looks good. The sheen has dissipated, stayed within the booms and the pads we placed are still where we put them. It did not appear that anything more had flowed out of Outfall 22 today. I am available anytime.

FYI: today I used the last of the sheen net samplers. We have tried to reorder but we have not paid a past due bill and the company (General Oceanics in Florida) will not send us more. I tried to place an order with my AM EX card by personal email and they would not accept this either. Jessica said it would not be paid until we get a new budget. It is $570 for the previous order and another $480 for the next order they have ready to ship. Until we get more sheen nets the samples will be just a grab sample into a jar which has not worked very well before.

Thank you,

Norman Swanson
Staff Scientist
SECOR International, now Stantec
7730 SW Mohawk St, Tualatin, OR 97062
Cell: (503) 383-8905
Fx: (503) 692-7074
nswanson@stantec.com
SAFE ALWAYS!
stantec.com
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Please consider the environment before printing this email.

From: William Edmund
Sent: Wednesday, April 16, 2008 12:16 PM
To: Noll, Michael D(DXT Services)
Cc: John Bollier; Jessica Eckart; Carl Swanson
Subject: Sheen Observation - Portland Terminal Outfall 22
Importance: High

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Thx.

William C. Edmund, P.G., R.E.A.I
Senior Geologist
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From: Noll, Michael D(DXT Services) [mailto:Michael.D.Noll@contractor.conocophillips.com]
Sent: Wednesday, April 16, 2008 6:18 PM
To: Lauck, Terry S.; Lundeen, Bill J.; Smith, Myron - Environmental:; Kober, Steven; Lyons, Thomas:; Fossum, Jeff E; Collins, Bill:
Cc: Jessica Eckart; William Edmund
Subject: Sheen Observation - Portland Terminal (0922) - City of Portland Outfall 22
Importance: High

All - I am waiting for an update from Secor, but a small sheen episode was observed coming from City of Portland outfall 22 late this morning. The sheen was contained, and was of short duration (<1 hour). Secor deployed absorbent pads and collected a sheen sample for submittal to B&B Lab in Texas. Secor planned to report the sheen episode to the required agencies and re-check the site this afternoon, and send me photos. I will forward their update.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
Noll Environmental, Inc.
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: William Edmund [mailto:wedmund@secor.com]
Sent: Wednesday, April 16, 2008 12:16 PM
To: Noll, Michael D(DXT Services)
Cc: John Bollier; Jessica Eckart; Carl Swanson
Subject: Sheen Observation - Portland Terminal Outfall 22
Importance: High

Mike:

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Thx.

William C. Edmund, P.G., R.E.A.I
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From: Greene, Jimmy R (LDZX)
Sent: Monday, August 11, 2008 7:00 AM
To: Kober, Steven
Cc: Noll, Michael D(DXT Services); Smith, Myron - Environmental:; Lyons, Thomas:
Subject: FW: 0922 Portland Terminal - Signed Maintenance Agreement Needed

Importance: High

Attachments: Maintenace agreement BES.pdf

AOC
0922

PRIVILEGED AND CONFIDENTIAL
ATTORNEY-CLIENT COMMUNICATION

Steve --

My comments/questions on the Maintenance Agreement are as follows (I apologize but was out of the office for much of last week--I tried to call you on Friday to discuss some of these issues, but could not catch up with you). Some of these comments are germane to the allocation of risk for injury/damage, and therefore, I call attention to the allocation of risk issue for consideration by the BU. Please call me if you have any questions (I will in the office through Thursday, but then out from Friday through Sunday, August 24).

1. **Introductory Paragraph**: This agreement is between the City of Portland and the property owner. In the e-mail chain below, it appears that ConocoPhillips is the facility operator (is it also the property owner?). I am not certain the facility operator can or should sign this agreement.

2. **Introductory Paragraph**: It appears that the property owner granted an easement to the City of Portland for the City to place a sewer on the owner's property. Through this agreement, the property owner is seeking to "encroach" on that easement. If this is the correct fact pattern, I am not certain that the facility operator has any stake or authority in entering this agreement (see above).

3. **Numbered Paragraph 1**: I recommend inserting "reasonable" between "any" and "repairs." Otherwise, arguably the obligation runs to all repairs, not just those that are reasonable.

4. **Numbered Paragraph 1**: What are the "permitted facilities?" Are they the buildings referenced in Paragraph 9? If so, I recommend moving Paragraph 9 to the front of the agreement and defining the phrase "permitted facilities."

5. **Numbered Paragraph 2**: Based on this language, the City would have a strong argument that the Fee Owner agreed that the City has sole discretion to assess the appropriate amount of repair/maintenance costs.

6. **Numbered Paragraph 3**: The assumption of risk is arguably broad. For example, if the City is working on its sewer and causes damage to the "permitted facilities," negligently or otherwise, this clause arguably allocates that risk to the Fee Owner.

7. **Numbered Paragraph 4(c)**: This paragraph states that the agreement is subject to the terms of another agreement.

8. **Numbered Paragraph 6(a)**: This indemnity is arguably broad. It does not cover the City's negligence (i.e., the Fee Owner would arguably be responsible for the negligent acts of the City).

Also, it arguably covers all claims relating to the presence of the sewer itself, rather than be restricted to impacts arising from or to the permitted facilities (i.e., I would assume that the parties have already negotiated for and allocated risk regarding to the sewer encroachment itself in the separate agreement referenced in Numbered Paragraph 4(c)). This paragraph does not mention the "permitted facilities" at all.

9. Numbered Paragraph 6(b): I recommend deleting the phrase "or arise from" in the last sentence (inclusion of the phrase creates some risk that even the City's negligent and/or willful acts are subject to indemnity, if somehow the claim nonetheless "arises from" the Fee Owner's activities).

10. Numbered Paragraph 8: This paragraph shifts risk of loss to the Fee Owner (i.e., no consequentials allowed even for City's negligent acts).

James R. Greene | Senior Counsel | ConocoPhillips Company
600 North Dairy Ashford | ML 2078 | Houston, TX 77079-1175
281.293.3493 (office) | 562.217.1756 (cell) | 281.293.3700 (fax)

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From: Kober, Steven
Sent: Monday, August 04, 2008 12:27 PM
To: Greene, Jimmy R (LDZX)
Cc: Noll, Michael D(DXT Services); Smith, Myron - Environmental:; Lyons, Thomas:
Subject: FW: 0922 Portland Terminal - Signed Maintenance Agreement Needed
Importance: High

Jimmy, I was given your name as a possible contact to help me. Could you please review the enclosed document and advise me is we should sign it or forward to someone who would be able to help me. Thanks...

Steve Kober
ConocoPhillips
Northwest Area Supervisor
Office 503-248-1538
Fax 503-248-1522
Cell 206-730-5430

From: Noll, Michael D(DXT Services)
Sent: Monday, August 04, 2008 10:02 AM
To: Kober, Steven
Cc: Smith, Myron - Environmental:

Subject: FW: 0922 Portland Terminal - Signed Maintenance Agreement Needed
Importance: High

Steve - Attached is the Maintenance Agreement I just left you a voicemail about. Tom Lyons is on vacation until next week, so I am asking you the question - Is this a document that the Terminal would be willing to sign on behalf of COP? This is an Agreement that the City of Portland had intended to have signed for the sheet pile cutoff wall and concrete apron installed at the 60-inch storm sewer pipe in about 2001. Obtaining the necessary signatures is now a requisite for obtaining the City permit to CIPP line the 60-inch pipe this September, so it is imperative to get this document signed and returned to the City as soon as we can. Please advise on the Terminal's ability to sign this Maintenance Agreement as facility operators. Thank you.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476
Michael.D.Noll@contractor.conocophillips.com

From: Noll, Michael D(DXT Services)
Sent: Thursday, July 31, 2008 12:02 PM
To: Hunter, Brett (BLHU)
Cc: Smith, Myron - Environmental:; William Edmund; Sprick, Grant; Lauck, Terry S.
Subject: 0922 Portland Terminal - Signed Maintenance Agreement Needed
Importance: High

Maintenace
greement BES.pdf (.

Brett - The City of Portland is requiring that both COP and Chevron sign the attached Maintenance Agreement associated with the permit to install the cutoff wall and concrete apron around the City 60-inch outfall pipe back in about 2001. The City realized recently that the Maintenance Agreement was never presented to the permitees (Chevron and Tosco) for signature. This fact was revealed during a meeting with the City in early 2008 to discuss the planned 60-inch CIPP lining project.

The City of Portland will not issue our current permit to line the 60-inch storm sewer pipe until the Maintenance Agreement is signed by both COP and Chevron. Getting this document signed and returned to the City in a timely manner is critical to getting the permit and making sure the CIPP lining contractor (Insitu Form) holds their schedule open to accommodate this work, currently planned for a mid-September start date. Please contact me ASAP to discuss the steps needed to get this document signed and submitted to the City ASAP. Thanks for your help.

Michael D. Noll

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

September 15, 2008

ADC 0922

AGENCY CODE.

Rick Fetterly, P.E.
Senior Project Manager
Stantec Consulting
7730 Southwest Mohawk Street
Tualatin, Or 97062

Re: EPA Request for Project Documents
~~ECSI #~~ 1549 – Conoco Phillips Willbridge Terminal

Dear Mr. Fetterly:

The Portland Harbor Superfund Site Memorandum of Understanding (MOU), which the Department of Environmental Quality (DEQ) is a signatory, requires the distribution of deliverables submitted to DEQ by responsible parties pursuant to DEQ agreements or orders to be distributed to the U.S. Environmental Protection Agency (EPA), the six participating Tribes and project Natural Resource Trustees.

EPA has recently requested copies of all future upland project work plans and reports (including monthly or quarterly progress reports) for all sites. Consequently, DEQ requests that electronic copies and one hard copy of these documents be forwarded to:

Kristine Koch
Remedial Project Manager
USEPA, Office of Environmental Cleanup
1200 Sixth Avenue, M/S ECL-115
Seattle, WA 98101

Koch.Kristine@epamail.epa.gov

Under the MOU, EPA has the option of providing review and comment on key documents related to Portland Harbor upland facilities. DEQ will be working with EPA to identify these documents and accommodate their review within the project schedule.

Feel free to contact me at (503) 229-5563 if you have any questions.

DEQ-NC1

Sincerely,

Michael Romero
Project Manager
NWR Cleanup Section

cc: Mike Noll, Noll Environmental
Terry Lauck, Conoco- Phillips
#1549 Site File

COP0019619

ConocoPhillips

Colleen Hagemann
Property Tax, Real Estate, Right of Way and Claims
1232 Park Street, Suite 300
Paso Robles, CA 93446
Phone: (805) 226-2649
Fax: (805) 239-4410

CLOSING LETTER

October 28, 2009

Myron Smith
1230 W. Washington, Ste. 212
Tempe, AZ 85281

Subject:	Reverse Access Agreement – Right of Entry Agreement granting Chevron access to repair the 60 inch storm water sewer pipe, connecting Manhole "MH-77" to Outfall "22" as well as groundwater sampling and remediation activities.
AOC Site #:	0922
Acquisition #:	0608-A
Site Address:	5528 Doane Avenue, Portland, Oregon
Tobin #:	PRW31895
Licensor/Owner:	ConocoPhillips Company
Property Location:	5528 Doane Avenue, Portland, Oregon
APN #:	1N1-E19-100
Licensee Contact:	Chevron U.S.A. Inc. 553111 Doane Avenue Portland, Oregon 97021 Attn: Brett Hunter Phone: (925) 543-2371
Date Contract Signed:	July 6, 2009
Expiration Date:	March 31, 2022, or completion of the Work
Pre- Notification:	Chevron shall notify ConocoPhillips 72 hrs prior to entering the Property.

Dear Myron,

Enclosed please find a copy of the above referenced document which has been signed by Hongyan Xun, Assistant Secretary for Chevron U.S.A, granting access to the above referenced property to perform the scope of work as referenced in the subject line above. Please maintain this copy for your file. As you are aware, the original of this document is being forwarded to Real Property Administration for tracking in Tobin and future reference.

Please do not hesitate to contact me at (805) 226-2649 should you have any questions or concerns regarding this agreement. Thank you!

Sincerely,

Colleen Hagemann
Contracts Associate

cc: Marilynn Jackson, Real Property Maintenance

Scanned and Emailed: 10/28/09

COP0019620

RIGHT OF ENTRY AGREEMENT

This Agreement ("Agreement") is made and entered into on **July 6, 2009**, by and between ConocoPhillips Company ("Licensor") and **Chevron U.S.A. Inc.** ("Licensee"). Licensor and Licensee, collectively, shall sometimes hereinafter be referred to as the "Parties".

Recitals

WHEREAS, Licensor is the legal and rightful owner of a certain parcel of real property located at **5528 Doane Avenue, Portland Oregon,** also described as ConocoPhillips Company's Portland Terminal, and further identified by the **Multnomah** County Assessor as Parcel No. **1N1-E19-100** and (the "Property");

WHEREAS, Licensee now desires to enter the Property of Licensor for the purpose of repairing the 60 inch storm water sewer pipe, connecting Manhole "MH-77" to Outfall "22", inside the boundaries of the Property, as well as groundwater sampling and remediation activities, including, but not limited to the following activities, located and labeled as indicated on **Exhibit "A"**, attached hereto and incorporated herein (the "Work"):

- Installation of steel plates over non-reinforced underground pipelines in the sandlot area to protect the pipelines from heavy vehicular traffic;
- Installation of a gravel roadway in the sandlot area to accommodate heavy vehicular traffic;
- Installation of a cofferdam and pumping equipment to remove water from the 60" storm sewer pipe and prevent further accumulation of water from Outfall "22";
- Placement of a Baker tank for temporary storage of groundwater removed from the 60" pipe;
- Removal of protruding bolts from the inner surface of the 60" pipe;
- Video recording of the inside of the 60" pipe;
- Removal of the chain link fence along the southern perimeter of the sandlot and replacement with a US Coast Guard approved temporary fence;
- Saw cutting and removal of the top of the concrete vault located beneath Manhole "MH-77";
- Replacement and repair of the vault top to conform with the diameter required for liner installation;
- Installation of a water diversion system to prevent water from entering Manhole "MH-77" from the terminal side of the pipe;
- Installation of the epoxy cure in place pipe liner from Manhole "MH-77" to Outfall "22";
- Demobilization of all pipe lining equipment;
- Removal of all temporary water diversion/collection devices;
- Removal of the temporary fence and replacement of the permanent fence along the southern perimeter of the sandlot;
- Groundwater sampling and cutoff wall maintenance; sheen monitoring and sheen cleanup at Outfall "22";
- Remediation for cutoff walls to include operations and maintenance of equipment on the Property, in-well equipment, and storage of remediation materials in the Terminal Asphalt shed.

WHEREAS, A Gantt chart, listing the proposed schedule for the Work, as of the date of the Agreement, is provided as **Exhibit "B"**, attached hereto and incorporated herein by reference. Said proposed schedule and the above activities list are subject to change based on site conditions and other contingencies; and

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WHEREAS, the Parties now desire to enter into this Agreement to provide for the requested access for the purposes of the Work and to ensure that the Property and Licensor's interests are adequately protected;

NOW THEREFORE, in consideration of the granting of the foregoing, the mutual premises, covenants, conditions and agreements hereinafter set forth, and other good and valuable consideration, the receipt and adequacy of which are acknowledged, the Parties agree as follows:

1. Incorporation by Reference. The above recitals are hereby incorporated by reference into this Agreement.

2. Right of Entry. Licensee and its employees, agents, consultants, contractors, or other authorized representatives shall, as necessary, have the limited privilege to enter the Property subject to the specific conditions of this Agreement, for the purpose of the Work.

3. Term. This License shall commence on **July 6, 2009** (Effective Date) and shall continue until the earlier of **March 31, 2022,** or completion of the Work, unless further extended by written agreement between the Parties. Notwithstanding the foregoing, Licensor, in its discretion, shall have the right to terminate this Agreement upon at least thirty (30) days prior written notice to Licensee. Licensor acknowledges that in the event this License is terminated, Licensee may require additional time beyond thirty days to obtain necessary approvals from regulatory agencies in order to remove equipment installed pursuant to this License, if any.

4. Prior Notice of Access; Coordination. Licensee shall notify Licensor's personnel identified in Section 10 herein (Notices) in advance of any field mobilization of the Work. In addition, Licensee shall notify Licensor verbally, at least 72 hours prior to the entering onto the Property for the purposes of the Work, either in person or by telephone contact to Licensor's personnel identified in Paragraph 12 herein (Notices). Licensor further agrees to coordinate the Work with Licensor to minimize any inconvenience to or interruption of the conduct of Licensor's operations on the Property.

5. Compliance with Laws. Licensee shall comply with all Applicable Laws in undertaking the activities authorized by the Agreement. Applicable Laws shall mean any and all: (a) federal, state and local laws, statutes, rulings, rules, promulgations, directives, regulations, ordinances, consent and other orders, guidances from regulatory agencies, and interpretations, judicial decisions, decrees, common law, injunctions, writs, codes, standards, permits, certificates and licenses of any governmental authority in effect on the date hereof (and as hereafter amended from time to time) or hereafter enacted or imposed, in any way applicable to Licensee, or the Property.

6. Property Restoration. Licensee will make every effort to minimize disturbance of the Property. Licensee shall promptly restore the Property, to the extent practicable, to its condition prior to the Work authorized under the Agreement. Such restoration activities will include, but are not limited to, prompt removal of all contained investigation-derived waste, as required by the Licensee and removal of any and all equipment. This obligation shall survive the termination of this Agreement, howsoever brought about, and shall be effective regardless of when claims or liabilities are made or asserted.

7. Permits and Reporting Obligations. Licensee shall obtain all necessary permits and authorizations from all appropriate governmental agencies to conduct the Work authorized herein,

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and shall make all required notifications and fulfill all reporting obligations required by applicable laws.

8. Indemnity. Licensee agrees that it will indemnify and hold Licensor harmless from and against any and all claims, demands, actions, suits, judgments, losses, damages, costs, or expenses (including reasonable attorneys fees and expenses) incurred as a result of personal injury, property damage, civil penalties, or fines proximately caused by the Licensee's or it's contractor's entry onto the property. However, this indemnity and hold harmless obligation shall not apply to any such claims, demands, actions, suits, judgments, losses, damages, costs, or expenses (1) to the extent caused by the sole negligence, gross negligence, or willful misconduct of Licensor or (2) to the extent arising out of or caused by activities conducted by Licensee on behalf of Licensor. This indemnity is expressly conditioned on the following:

(a) In the event Licensor shall identify any matter to which this indemnity may apply or receive a notice or claim from any third party of such matter, it shall immediately, and in every case within thirty (30) days of said notice or claim, notify Licensee in writing of such matter.

(b) Licensor shall cooperate with Licensee by allowing Licensee, its agents, representatives, contractors and consultants, prompt and ready access to the Property for the purpose of investigating any matter to which this indemnity may apply. Licensor shall provide Licensee with copies of all investigative reports, data or other information in any form which Licensor, its consultants, agents or attorneys may have pertaining to any such matter, on request of Licensee.

(c) Notwithstanding anything in this agreement to the contrary, in no event shall either party be liable to the other party for any special, indirect, or consequential damages including, but not limited to, claims for loss of use, rents, anticipated profit or business opportunity, or business interruption.

9. Insurance Requirements - Licensee agrees to maintain insurance of the types and with limits of liability not less than those set out below at its expense during the term of this Agreement from insurers reasonably acceptable to Licensor covering items, risks and operations required to fulfill the Agreement:

(a) Insurance that Licensee is obliged by law to carry that covers all of Licensee's employees performing work under this Agreement including, without limitation, coverage under applicable maritime law. Such insurance shall protect Licensor as an alternate employer against claims asserted against Licensor by Licensee's workers as "borrowed servants", statutory employees, or maritime employees.

(b) Employer's Liability Insurance, including coverage for marine operations if applicable, with a limit of $1,000,000 USD (or the equivalent in local currency) any one occurrence or the statutory requirement, whichever is greater. Such insurance shall protect Licensor as an alternate employer against claims asserted against Licensor by Licensee's workers as "borrowed servants", statutory employees, or maritime employees.

(c) Commercial or Comprehensive General Liability Insurance, including contractual liability coverage, with a limit of $1,000,000 USD (or the equivalent in local

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currency) any one occurrence. Such insurance shall include sudden and accidental pollution liability coverage.

(d) Automobile Liability Insurance with a combined bodily injury and property damage limit of $1,000,000 USD (or the equivalent in local currency) any one occurrence or the statutory requirement, whichever is greater, for all owned and leased vehicles.

(e) Such other insurance in the types and amounts required by applicable law.

All insurance required above shall be primary to any insurance coverage available to Licensor and each of its Affiliates and Co-ventures. The above-stated minimum requirements are not intended to indicate the amounts and types of insurance that Licensee need or may ultimately need.

The policies under Paragraphs 9 (c) and (d) above shall be endorsed to show Licensor and each of its Affiliates and Co-Venturers as additional insureds and all insurance policies obtained by Licensee shall contain a waiver of subrogation in favor of Licensor to the extent of the liabilities assumed by Licensee under this Agreement. Licensor, likewise, shall ensure that any insurance policies relevant to this Agreement shall contain a waiver of subrogation in favor of Licensee to the extent of the liabilities assumed by Licensor under this Agreement. The policies provided for under this paragraph shall contain a provision that any breach by Licensee of any warranty, covenant, or representation in any of the policies shall not prejudice any claim by the additional insured.

Upon Licensor's request, Licensee shall furnish to Licensor certificates of insurance demonstrating that Licensee has obtained the insurance coverage set out above and containing a statement that the said insurance will not be materially changed or cancelled without at least thirty (30) days prior written notice to Licensor. All coverages must be written on forms reasonably acceptable to Licensor. Neither review nor failure to review such certificates shall constitute approval thereto or be deemed to waive or diminish Licensor's rights under this Agreement. In the event of an accident or loss resulting in an insurance claim, Licensee, at Licensor's request, shall provide Licensor with certified copies of its insurance policies for which Licensor is shown as an additional insured. This obligation shall survive the termination of the Agreement.

Neither failure to comply, nor full compliance with the insurance provisions of this Agreement shall limit or relieve Licensee from its liability and/or indemnity obligations in this Agreement. If Licensee fails or refuses to comply with the obligations prescribed in Paragraph 9 herein, Licensor, without prejudice to any other rights or remedies available to it under the Agreement or at law, may (i) treat the Agreement as having been repudiated by Licensee or (ii) procure the required insurances and deduct the cost thereof from any amounts due hereunder or otherwise recover such amounts from Licensee.

Notwithstanding the above, Licensor acknowledges that its insurance requirements as to Licensee are satisfied by Licensee's maintaining a self-administered claims program with respect to its duties hereunder. Licensee shall require contractors who perform the Work under this Agreement to maintain liability insurance coverage in accordance with the service agreements between Licensee and its contractors.

10. Notices. Except as otherwise specially provided herein, all notices required or made under this Agreement shall be in writing and shall be made as follows:

To Licensor: **ConocoPhillips Company**
Property Tax, Real Estate, Right of Way & Claims
1232 Park Street, Suite 300

COP0019624

Paso Robles, CA 93446
Attn: Colleen S. Hagemann
Phone: (805) 226-2649
Facsimile: (805) 239-4410

With Copies to: **ConocoPhillips Company**
Risk Management & Remediation
1230 West Washington Street
Suite 212
Tempe, AZ 85281
Attn: Myron W. Smith
Phone: (602) 452-2505
Facsimile: (602) 452-2509

ConocoPhillips Company
5528 Doane Avenue
Portland, OR 97210
Attn: Tom Lyons
Phone: (503) 248-1572
Facsimile: (503) 248-1540

To Licensee: **Chevron U.S.A. Inc.**
6111 Bollinger Canyon Road
San Ramon, CA 94583
Attn: Brett Hunter
Phone: 925-543-2371
Facsimile: 925-543-2324

With Copies to: **Chevron U.S.A. Inc.**
6111 Bollinger Canyon Road
San Ramon, CA 94583
Attn: Kelly Esters
Phone: 925-543-2376
Facsimile: 925-543-2324

Either party may change the above designations by written notice to the other party.

11. Parties Bound. This Agreement and the rights and obligations created hereby shall be binding upon and inure to the benefit of the Parties hereto, their heirs, assigns or successors in interest. Neither party may assign the rights and obligations provided for herein without the prior written consent of the other party.

12. Severability. The invalidity or unenforceability of any provision hereof shall not affect the validity or enforceability of any other provision.

13. Modification. This Agreement shall not be modified by oral agreements. All modifications to the Agreement must be in one writing, executed by both Parties.

14. Waiver. Failure to insist upon strict compliance with any provision hereof shall not be deemed a waiver of such provision or any other provision hereof. The waiver by any party of any

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breach of any of the provisions of this Agreement shall not constitute a continuing waiver or a waiver of any subsequent breach of the same, or of any other provision of this Agreement.

15. Governing Law. This Agreement shall be construed and interpreted and governed by and in accordance with the local law of the State of **Oregon** without reference to any choice of law, rules or policies which may refer the resolution of any dispute arising hereunder to the laws of any other jurisdiction.

16. Safety. While on the Property, Licensee, its employees, agents, consultants, contractors, or other authorized representatives shall strictly abide by Licensor's Health and Safety Procedures, be OSHA Hazwoper trained, and meet Licensor's required coverage of insurance, as set forth herein.

17. Utility Clearance. All utility clearance for the activities conducted on the Property shall be performed by Licensee.

18. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representative(s).

LICENSOR	**LICENSEE**
CONOCOPHILLIPS COMPANY	**CHEVRON U.S.A., INC.**
By: _____	By: _____
Name: Frank L. Nichols	Name: _____
Title: Advisor	Title: _____
Date: 06 JUL 2009	Date: _____

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breach of any of the provisions of this Agreement shall not constitute a continuing waiver or a waiver of any subsequent breach of the same, or of any other provision of this Agreement.

15. Governing Law. This Agreement shall be construed and interpreted and governed by and in accordance with the local law of the State of Oregon without reference to any choice of law, rules or policies which may refer the resolution of any dispute arising hereunder to the laws of any other jurisdiction.

16. Safety. While on the Property, Licensee, its employees, agents, consultants, contractors, or other authorized representatives shall strictly abide by Licensor's Health and Safety Procedures, be OSHA Hazwoper trained, and meet Licensor's required coverage of insurance, as set forth herein.

17. Utility Clearance. All utility clearance for the activities conducted on the Property shall be performed by Licensee.

18. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representative(s).

LICENSOR

CONOCOPHILLIPS COMPANY

By: F L Nichols

Name: Frank L. Nichols

Title: Advisor

Date: 06 JUL 2009

LICENSEE

CHEVRON U.S.A., INC.

By: H Xun

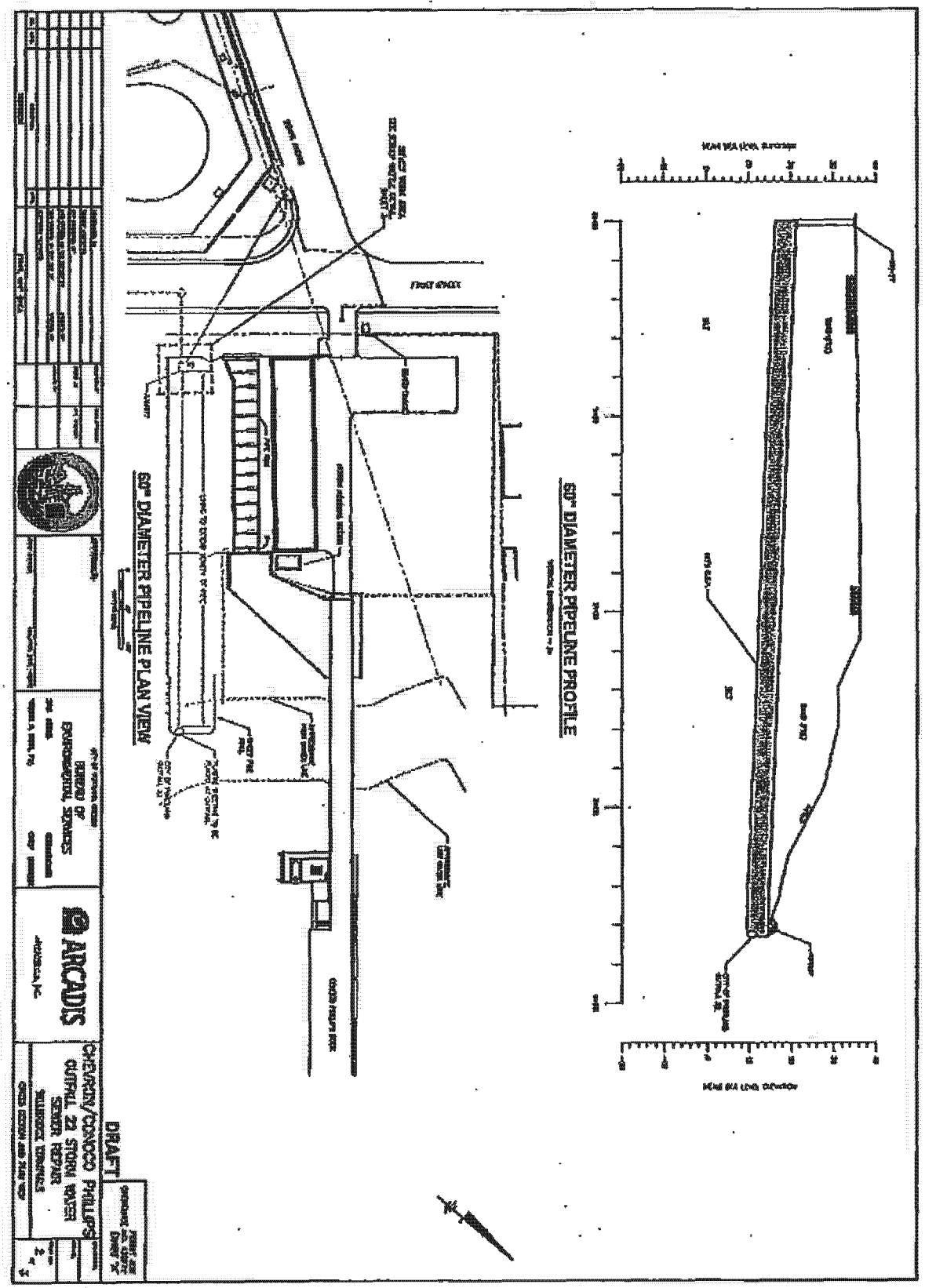
Name: Hongyan Xun

Title: Assistant Secretary

Date: 7/6/09

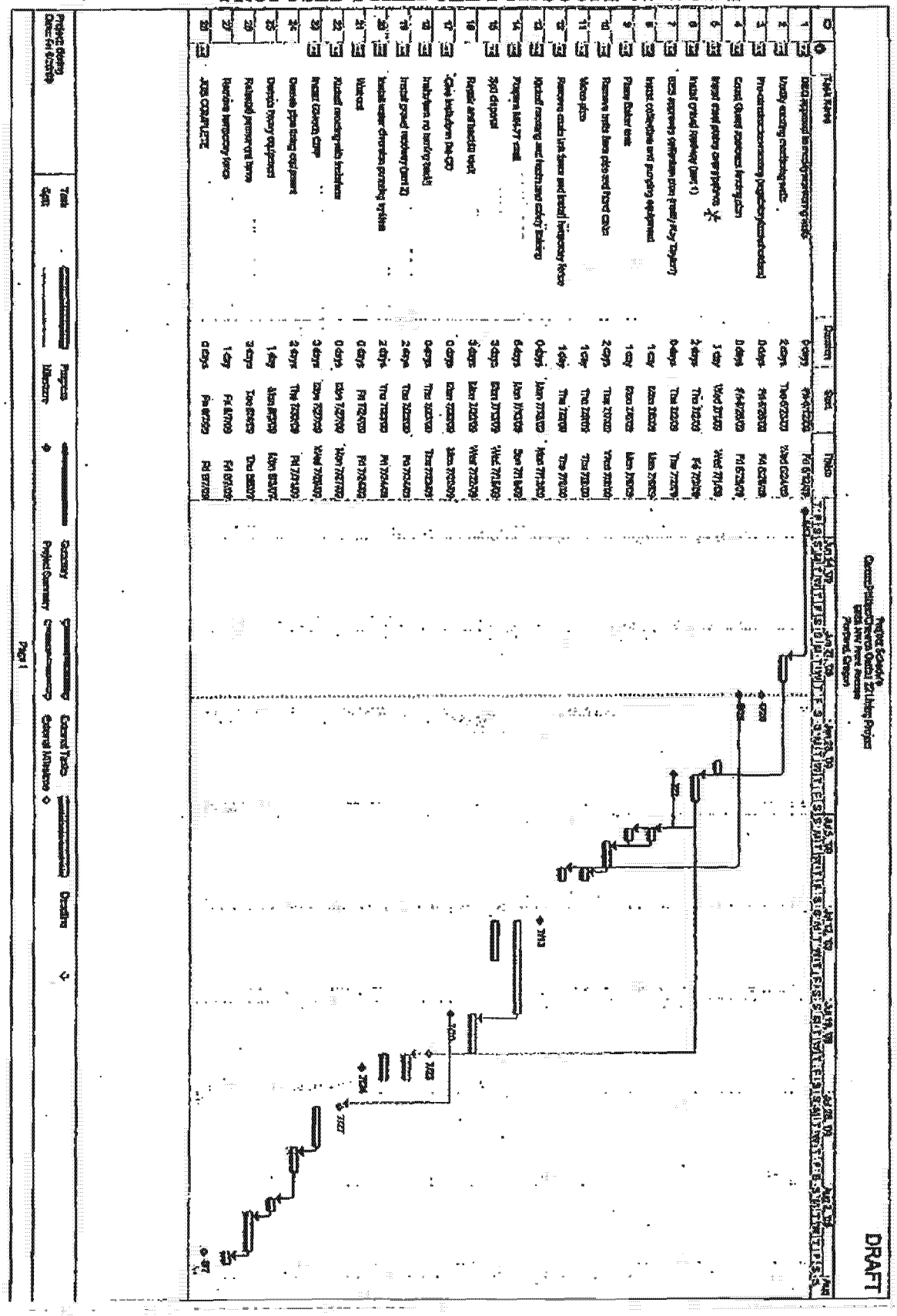
COP0019627

EXHIBIT A: SITE MAP
LOCATIONS AFFECTED BY SCOPE OF WORK



COP0019628

ATTACHMENT B – GANTT CHART
PROPOSED SCHEDULE FOR SCOPE OF WORK



COP0019629

RM&R / PTRRC PROJECT REQUEST & INFORMATION FORM

RM&R Request Date	6/29/2009	PTRRC Received Date	6/29/2009	☑ NEW	☐ RENEWAL
RM&R Required Date	7/6/2009	PTRRC Closed Date	7/10/2009	☐ HISTORICAL	☐ AMENDMENT

SITE SPECIFIC INFORMATION

Acquisition # (4 digits)	0609-A
Street Address	5528 Doane Avenue
City	Portland
State and Zip	OR 97021
Ownership Status	COP Owned
Heritage Company	Unocal 76

SITE MANAGER INFORMATION

Site Manager	Myron Smith
Street Address	1230 W. Washington, Ste. 212
City	Tempe
State, Zip	AZ, 85281
Office Phone	602-452-2505
Fax Number	602-452-2509
Cell Phone	602-432-1578

ACCOUNTING INFORMATION

RM&R Site ID#	0922
WNG. Number	WNG.000.0922.00.RM
Company Code	01
G/L Account No.	7100010 Environmental Fees
Purchase Order #	4511868214
Bus. Unit # (6-7 digits)	0609-A

CONSULTANT INFORMATION

Company Name	Stantec Consulting
Street Address	7730 Mohawk St. SW
City	Tualatin
State and Zip	OR 97021
Project Manager	Rick Fetterly
Work Phone	503-550-5917
Email Address:	Rick.Fetterly@Stantec.com

REGULATORY AGENCY

Agency Name	ODEQ
Agency Location	Portland, OR
Agency Phone	503-229-5583
Agency Contact	Mike Romero
Agency Email	ROMERO.Mike@deq.state.or.us

PROJECT LOCATION

Assessor Parcel #	1N1E18_100
Street Address	5528 Doane Avenue
City	Portland
State and Zip	OR, 97021
County	Multnomah
Description:	COP Portland Terminal

ACCESSING PARTY

Owner #1 Name	Chevron USA Inc
Street Address	5531 NW Doane Avenue
City	Portland
State and Zip	OR 97021
P.O. Box	
P.O. City & Zip	
Phone	925-543-2371
Contact Thru	Brett Hunter
On Premises?	Yes

LANDOWNER 2 (If Applicable)

Owner #2 Name	
State and Zip	
P.O. Box	
P.O. City & Zip	
Phone	
Contact Thru	
On Premises?	

TENANT (If Applicable)

Name	
Street Address	
City	
State and Zip	
P.O. Box	
P.O. City & Zip	
Phone	
On Premises?	

PROPERTY OWNER

Owner Name	ConocoPhillips Company
Contact Thru	Tom Lyons,Termnl Sprvsr
Street Address	5528 Doane Avenue
City	Portland
State and Zip	OR 97021
Phone	602-452-2505

PROPERTY MANAGEMENT (If Applicable)

Company	
Contact Name	
Street Address	
City	
State and Zip	
Phone	

PTRRC CONTACT

PTRRC Associate	Colleen Hagemann
Phone	805.226.2849
PTRRC Agent	Randy Booth
City	Paso Robles
Phone	805.226.2841
COP Legal	Paul Hamada

WORK DESCRIPTION

Prepare Reverse Access Agreement to allow Chevron and its subcontractors access the ConocoPhillips Portland Terminal sandlot and dockside area to complete lining of the 60" storm sewer pipe connecting Manhole MH-77 to Outfall 22 (see attached map in exhibit B).

ACCESS SCOPE

Access Scope	Remediation
Other:	

Access Restrictions Detail:

PROJECT INFORMATION

Agreement Type	Access
Start Date	6-Jul-09
Project Duration	1 Year
Access Property Type	Across the Fence
Other (specify)	
TOBIN #	PRW31895
TOBIN Tract #	

REPORT SUBMITTAL REQUIREMENTS

Frequency	
Type	
To Whom	
Other	

AGREEMENT INFO (PTRRC AFTER CLOSING)

Agreement Date	7/6/2009
Agmt Expire Date	3/31/2022
Access Fee	N/A
Fee Frequency	N/A
Property Owner Tax ID #	N/A

PRE-NOTIFICATION REQMNTS

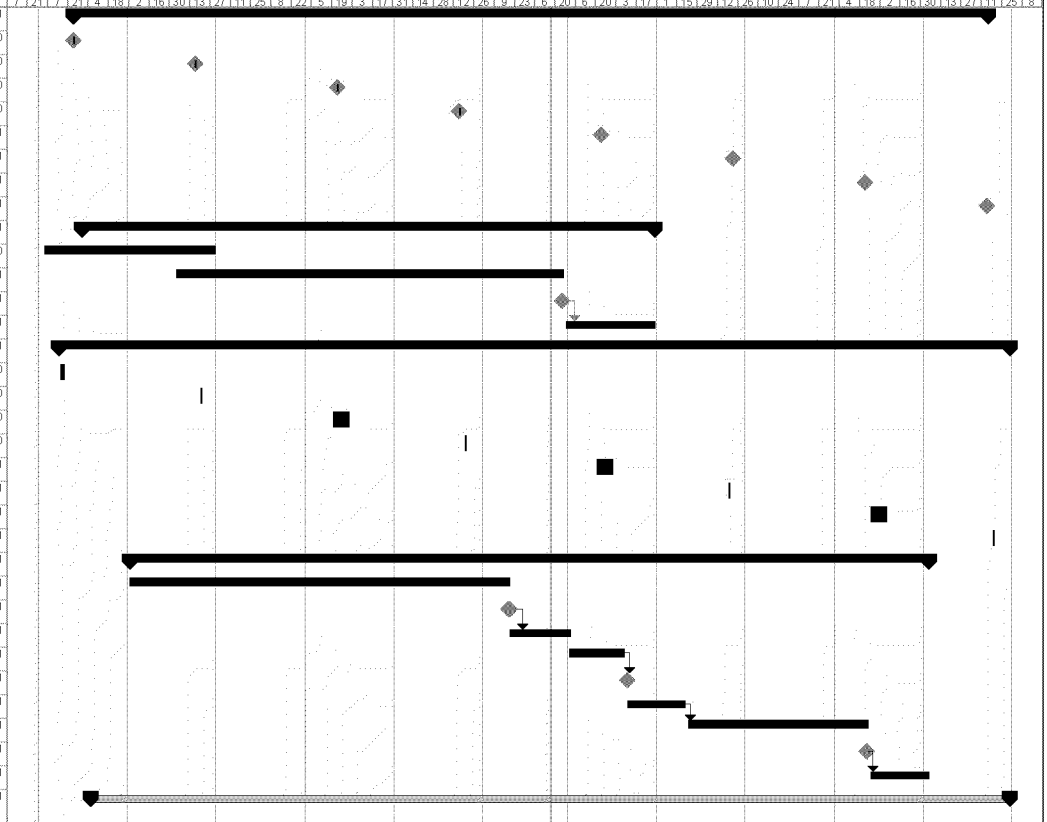
In Advance	
When	
To Whom	
Other	
Form of Notification	

Enter data in Environmental Data Management System (EDMS) Access Agreement Tracking Module (Required for all) ☐ NEW ☐ REVISED/CANCEL

COP0019630

WILLBRIDGE TERMINAL GROUP SCHEDULE - ConocoPhillips (Revised 02-15-11)

ID	Task Name	Start	Finish
1	**WTG MEETINGS**	Thu 3/25/10	Thu 12/15/11
2	First Quarter 2010	Thu 3/25/10	Thu 3/25/10
3	Second Quarter 2010	Thu 6/17/10	Thu 6/17/10
4	Third Quarter 2010	Thu 9/23/10	Thu 9/23/10
5	Fourth Quarter 2010	Thu 12/16/10	Thu 12/16/10
6	First Quarter 2011	Thu 3/24/11	Thu 3/24/11
7	Second Quarter 2011	Thu 6/23/11	Thu 6/23/11
8	Third Quarter 2011	Thu 9/22/11	Thu 9/22/11
9	Fourth Quarter 2011	Thu 12/15/11	Thu 12/15/11
10	**STORM WATER PATHWAY EVALUATION**	Wed 3/31/10	Fri 4/29/11
11	Storm Water Sampling	Fri 3/5/10	Wed 6/30/10
12	Storm WaterSource Control Evaluation	Fri 6/4/10	Fri 2/25/11
13	Storm Water Source Control Report Submittal	Fri 2/25/11	Fri 2/25/11
14	DEQ Review and Approval	Mon 2/28/11	Fri 4/29/11
15	**WTG GROUNDWATER MONITORING**	Mon 3/15/10	Fri 12/30/11
16	1Q10 Gauging and sampling	Tue 3/16/10	Thu 3/18/10
17	2Q10 Gauging	Mon 6/21/10	Mon 6/21/10
18	3Q10 Gauging and sampling	Mon 9/20/10	Thu 9/30/10
19	4Q10 Gauging	Mon 12/20/10	Mon 12/20/10
20	1Q11 Gauging and sampling	Mon 3/21/11	Thu 3/31/11
21	2Q11 Gauging	Mon 6/20/11	Mon 6/20/11
22	3Q11 Gauging and sampling	Mon 9/26/11	Thu 10/6/11
23	4Q11 Gauging	Mon 12/19/11	Mon 12/19/11
24	**VAPOR INTRUSION EVALUATION (AII)**	Mon 5/3/10	Fri 11/4/11
25	Prepare Draft Work Plan Outline	Mon 5/3/10	Wed 1/19/11
26	Submit HHRA Work Plan Outline (AII)	Wed 1/19/11	Wed 1/19/11
27	DEQ Review of HHRA WP Outline	Thu 1/20/11	Wed 3/2/11
28	Prepare Vapor Instrusion Work Plan	Wed 3/2/11	Fri 4/8/11
29	Submit Vapor Instrusion WP	Mon 4/11/11	Mon 4/11/11
30	DEQ Review of HHRA WP	Mon 4/11/11	Fri 5/20/11
31	Conduct Vapor Instrusion Evaluation (Stantec)	Mon 5/23/11	Fri 9/23/11
32	Submit Vapor Instrusion Evaluation (Stantec)	Fri 9/23/11	Fri 9/23/11
33	DEQ Review of Vapor Instrusion Evaluation Report	Mon 9/26/11	Fri 11/4/11
34	**ASPHALT MAINTENANCE AND MISCELLANEOUS SOIL SAMPLING**	Tue 4/6/10	Fri 12/30/11



Project: WTG(3rd
Date: Thu 2/17/11

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

COP0019631

From: Noll, Michael D(DXT Services)
Sent: Wednesday, December 03, 2008 10:48 PM
To: Matthews, Stephen E
CC: Lauck, Terry S.; Ralston, Ed C.:; Smith, Myron - Environmental:
Subject: RE: Environmental Issues (0922 Portland Terminal)

Stephen - Chevron, ConocoPhillips (former Unocal terminal), and Kinder-Morgan (former Shell terminal) are named together as the Willbridge Terminal Group (WTG) under an Oregon DEQ Order on Consent (WMCSR-NWR-94-06) for environmental cleanup. All three parties are also named under the Lower Willamette Group (LWG) as part of the Portland Harbor Superfund site by EPA. Terry can tell you if COP is listed under a separate order or if they are named together under the LWG.

Michael D. Noll
DXT SERVICES INC
Approved service provider of ConocoPhillips - Risk Management & Remediation

Client Contact Information:
11921 - 185th Avenue SE
Snohomish, WA 98290
(360) 794-9523
Fax (360) 794-6578
Cell (425) 501-1476

From: Matthews, Stephen E
Sent: Wednesday, December 03, 2008 2:39 PM
To: Noll, Michael D(DXT Services)
Cc: Lauck, Terry S.
Subject: FW: Environmental Issues

Michael

Do you know the answer to the Port's questions below?

Thanks

Stephen Matthews
ConocoPhillips
Property Tax, Real Estate, Right of Way & Claims
3900 Kilroy Airport Way, Ste. 210
Long Beach, CA 90806
Office: (562) 290-1517
Cell: (562) 240-3644

From: Freeman, Patti [mailto:Patti.Freeman@portofportland.com]
Sent: Wednesday, December 03, 2008 1:28 PM
To: Matthews, Stephen E
Subject: Environmental Issues

Stephen - I also had one other question. It is my understanding that ConocoPhillips and Chevron are working together to complete some environmental cleanup on their respective sites. It is also my understanding that at least a portion of the work Chevron is doing is to fulfill their obligations for a DEQ/EPA mandated cleanup. Do you know

if this is also the case for ConocoPhillips? I'm assuming they most likely also have the same DEQ/EPA obligations, but don't know that for a fact. Confirmation of this would be appreciated. Thanks.

Patti Freeman

Contracts Administrator

Port of Portland

503-944-7048

503-548-5529 (Fax)

patti.freeman@portofportland.com

From: Ralston, Ed C.:
Sent: Tuesday, April 21, 2009 02:18 PM
To: RSC:HSE RM&R Information Management
CC: Shaw, Francesca R
Subject: FW: Portland Tk3408 - DOT Breakout Tank

Please upload and confirm:

00922
E. Ralston
Correspondence - proposed tank repairs - Tank 3408

From: Uyeda, Valerie J
Sent: Wednesday, February 04, 2009 9:40 AM
To: Collins, Bill H
Cc: Ralston, Ed C.:
Subject: FW: Portland Tk3408 - DOT Breakout Tank

Hi Bill:

I meant to copy you on this e-mail. Please get the tank repair schedule to Ed so he can communicate with the agency. Thanks.

- Val -

From: Ralston, Ed C.:
Sent: Wednesday, February 04, 2009 9:37 AM
To: Uyeda, Valerie J
Cc: Smith, Myron - Environmental:
Subject: RE: Portland Tk3408 - DOT Breakout Tank

Valerie - Myron and I participated in a conference call with Bill Collins and all regarding this tank. Based on our current groundwater data, it appears that the contamination is historical. The GW data has shown consistent concentrations for several years and nothing looks anomalous that would indicate the tank actually had a new leak. We, however, will continue to evaluate our GW data for anomalies. I have not talked to the agency yet, but will notify them of our intent to repair the tank once I get a schedule from Bill. The agency will most likely want us to do some angle borings around the tank (apparently the agency had requested borings during a previous tank repair a few years ago).

Hope I have answered your question. Let me know if you need more information. Thanks. Ed

Ed Ralston
Risk Management & Remediation
ConocoPhillips
76 Broadway
Sacramento, CA 95818
916-558-7633
916-558-7639
THINK SAFETY, ACT SAFELY!

From: Uyeda, Valerie J
Sent: Wednesday, February 04, 2009 9:20 AM
To: Ralston, Ed C.:
Cc: Smith, Myron - Environmental:
Subject: FW: Portland Tk3408 - DOT Breakout Tank

Hi Ed:

Do you have any new information about this situation? Have we determined that it is historical

contamination? Thanks.

- Val -

From: Collins, Bill H
Sent: Friday, January 16, 2009 10:54 AM
To: Meier, Craig B.
Cc: Spicher, Scott S.; Uyeda, Valerie J
Subject: RE: Portland Tk3408 - DOT Breakout Tank

Just to be clear, if the hot bottom can't be attributed to a hole in the tank bottom (i.e., a new leak), I'm not aware of any required notifications to DEQ since the leak would be attributed to historical issues currently addressed by the ongoing RM&R effort. RM&R, however, may wish to report to the DEQ project manager for the site and see if sampling etc. is required for characterization purposes. If the leak is a new one (i.e., there is a hole in the bottom) then there would likely be additional reporting, but it is my understanding after speaking to persons onsite that no hole has been located.

From: Collins, Bill H
Sent: Friday, January 16, 2009 10:12 AM
To: Meier, Craig B.
Cc: Spicher, Scott S.; Newton, Robert:; Tucker, Michael Lynn; Uyeda, Valerie J; Noll, Michael D(DXT Services); Ralston, Ed C.:; Smith, Myron - Environmental:
Subject: RE: Portland Tk3408 - DOT Breakout Tank

Craig,

Have we found a hole in the bottom of the tank? If so, we should fix the hole. Beyond that, I'm not aware of any regulations that would require further repairs (i.e., a new floor), although if the floor is in such bad condition that you feel a leak may happen in the near future, it would be in our best interest to be proactive and make the fix now (i.e., the cost of a new bottom would be less than the costs etc. related to dealing with a new leak).

The Portland Terminal is already a recognized site so far as DEQ goes with ongoing remediation. When this issue came up a few years ago (I can't remember which tank), DEQ asked that we collect samples from beneath the tank for characterization purposes. They did not require we collect samples through the floor from inside the tank because of the obvious safety risk, but instead asked that we collect samples from outside of the tank using angled borings. Any such characterization would need to be coordinated through RM&R. RM&R may also want to notify DEQ of the hot bottom. I've forwarded this response on to them as well.

Bill Collins

From: Meier, Craig B.
Sent: Friday, January 16, 2009 11:09 AM
To: Tullio, Todd L <Todd.L.Tullio@conocophillips.com>;Uyeda, Valerie J <Valerie.J.Uyeda@conocophillips.com>;Spicher, Scott S. <Scott.S.Spicher@conocophillips.com>
Cc: Newton, Robert: <Robert.A.Newton@conocophillips.com>;Tucker, Michael Lynn <Mike.Tucker@conocophillips.com>
Subject: Portland Tk3408 - DOT Breakout Tank

This tank has just been inspected and LEL's have been detected under the floor at 22 locations across the floor. Are there any regulatory reporting requirements that need to be taken?

From: Hunter, Brett (BLHU)
Sent: Tuesday, March 03, 2009 12:28 AM
To: Ralston, Ed C.:; Smith, Myron - Environmental:
CC: Hunter, Brett (BLHU)
Subject: MOC and Cost Sharing
Attachments: 1001868 CVX_COP MOC Willbridge OR_20090226.doc

Ed/Myron:

The attached reflects status of MOC items. Much progress but, many still incomplete. Your follow-up on those assigned to you and/or Rick F is appreciated. Let me know if any clarification is required.

More importantly, Chevron has received inquiry from ODEQ (Mike Romero) about the status/schedule of 60" sewer lining project. Mike was not keen on the possible deferral of this work and went as far as to mention his authority to order us to perform that work if deemed necessary. His "reminder" combined with the heightened pressure from others for diligent source control at this outfall cause me to no longer view this work as discretionary this year. As stated during our MOC meeting, I see ConocoPhillips contributing 50% to the 60" CIPP project and to the ongoing groundwater extraction/treatment effort behind the wall at Outfall 22. This is based on knowledge of an appreciable release occurring in this area (~2001) and is consistent with handling of such releases post-Unocal divestment (1997). For your planning purposes these 2009 total costs are projected at ~$1MM and ~$216M, respectively. Arcadis' proposal can be furnished upon your request.

The MOC calls for a Memorandum of Understanding that will, among other things, capture our mutual view of the groundwater treatment and 60" sewer costs to be shared. As I'm sure you're aware, a meeting is scheduled with ODEQ this Wednesday. I would like to discuss ConocoPhillips' position on this cost share matter with you in advance of Wednesday's meeting so that a definitive schedule can be represented to ODEQ. My availability for a call tomorrow is before 10:00 am or after 3:00 pm pst. Please reply with your availability and a number where I can reach you. If unavailable, I would appreciate an e-mail reply before Wednesday indicating your agreement in principal to the cost share approach.

Thanks,

Brett L. Hunter
Project Manager

Chevron Environmental Management Company
6111 Bollinger Canyon Rd., Suite 3628
San Ramon, CA 94583
Tel 925 543 2371
Mobile 925 487 0954
bhunter@chevron.com

Management of Change Form

Chevron	Management of Change Report Form Attach additional pages if needed. See ESH 505 for information or suggestions for each section. Note: All date formats are M/DD/YYYY	
INTRODUCTION	Originator: **Brett Hunter**	Affected Location(s) or Operation(s): **Willbridge Terminal (1001868)**
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Reason for Change:	**Business Plan**	
Describe the Change:	**Change management of legacy Unocal environmental liabilities at ConocoPhillips' Willbridge (Portland,OR) Terminal from ConocoPhillips/Stantec to Chevron/Arcadis**	

TASKS	List the work tasks requred to complete the Change. List the responsible party and the due date. See ESH 505 Task Section for potential tasks for each type of change. Insert additional lines as needed.

MOC Tasks:	Responsible	Due Date	Completed
Plan/Schedule initial CP/CVX/ARCADIS MOC meeting	**Hunter**	**01/12/2009**	**1/27/2009**
Conduct initial CP/CVX/ARCADIS MOC Meeting	**All**	**01/27/2009**	**1/27/2009**
Transfer Project related files (CAD included) and documents to Hunter/Sprick	**Ed/Rick F.**	**02/28/09**	**-**
Prepare transfer of liability management MOU document. Finalize 'inside wall' and '2001 leak' cost sharing.	**Brett/Myron**	**02/28/09**	**-**
Identify/Discuss existing 3rd-party access agreements terms & conditions – obtain copy(ies); Notify 3rd parties accordingly (understand if access to the CP property is covered in PSA)	**Ed/Rick F.**	**02/28/09**	**-**
Obtain copy of current lease agreement with Port of Portland – understand reporting requirements (purchase anticipated in 2Q09)	**Myron**	**02/16/09**	**-**
Identify/Discuss any permitted environmental system and/or equipment – notify permitting agency of change accordingly	**Ed/Rick F.**	**02/16/09**	**02/05/09**
Identify/Discuss all environmental remediation equipment, transfer oprtn/compliance manuals to Arcadis	**Ed/Rick F.**	**02/28/09**	**-**
Transfer of Best Practices and Lessons Learned regarding O&M, monitoring, and OF22	**Ed/Rick F./Grant/Jason**	**02/16/09**	**02/21/09**
Locate/verify pertinent Orders (Consent, ROD, discharge report, etc.) for notification, scope, schedule, and reporting requirements	**Ed/Rick F.**	**02/16/09**	**-**
Identify/Discuss COP Terminal contact(s), incident reporting and emergency response procedures – update Arcadis HASP and Terminal contact records	**Ed/Myron**	**02/16/09**	**-**

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Identify and participate in COP Site training	**Ed/Rick/Grant/Jason**	**02/16/09**	**02/11/09**
CVX/Arcadis conduct site walk and final MOC meeting with COP/Stantec	**Ed/Rick/Grant/Jason**	**02/27/09**	**-**
Transfer sheen reporting responsibilities to ARCADIS. Transfer of lab info, historical lab data, SOPs, equipment.	**Ed/Rick F.**	**02/09/09**	**-**
Prepare letter to Coast Guard documenting change in management regarding sheen events	**Myron**	**02/06/09**	**02/05/09**
CVX manages 60" lining following approval of permit by BES	**All**	**ASAP**	**02/23/09**
Transfer O&M of groundwater treatment system to ARCADIS (shadow period starting 02/16/09)	**Ed/Rick F.**	**03/02/09**	**-**
Transfer site groundwater monitoring duties to ARCADIS for sandlot area	**Ed/Rick F.**	**03/16/09**	**-**
Transfer WTG ConocoPhillips Terminal representation to ARCADIS	**Ed/Rick F.**	**ASAP**	**-**
Develop and implement stakeholder communication plan	**Ed/Myron/Brett**	**02/16/09**	**-**
Create STRATA Project/Strategic Plans to include: EPDEP; OE; SCM; SSP; Financial information	**Grant/Brett**	**02/16/09**	**02/26/2009**

RISKS	Calculate the risk by completing a Risk Assessment. If the risk warrants, complete a PHA. Identify associated risks and how they are to be mitigated. List the responsible party and the due date.		
Is Process Hazard Analysis required? ☐Yes If not, uncheck this box. If Yes, attach the completed Risk Assessment Guideline Form (Appendix D). If Yes, add PHA to tasks list and add identified risks and mitgation steps below.			
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Injury/Loss due to improper system/equipment operation			
Injury/Loss due to unfamiliarity with COP Terminal Oprtns and safety protocol			
Incur Lawsuit/Claim by not managing stakeholder(s)			

COMMUNICATION	Who needs to know about the Change and how will you communicate the Change to them? Insert additional lines as needed.

- **Stakeholders: Notify in writing per communication plan**
- **Chevron: Decision Executive (direct).**
- **Regulatory Agencies: (in writing per communication plan)**
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- **Consultants/Contractors: Other direct and/or sub-contractors as necessary (e-mail)**
- **Emergency Contact/Reporting: Update/revise in writing**

COMMUNICATION	Who needs to know about the Change and how will you communicate the Change to them? Insert additional lines as needed.
• **Update HASP contacts, update Arcadis administrative systems, update STRATA**	

APPROVALS	Who needs to approve of the Change at the Local, Area, and Corporate level. Include all departments responsible for, or affected by, the Change. Remember, High Risk or select changes require Area or Departmental Manager approval.					
Initial MOC Plan Authorized by:				**Date Authorized**:		
	Title	**Signature**	**Title**	**Signature**	**Title**	**Signature**
Local:						
Area:						
Corporate:						
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From: Hunter, Brett (BLHU)
Sent: Wednesday, March 11, 2009 12:29 AM
To: Ralston, Ed C.:; Smith, Myron - Environmental:
CC: Sprick, Grant; Hunter, Brett (BLHU)
Subject: CVX/COP MOC
Attachments: 1001868 CVX_COP MOC Willbridge status 031009.doc

Ed/Myron:

Not to be a pest but, I would like to close this out and keep items from falling through the cracks. I've highlighted the items still to be completed. Counting each highlighted item from the top down:

1. self-explanatory

2. In talking with Myron last week, I know this is being crafted at your end. One question that may be addressed in advance of the MOU is the ongoing monitoring of wells within the terminal. If COP plans to retain that activity, would you consider transferring that work to Arcadis? If not, the monitoring by Stantech will need to be coordinated with Arcadis' monitoring outside of the terminal. If that activity is to be managed/paid by CVX, I would look to have Arcadis perform. Your thoughts?

3. self-explanatory

4. contingent on ownership status of riverfront parcel

5. self-explanatory

6. I suspect this will mostly relate to the City's POTW permit. (Note, an outstanding balance is currently preventing transfer of this permit)

7. self-explanatory; extremely important

8. self-explanatory. May be sufficient to involve Stantech/Arcadis personnel only. Best conducted after monitoring question in #2 above resolved.

9. self-explanatory; lab info and historic data required. Must clarify need to report sheen events to Stantech

10. self-explanatory

11. self-explanatory; (COP maintain WTG representation?)

12. self-explanatory - done?

Thanks for Your Efforts,

Brett L. Hunter
Project Manager

Chevron Environmental Management Company
6111 Bollinger Canyon Rd., Suite 3628
San Ramon, CA 94583
Tel 925 543 2371
Mobile 925 487 0954
bhunter@chevron.com

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	Title	**Signature**	**Title**	**Signature**	**Title**	**Signature**
Local:						
Area:						
Corporate:						
MOC Completion:				**Date**:		

From: Shaw, Francesca R
Sent: Thursday, March 19, 2009 06:28 PM
To: Ralston, Ed C.:
Subject: RE: LL List - Site 00922 - OR - Portland
Attachments: Ralston - 00922 Document Summary - DRAFT.xls

Ed,

Here is the list with 610 documents identified under the site folder, 00922 - Acq 0608-A - Portland Terminal - 5528 NW Doane Ave <http://livelink.conocophillips.net/livelink.exe?func=ll&objId=33716687&objAction=browse&sort=name&viewType=1> , in Livelink.

If you want to look at an item you can just click on the word "document" in the first column and it will open it for you.

Please let me know if you need additional assistance with this or any other Livelink functionality.

Thanks,

Francesca Shaw

RM&R Associate - Livelink

Office: 918.661.4478

420 South Keeler, PB1300-06

Bartlesville, OK 74004

	A	B
1		**DRAFT Summary - Document List for Site 00922 - Portland Terminal - Oregon**
2	**Type**	**Title**
3	Document	19960304 - ACP - Schwabe - CH2M HILL - Subtasks
4	Document	19960304 - ACP - Schwabe - Unocal - Legal Representation
5	Document	19960515 - ACP - Schwabe - Unocal - Legal Responsibility
6	Document	19890908 Unocal - ORDEQ - Tank Update Information
7	Document	19920709 ORDEQ - Chevron - Plan to Conduct Preliminary Assessment
8	Document	19920709 ORDEQ - Chevron - Preliminary Assessment
9	Document	19920727 ORDEQ - Unocal - Preliminary Assessment
10	Document	19920821 Unocal - City of Portland - Removal of Boom
11	Document	19921015 ORDEQ - Unocal - Voluntary Cleanup Program
12	Document	19921214 ORDEQ - Union Oil - Notice of Proposal to List Contaminated Property
13	Document	19930122 GeoEngineers - ORDEQ - Resonce to Notification of Intent to Place Site on CRL
14	Document	19930610 SEACOR - Oil Companies - Submittal Date for Draft Reports
15	Document	19930630 ORDEQ - Unocal - Preliminary Assessment
16	Document	19930630 ORDEQ - Unocal - Review of Preliminary Assessment
17	Document	19930805 ORDEQ - Unocal - Voluntary Cleanup Program
18	Document	19930927 - ORDEQ - Unocal - Meeting Notice
19	Document	19930927 ORDEQ - Unocal - Site Update
20	Document	19931019 ORDEQ - Oil Companies - Transmittal Statement of Work
21	Document	19931115 Chevron - ORDEQ - Comments and Draft Order
22	Document	19931115 Union Oil - ORDEQ - Comments on Consent Order and SOW
23	Document	19931216 DEQ - Attorneys - 2nd Draft of Consent Order
24	Document	19940118 Unocal - ORDEQ - Product Recovery
25	Document	19940203 Shell Chevron Unocal - DEQ - Comment on Consent Order
26	Document	19940209 Chevron - ORDEQ - Transmittal Well Sampling Results
27	Document	19940218 DEQ - Attorneys - Revision to Consent Order
28	Document	19940503 DEQ - Shell Unocal Chevron - Attach A Replacement for Consent Order
29	Document	19940808 ORDEQ - Oil Companies - DEQ Project Manager Assignment
30	Document	19940823 CH2M Hill - ORDEQ - Meeting Confirmation
31	Document	19940922 ORDEQ - CH2M Hill - Meeting Summary
32	Document	19940927 ORDEQ - CH2M Hill - RI FS Oversight Costs
33	Document	19941004 GeoEng - ODEQ - Request for Special Permit
34	Document	19941129 Shell - DEQ - Ownership Change
35	Document	19941130 GeoEng - ODEQ - Request Completion of LUCS
36	Document	19941201 CH2M HILL - Port of Portland - Transmittal Workplan
37	Document	19941202 GeoEng - ODEQ - Request for Special Permit
38	Document	19941212 ODEQ - Unocal - Special Permit Granted
39	Document	19941213 GeoEng - ODEQ - GW Discharge
40	Document	19950101 Shell - DEQ - Shell to Comply with Consent Order
41	Document	19950223 GeoEng - ODEQ - Withdraw NPDES App
42	Document	19950228 ORDEQ - CH2M HILL - DEQ Comments on Draft Interim Action Plan
43	Document	19950302 Port of Portland - Unocal - Land Value Adjustment
44	Document	19950309 City of Portland - Williams Fredrickson et al - Responsibility Letter and Docs
45	Document	19950622 GeoEngineers - City of Portland - App to Occupy Right of Way
46	Document	19950622 GeoEngineers - City of Portland - Right of Entry Request
47	Document	19951004 GeoEngineers - City of Portland - Application to Occupy Right of Way
48	Document	19960402 ORDEQ - CH2M Hill - Approval of Workplan
49	Document	19960522 ORDEQ - CH2M HILL - Workplan Approval
50	Document	19960912 GeoEng-City of Port-App to Occupy ROW
51	Document	19961108 GATX - ORDEQ - Project Management Assignment
52	Document	19961119 ORDEQ - Shell Oil - Review of GWM Data
53	Document	19970624 Tosco - ORDEQ Meeting Notes
54	Document	19970806 ORDEQ - Oil Companies - RI FS Workplan
55	Document	19970813 Tosco - City of Portland Meeting Notes
56	Document	19970821 Unocal - Port of Portland - Amendment 1 to Ground Lease and Consent to Assignment
57	Document	19970903 Pacific - City of Portland - Right of Entry
58	Document	19970904 ORDEQ - Pacific Env - DEQ Review of Interim Action WP
59	Document	19970917 Pacific Env - ORDEQ - Response to DEQ Comments
60	Document	19970924 City of Portland - Pacific - Info Needed for Right of Entry Permit
61	Document	19971014 Pacific - City of Portland - Response to Comments
62	Document	19971105 ORDEQ - Oil Companies - Approval of Interim Action
63	Document	19980408 Tosco - DEQ Meeting Notes
64	Document	19980417 ORDEQ - Oil Companies - Notice of Non Compliance
65	Document	19980610 Pacific Env - ORDEQ - Response to DEQ Comments to RI Workplan
66	Document	19980721 Tosco - City of Portland - Summary of Remedial Activities
67	Document	19980929 ORDEQ - Tosco - Notice of Proposal to add to CRL
68	Document	19981029 Tosco-Multnomah Cty-Well Ownership Info Forms
69	Document	19981119 Tosco - ORDEQ - Transmittal Assessment Report

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70	Document	19981209 Tosco - State of OR - Well Ownership Form
71	Document	19981229 ORDEQ - TOSCO - Notice of Decision to Place Property on CRL
72	Document	199890420 US DOT - Wilbridge Group - Notice of Federal Interest for Pollution Incident
73	Document	19990602 ORDEQ - Oil Companies - Request for Data and GWMR
74	Document	19990615 IT Group - ORDEQ - Transmittal of Information
75	Document	19990719 ORDEQ - Oil Companies - DEQ Comments on Revised RI Workplan
76	Document	20000202 KHM Env - ORDEQ - Status of RIR Review
77	Document	20000623 IT Group - ORDEQ - Response to DEQ Comments on Revised RI WP
78	Document	20000816 Tosco - ORDEQ - DEQ Oversight Invoices
79	Document	20000831 ORDEQ - Tosco - State Application Number
80	Document	20000908 ORDEQ - Oil Companies - DEQ Conditional Approval of RI Workplan
81	Document	20000915 KHM - ORDEQ - Status of Remedial Investigation
82	Document	20001004 ORDEQ - Oil Companies - Notice of Non Compliance
83	Document	20001016 ORDEQ - Oil Companies - Extension of Due Date for RIR
84	Document	20001116 ORDEQ - Tosco - Payment of Invoices
85	Document	20001129 ORDEQ - Oil Companies - Approval of Remedial Investigation WP
86	Document	20001129 OWRD-Conoco-Well Tag Identification
87	Document	20010302 KHM Env - ORDEQ - Proposed Schedule for Completion
88	Document	20010315 - KHM Env - ORDEQ - Schedule of Completion
89	Document	20010322 OWRD-Conoco-Well Identification Tag
90	Document	20010322 OWRD-Conoco-Well Tag ID
91	Document	20010322 OWRD-Conoco-Well Tag ID Number
92	Document	20010322 OWRD-Conoco-Well Tag Ident
93	Document	20010322 OWRD-Conoco-Well Tag Identification
94	Document	20010326 ORDEQ - KHM Env - Approval of Schedule for Completion
95	Document	20010410 OWRD-Conoco-Well Identification
96	Document	20010410 OWRD-Conoco-Well Tag Identification
97	Document	20010514 ORDEQ - COP - Cultural Resources
98	Document	20010627 ORDEQ - KHM Env - DEQ Approval of Interim and Remedial Action
99	Document	20010911 OWRD-Conoco-Well ID
100	Document	20010911 OWRD-Conoco-Well ID Tag Program
101	Document	20010911 OWRD-Conoco-Well ID Tags
102	Document	20010911 OWRD-Conoco-Well Tag Identification
103	Document	20011012 City of Portland - Tosco - Land Use Review Notice
104	Document	20011015 OWRD-Conoco-Well ID Tag
105	Document	20011015 OWRD-Conoco-Well ID Tags
106	Document	20011015 OWRD-Conoco-Well Identification Tag
107	Document	20011015 OWRD-Conoco-Well Identification Tags
108	Document	20011019 ORDEQ - KHM Env - DEQ Approval of Modifications to GWM Program
109	Document	20011105 ORDEQ - OR Division of State Lands - DSL Permit Waiver
110	Document	20020205 OWRD-Conoco-Well Identification
111	Document	20020205 OWRD-Conoco-Well Tag Identification
112	Document	20020308 ORDEQ - KHM Env - DEQ Comments on Draft RIR
113	Document	20020322 ORDEQ - KHM Env - City Permit Waivers
114	Document	20020406 Chevron - ORDEQ - Response to March 8 2002 Letter
115	Document	20020418 Chevron - ORDEQ - Status of Response to DEQ Comments
116	Document	20020507 Tosco - ORDEQ - DEQ Oversight Invoices
117	Document	20020605 ORDEQ - KHM Env - Comments on Proposed Schedule
118	Document	20020718 KHM Env - ORDEQ - Revised Schedule
119	Document	20020719 KHM Env - ORDEQ - Revised Schedule
120	Document	20020731 ORDEQ - KHM Env - Approval of Revised Schedule
121	Document	20020815 KHM Env - ORDEQ - Comment Response Document
122	Document	20021002 KHM Env - ORDEQ - Summary of Major Meeting Issues
123	Document	20021219 ORDEQ - KHM Env - Response to Meeting Issues
124	Document	20030225 KHM Env - ORDEQ - Final Schedule for RI Report
125	Document	20030523 Delta Env - ORDEQ - Revised RI Report Schedule
126	Document	20030922 - ORDEQ - Delta Env - Comments on Preliminary Source Control Evaluation
127	Document	20040526 COP - ORDEQ - ORDEQ Oversight Invoices
128	Document	20040915 City of Portland - Chevron - Land Use Review More Info Needed
129	Document	20041014 Port of Portland - COP - Ground Lease
130	Document	20041021 Port of Portland - City of Portland - Review of Conoco/Chevron Land Use App
131	Document	20041028 US Dept of Commerce - US Army COE - Nonconcurrence w/Shell Sheet Pile Wall
132	Document	20041029 City of Portland - Conoco - Land Use Review Notice
133	Document	20041029 ORDEQ - Delta Env - Conditional Approval of RIR
134	Document	20041029 Portland - Oil Companies - Application for Permission to Install Source Control Measure
135	Document	20041102 City of Portland - Unocal - Zoning Plan Checksheet
136	Document	20041113 Conoco - State of OR - Well Ownership Form
137	Document	20041113 Unocal - State of OR - Well Ownership Form
138	Document	20041201 Port of Portland - Oil Companies - Ground Lease

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139	Document	20041209 ORDEQ - COP and Chevron - Approval of Control Measures
140	Document	20041221 COP - Multnomah County Clerk - Well Owner Information
141	Document	20042121 Conoco-Multnomah Cty-Well Ownership Info
142	Document	20050308 Delta Env - ORDEQ - GW Sampling Plan
143	Document	20050316 ORDEQ - Delta Env - Approval of GW Sampling Plan
144	Document	20051103 Tim Browning - Water Pollution Control - Transmittal Discharge Monitoring Report
145	Document	20070130 USCG - COP - Letter of Warning
146	Document	20080229-Other-Outfall 22 email
147	Document	20080301-Other-Outfall 22 email
148	Document	20080321-Other-Outfall 22 email
149	Document	20080326-Other-Outfall22 email
150	Document	20080328-Other-Outfall 22 email
151	Document	20080407-Other-Outfall 22 email
152	Document	20080408-Other-Outfall 22 email
153	Document	20080415-Other-Outfall 22 email
154	Document	20080416-Other-Outfall 22 email
155	Document	20080416-Other-Outfall 22 email3
156	Document	20080416-Other-Outfall22 email2
157	Document	19940307 Partic - Unocal Shell Chevron - Cost Sharing Agmt
158	Document	19940330 Consent Ord - DEQ and Willbridge Terminal Facilities - Consent Order
159	Document	19971121 ACC - City of Portland Pacific - Permit of Entry Agmt
160	Document	20050713-Permit-For Interim Remedial Action Work & Agreement for Easement
161	Document	00000000 Prop - Pacific Env - Project Strategy
162	Document	00000000 SOW - Riedel Env - Assessment Scope of Work
163	Document	19921211 Prop - SEACOR - Prepare Preliminary Assessments
164	Document	19930222 Prop - Chevron - 1993 Well Monitoring and Sampling Proposal
165	Document	19940428 CE - GeoEngineers - Project Budget and Schedule
166	Document	19941102 WP - GeoEngineers - Draft Interim Remedial Action WP
167	Document	19960114 SOW - Unocal - PRP Group Attorney SOW
168	Document	19960306 WP - GeoEngineers - Subsurface Work Plan
169	Document	19970611 WP - Pacific Env - Interim Action Workplan
170	Document	19970909 WP - Pacific Env - Draft Remedial Investigation Workplan
171	Document	20010418 WP - KHM - Draft Feasibility Study Workplan
172	Document	20010608 WP - Battelle - Forensic Investigation Workplan
173	Document	20040813 Prop - SAIC - Sheet Pile Wall Installation Proposal
174	Document	19940509 CE - CH2M HILL - Hourly Labor Rates
175	Document	19960228 WP - CH2M HILL - Interim Action Workplan
176	Document	19960500 WP - CH2M HILL - Storm Sewer Investigation Workplan
177	Document	19961015 WP - CH2M HILL - Subsurface Investigation Workplan
178	Document	00000000 Ridel Env - Unocal - Remediation Options with Notes
179	Document	00000000 Riedel Env - Unocal - Remediation Options
180	Document	00000000 Tosco - Willbridge Group - Remediation Notes
181	Document	00000000 Unocal Notes - Questions for Pacific Environmental
182	Document	1111-11-11-COMPANY-COMPANY-BP COMPLETION SCHEDULE
183	Document	19921231 Unocal - Hydrocarbon Inc - Soils Acceptance Application
184	Document	19930115 Chevron - Applied Geotechnology - Rejection Letter
185	Document	19930115 Chevron - Env Science and Engineering - Rejection Letter
186	Document	19930115 Chevron - SEACOR - Bid Acceptance
187	Document	19930202 Unocal - Unocal - Cost Sharing Summary
188	Document	19930211 Unocal Interoffice Memo - Preliminary Site Assessment Plans
189	Document	19930213 Unocal Interoffice Memo - Transmittal Estimate
190	Document	19930305 Unocal - Chevron - Monitoring and Sampling Program
191	Document	19930422 SEACOR - Unocal - Draft Questionnaire
192	Document	19930610 Unocal - Agency - Power of Attorney
193	Document	19930907 Unocal Interoffice Memo- Terminal Maximization
194	Document	19930923 Unocal - Meeting Agenda
195	Document	19931001 Unocal Interoffice Memo - Request Information
196	Document	19931004 Unocal - Unocal - Notice of Retained Records
197	Document	19931004 Unocal Interoffice Memo - Status and Future Scenarios
198	Document	19931009 Unocal Interoffice Memo - Environmental Update
199	Document	19931020 Williams Fredrickson and Stark - Unocal - Meeting Summary
200	Document	19931108 Unocal - Chevron - Joint Efforts
201	Document	19931115 Unocal - Unocal - Notice of Retained Records
202	Document	19931130 GeoEngineers - Unocal - Site Facility Status
203	Document	19931209 Williams Fredrickson and Stark - Unocal - Meeting Notes
204	Document	19931229 Unocal - Reported Spills Jan 1975 to Sept 1993
205	Document	19931229 Unocal - Reported Spills May 1963 to August 1993
206	Document	19931230 Chevron - Unocal - Interim Action Responsibilities
207	Document	19940113 Unocal - Williams Fredrickson and Stark - Review of Agreement

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208	Document	19940202 Unocal - Unocal - Notice of Retained Records
209	Document	19940208 GeoEngineers - Unocal - Charges for Site Plan
210	Document	19940218 Williams Fredrickson and Stark - Unocal - Transmittal Site Info
211	Document	19940221 Williams Fredrickson and Stark - Unocal - Remaining Issues
212	Document	19940223 Unocal Interoffice Memo - Recent Phone Conversations
213	Document	19940314 Unocal - Williams Fredrickson and Stark - Group Attorney
214	Document	19940406 Unocal - PTI Env Services - Rejection Letter
215	Document	19940509 Chevron - Unocal - Selection of Consultant
216	Document	19940803 Unocal - Unocal - Notice of Retained Records
217	Document	19940915 CH2M HILL - Consultants - Request for Information
218	Document	19940924 CH2M HILL - Unocal - Request Review
219	Document	19941001 Unocal - Unocal - Notice of Retained Records
220	Document	19941002 Unocal - Unocal - Notice of Retained Records
221	Document	19941004 Unocal Interoffice Memo - Legal Concerns
222	Document	19941017 Unocal - Unocal - Notice of Retained Records
223	Document	19941020 CH2M HILL - Unocal - On Going Interim Action
224	Document	1994-10-23-COMPANY-COMPANY-COST UPDATE
225	Document	19941025 CH2M HILL - Unocal - Activities Update
226	Document	1994-10-25-COMPANY-COMPANY-BP PROJECT ANALYSIS
227	Document	19941030 CH2M HILL - Unocal - Conference Call Schedule
228	Document	19941031 Williams Fredrickson and Stark - Unocal - Update to Memo
229	Document	1994-11-03-COMPANY-COMPANY-BP PROJECT AT PORTLAND
230	Document	19941107 Williams Fredrickson and Stark - Unocal - Confirm Meeting Issues
231	Document	1994-11-14-COMPANY-COMPANY-TANK USEAGE
232	Document	19941123 Williams Fredrickson and Stark - Unocal - Review of Interim Action Plan
233	Document	19941128 Unocal - Williams Fredrickson and Stark - Cost Sharing
234	Document	1994-11-28-COMPANY-COMPANY-BLACK OIL BLENDING REVIEW
235	Document	19941219 CH2M HILL - Union Oil - Transmittal Invoices
236	Document	19941229 Unocal - Unocal - Notice of Retained Records
237	Document	19950104 GeoEngineers - Unocal - Draft Cost Sharing Letter
238	Document	1995-01-09-COMPANY-COMPANY-MEETING AGENDA
239	Document	19950112 CH2M HILL - GeoEngineers - Begin Interim Action Monitoring
240	Document	19950116 Unocal Interoffice Memo - Laboratory Request
241	Document	1995-01-17-COMPANY-COMPANY-BLENDER PROTOCOL
242	Document	1995-01-17-COMPANY-COMPANY-ITEMS TO BE ADDRESSED BEFORE START-UP
243	Document	1995-01-18-COMPANY-COMPANY-COMMENTS REF PUMPS
244	Document	1995-01-18-COMPANY-COMPANY-RFO OPERATIONS
245	Document	1995-01-23-COMPANY-COMPANY-REVISED BP BLENDER START-UP AND SHUT-DOWN PROCE.
246	Document	19950126 Williams Fredrickson and Stark - Unocal - Address Issues
247	Document	19950130 Williams Fredrickson et al - Unocal - Meeting Confirmation
248	Document	19950203 GeoEngineers - Unocal - Electrical Power
249	Document	19950207 CH2M HILL - Unocal - Meeting Agenda
250	Document	19950207 Unocal - Unocal - Notice of Retained Records
251	Document	19950207 Unocal - Unocal - Notice Retained Record
252	Document	19950209 Unocal Interoffice Email - Chevron Pipelines
253	Document	19950216 Atty - Unocal - Request Prelim Assess
254	Document	19950221 CH2M HILL - Unocal - Comments on Boom Placement
255	Document	19950307 Unocal - Unocal - Notice of Retained Records
256	Document	19950310 CH2M HILL - Unocal - Group Attorney
257	Document	19950310 Williams Fredrickson and Stark - Unocal - Transmittal Letter
258	Document	19950314 CH2M HILL - Unocal - Conference Call Schedule
259	Document	19950315 W,F and S PC-Unocal-Recap of Phone Conversation
260	Document	19950315 Williams Fredrickson and Stark - Unocal - Confirm Conversation
261	Document	19950316 Williams Fredrickson and Stark - Unocal - Chronolgy of Events
262	Document	19950330 Unocal Memo - Meeting Agenda
263	Document	19950424 Uhocal - Unocal - Notice of Retained Records
264	Document	19950426 Chevron - Smith Env - Transmittal Agreement
265	Document	19950510 Williams Fredrickson and Stark - Unocal - Review
266	Document	19950530 Unocal Interoffice Email - Portland Tankage
267	Document	19950630 CH2M HILL - Unocal - Approval of Interim Action Plans
268	Document	19950717 CH2M HILL - Unocal - Oregon House Bill 3352
269	Document	19951004 Williams Fredrickson and Stark - Unocal - Transmittal Agreement
270	Document	19951005 GeoEngineers - Unocal - Draft Letter
271	Document	19951013 Unocal - Inventory of Tankage and Secondary Containment
272	Document	19951024 Unocal Interoffice Email - Transmittal Memo
273	Document	19951107 CH2M HILL - Unocal - Group Attorney Info
274	Document	19951108 Unocal Calculation Record - Legal Notes
275	Document	19951109 CH2M HILL - Oil Companies - PRP Meeting Action Items
276	Document	19951110 CH2M HILL - Unocal - Meeting Summary

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277	Document	19951114 Unocal - Chevron - Cost Share Change
278	Document	19951114 Unocal - Chevron - Request Adjustment to Cost Sharing Agreement
279	Document	19951114 Unocal Interoffice Email - Chevron Cost Recovery
280	Document	19951114 Unocal Interoffice Email - Cost Recovery
281	Document	19951120 Unocal Interoffice Email - Cost Recovery
282	Document	19951220 GeoEngineers - Unocal - Unsigned Permit
283	Document	19960103 CH2M HILL - Field Consultants - PAH Analytical Testing Update
284	Document	19960118 Bruce Brody Heine - Unocal - Well Sampling
285	Document	19960126 CH2M HILL - Unocal - Group Meeting Notice
286	Document	19960129 Unocal - Unocal - Notice of Retained Records
287	Document	19960205 Unocal Interoffice Memo - Meeting Schedule
288	Document	19960206 Unocal Interoffice Email - Portland Status
289	Document	19960208 Unocal Interoffice Email - Portland Legal
290	Document	19960212 Unocal Innteroffice Email - Portland Meeting
291	Document	19960213 Unocal - Chevron - Bid Specifications
292	Document	19960213 Unocal Interoffice Email - Portland Meeting
293	Document	19960214 Unocal Interoffice Memo - Meeting Agenda
294	Document	19960219 Unocal Interoffice Email - Selection of Attorney
295	Document	19960220 Unocal - Ross Rueke - Attorney Info
296	Document	19960221 CH2M HILL - Attorneys - Rejection Letters
297	Document	19960222 CH2M HILL - Unocal - Authorization
298	Document	19960222 CH2M HILL - Unocal - Meeting Summary
299	Document	19960223 CH2M HILL - Schwabe - Group Attorney
300	Document	19960304 GeoEngineers - Unocal - Update
301	Document	19960329 Unocal Interoffice Email - Tax Savings
302	Document	19960403 Unocal Interoffice Email - Transmittal Memo
303	Document	19960403 Unocal Interoffice Memo - Published References to Degraded Gasoline
304	Document	19960410 CH2M HILL - Unocal - Conference Call Schedule
305	Document	19960423 GeoEngineers - CH2M HILL - Storm Sewer Invetigation
306	Document	19960503 Unocal Interoffice Memo - Data Package
307	Document	19960515 CH2M HILL - Unocal - Conference Call Schedule
308	Document	19960515 Unocal Interoffice Email - Data
309	Document	19960517 CH2M HILL - Unocal - Conference Call Schedule
310	Document	19960517 Unocal Interoffice Email - Communication Problems
311	Document	19960517 Unocal Interoffice Memo - Transmittal Data Package
312	Document	19960521 Unocal - Walt Eiseman Information
313	Document	19960521 Unocal Interoffice Email - Conflict of Interest
314	Document	19960529 Unocal - Chevron - Requested Information
315	Document	19960530 Schwabe - Unocal - Transmittal Letter
316	Document	19960703 Schwabe - Williams - Conflict of Interest
317	Document	19960709 Atty - Unocal - Chevron Ignoring Unocal Demands per Cost Sharing Agreement
318	Document	19960709 Williams Fredrickson and Stark - Unocal - Review
319	Document	19960719 CH2M HILL - Unocal - Containment Boom
320	Document	19960723 Unocal - Schwabe - Conflict of Interest
321	Document	19960731 Philip Stern - Gerald Chesney - Email Re Second Legal Opinion
322	Document	19960731 Unocal Interoffice Memo - Project Summary
323	Document	19960801 Thomas Skok - Philip Stern - Email Re Contact Info
324	Document	19960805 CH2M HILL - Unocal - Scheduled Surveying
325	Document	19960805 Gary Gunderson - Joe Comstock - Email Re Meeting
326	Document	19960808 CH2M HILL - Unocal - Conference Call Schedule
327	Document	19960808 Gerlad Chesney - Joe Comstock - Email Re Meeting
328	Document	19960815 Chevron - Unocal - Requested Modifications
329	Document	19960820 Unocal - Schwabe - Copy Billings
330	Document	19960821 Unocal Interoffice Email - Billing Procedures
331	Document	19960827 Schwabe et al - Unocal - Transmittal Billing
332	Document	19960828 Unocal - Meeting Notes
333	Document	19960917 Chevron - Unocal - Agree with Proposals
334	Document	19961002 Peter Schnieders - Unocal - New Superintendent
335	Document	19961003 Chevron - Unocal - Cost Breakdown
336	Document	19961028 CH2M HILL - Unocal - Telephone Conversation Summary
337	Document	19961028 Chevron - Unocal - Conference Call
338	Document	19961029 Chevron - Unocal - Turnover
339	Document	19961107 Chevron - CH2M HILL - Discontinue Service
340	Document	19961108 GATX - Shell - Proj Mgr Change
341	Document	19961108 GeoEngineers - Unocal - Project Concerns
342	Document	19961116 CH2M HILL - Unocal - Questions
343	Document	19961118 Chevron - Unocal - Follow Up
344	Document	19961125 GeoEngineers - Unocal - Rental Equipment
345	Document	19961125 Schwabe et al - Unocal - EPA Approach

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346	Document	19961206 Unocal - Handwritten Notes
347	Document	19961206 Williams et al - Unocal - Hazardous Waste Liability
348	Document	19961210 Schwabe et al - Unocal - Attorney Letter
349	Document	19961217 Unocal - Meeting Notes
350	Document	19970116 Conoco-Conoco-Meeting Minutes
351	Document	19970116 Conoco-Conoco-Meeting Notes
352	Document	19970121 Kevin Freeman - Jill Kiernan - Metals Sampling Procedure
353	Document	19970227 76 Products Interoffice Memo - Update of Remediation Plan
354	Document	19970307 PEG-Conoco-Email re 1996 Quarterly Rpt
355	Document	19970422 Conoco-Conoco-PRP Meeting Notes
356	Document	19970422 Conoco-Conoco-RP Meeting Agenda
357	Document	19970612 Conoco-Conoco-Willbridge Meeting Notes
358	Document	19970624 Conoco-Conoco-RP Meeting Wkplan Approach
359	Document	19970701 Unocal - Unocal - Notice of Retained Records
360	Document	19970718 MSXSOPC-MSXSOPC-Comments on Wkplan
361	Document	19970722 Conoco-Conoco-RP Meeting Notes
362	Document	19970727 Conoco-Chevron-Resp to Wkplan approach
363	Document	19970806 PEGNET-Conoco-Summary of DEQ Meeting
364	Document	19970901 Unocal - Unocal - Notice of Retained Records
365	Document	19970912 PEGNET-Conoco-Re Draft Workplan
366	Document	19970922 ENE-Conoco-Review of Willamette SAP
367	Document	19970929 Conoco-Conoco-Willbridge Meeting Notes
368	Document	19971008 SantaFe-Tosco-Request for Info
369	Document	19971030 Tosco - Interim Action Meeting Notes
370	Document	19980305 COP - Handwritten Meeting Notes
371	Document	19980407 COP - Handwritten Meeting Notes
372	Document	19980514 Shell-N Creek-Request for Analyticals > 5yrs
373	Document	19981009 COP - Handwritten Notes
374	Document	19981125 COP - Handwritten Meeting Notes
375	Document	19990209 Pete Geiger - Kelly Kline - Willbridge Meeting Summary
376	Document	19990211 COP - Handwritten Notes
377	Document	19990729 COP - Handwritten Notes
378	Document	20000224 Tosco - Willbridge Group - Remediation Issues
379	Document	20000609 KHM - Tosco - Draft RI Report Evaluation
380	Document	20000913 KHM - Chevron - Repair of the 60 Inch Storm Sewer
381	Document	20010119 Tosco - KHM Env - Pile Installation
382	Document	20011102 Tosco - Striplin Env - Transmittal Historical Reports
383	Document	20011107 Conoco-Owner-Notice of Right to Lien
384	Document	2003028 Misc - Handwritten Willbridge Meeting Notes
385	Document	20031003 COP - Union Oil - Acceptance of Indemnity Tender
386	Document	20040405 Scott Miller - Integral Consulting - Transmittal Documents
387	Document	20040820 Delta - Integral Consulting - Transmittal Site Summary
388	Document	20041012 David Ashton - Kevin - Port Review of Application
389	Document	20041022 Delta Env - COP - Meeting with DEQ
390	Document	20041108 SAIC - US Army Core of Engineers - Response to Comments
391	Document	20070122 Chevron - COP - Request for Reimbursement
392	Document	20090312 - Corresp - Stantec - Portland Terminal Transition to ARCADIS/Chevron Memo
393	Document	19941103 GeoEngineers - Unocal - Revised Budget
394	Document	19960422 Unocal - Chevron - Cost Sharing and Recovery
395	Document	19971104 Tosco - Chevron - Cost Comparison
396	Document	19960927 City of Portland - Drilling Permit
397	Document	20021028 City of Portland - Wastewater Discharge Permit
398	Document	20041208-City of Portland-Site Development Permit
399	Document	20071001 City of Portland - Wastewater Discharge Permit
400	Document	20071002-City of Portland-Wastewater Discharge Permit No. 500015
401	Document	20071008 City of Portland - Official Signatory Authorization
402	Document	20080211-City of Hillsboro-Waste Permit No. 101016OR
403	Document	20080319-Non-Hazardous Waste Profile
404	Document	20080319-Spent Carbon Non-Hazardous Waste Profile
405	Document	20080514-City of Hillsboro-Non-Hazardous Waste Disposal Permit #101217OR
406	Document	Other-Outfall22 sheen event photos
407	Document	00000000 Assess - COP - Baseline Env Assessment Areas of Concern
408	Document	00000000 Assess - Misc - Various Spill Investigation Documents
409	Document	00000000 Compliance - Misc - CET Training Certificates and Employee Docs
410	Document	00000000 Mntrg - Delta Env - Groundwater Elevation Summary
411	Document	00000000 Mntrg - Misc - Lab Results and Tables
412	Document	00000000 Mntrg - Summit Bristol and Pacific Env - GW Data Presentation
413	Document	1111-11-11-CONTR -COMPANY-GEN ARRANGEMENT PLAN
414	Document	19890411 Assess - S Degens - Tanker Basin History

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415	Document	19890703 Mntrg - Riedel Env - June 1989 Summary
416	Document	19890808 Mntrg - Reidel Env - July 1989 Summary
417	Document	19901009 Mntrg - Riedel Env Services - Gauging Activities
418	Document	19901231 Assess - Riedel Env - Mobile Hydrocarbon Reassessment
419	Document	19910206 Remed - Riedel Env - 1990 Final Report
420	Document	19910208 Remed - Riedel Env - 1990 Final Report
421	Document	19911130 Mntrg - Riedel Env - March thru Nov 1991 Hydrocarbon Thickness Figures
422	Document	19911219 Assess - ORDEQ - Sample Preliminary Assessment
423	Document	19920303 Remed - Riedel Env - 1991 Final Report
424	Document	19920406 Remed - Riedal Env - 1991 Final Report
425	Document	19921003 Maps - GeoEngineers - Location of Wells Sampled
426	Document	19921003 Maps - GeoEngineers - Unocal Diesel Storage Locations
427	Document	19930000 Remed - Misc - 1993 Product Recovery
428	Document	19930000 Remed - Misc - 1993 Recovery Well Operational Log
429	Document	19930309 Other - GeoEngineers - Summary of RW Reconstruction Observations
430	Document	19930609 Mntrg - Delta Env - Semi Annual 1993 GWMR
431	Document	19930615 Assess - SEACOR - Drraft Preliminary Assessment
432	Document	19930929 Assess - Unocal - Dec 1975 to Jan 1993 Spills at Shell Facility
433	Document	19930929 Assess - Unocal - July 1981 to Feb 1993 Spills at Willamette River
434	Document	19930929 Assess - Unocal - July 1988 to April 1993 Spills at Various Locations
435	Document	19930929 Assess - Unocal - Nov 1984 to Aug 1988 Spills at McCall Facility
436	Document	19930929 Assess - Unocal - Sept 1989 to April 1993 Spills at Various Locations
437	Document	19931014 Mntrg - Delta Env - Semi Annual 1993 GWMR
438	Document	19931104 Assess - SEACOR - Environmental Site Assessment
439	Document	19931229 Assess - Unocal - Feb 1986 to June 1993 Spills at Atochem Facility
440	Document	19931229 Assess - Unocal - Jan 1971 to July 1993 Spills at Shell Facility
441	Document	19931229 Assess - Unocal - Jan 1975 to Sept 1993 Spills at Unocal Facility
442	Document	19931229 Assess - Unocal - Jan 1989 to Feb 1993 Spills at Willamette River
443	Document	19931229 Assess - Unocal - March 1982 to April 1993 Spills at Various Locations
444	Document	19931229 Assess - Unocal - May 1963 to Aug 1993 Spills at Chevron Facility
445	Document	19931229 Assess - Unocal - Oct 1982 to Sept 1993 Spills at McCall Facility
446	Document	19931229 Assess - Unocal - Sept 1963 to Aug 1992 Spills at Doane Ave Storm Sewer
447	Document	19940121 Mntrg - Analytical Technologies - Water Samples Results
448	Document	19940208 Assess - GeoEngineers - Contaminated Soil Report
449	Document	19940405 Assess - EMCON - McCall and Chevron Preliminary Assessments
450	Document	19940405 Assess - EMCON - Preliminary Assessment
451	Document	19940915 Remed - CH2M Hill - June thru August 1994 Progress Report
452	Document	19940929 Assess - SEACOR - Environmental Site Assessment
453	Document	19941027 Mntrg - GeoEngineers - Chemical Analysis Summary
454	Document	19941029 Assess - CH2M HILL - MW Elevation Survey
455	Document	19941118 Remed - CH2M HILL - Draft Interim Action Plan
456	Document	19941221 Mntrg - GeoEngineers - GW and Free Product Analysis Tables
457	Document	19950119 Remed - CH2M HILL - Sept - Nov 1994 Progress Report
458	Document	19950201 Remed - CH2M HILL - Interim Action Performance Review
459	Document	19950206 Assess - GeoEngineers - Summary of Free Product Conditions
460	Document	19950210 Remed - GeoEngineers - Recovery and Treatment System O and M
461	Document	19950221 Maps - GeoEngineers - Site Plan
462	Document	19950223 Mntrg - Analytical Tech - Water Sample Analysis
463	Document	19950301 Remed - GeoEngineers - Recovery and Treatment System O and M
464	Document	19950316 Mntrg - GeoEngineers - BETX and PAH Water Chemical Analysis
465	Document	19950331 Remed - GeoEngineers - Spent Carbon Profile and Lab Report
466	Document	19950400 Remed - CH2M HILL - Interim Action Field Coordination Plan
467	Document	19950621 Remed - CH2M HILL - March - May 1995 Progress Report
468	Document	19950626 Remed - CH2M HILL - June 1995 Report - Table Correction
469	Document	19950821 Remed - CH2M HILL - June and July 1995 Monthly PRP Report
470	Document	19950918 Remed - CH2M HILL - June - Aug 1995 Draft Progress Report
471	Document	19951003 Remed - CH2M HILL - June - Aug 1995 Progress Report
472	Document	19951009 Assess - GeoEngineers - Product Sampling and Fingerprinting
473	Document	19951018 Remed - CH2M HILL - Sept 1995 Interim Action Status Report
474	Document	19951020 Remed - GeoEngineers - Status of Interim Action
475	Document	19951024 Assess - Unocal - Summary of Data for Free Products
476	Document	19951222 Remed - CH2M HILL - Sept - Nov 1995 RI FS Progress Report
477	Document	19960103 Mntrg - CH2M HILL - January 1996 Sampling Event
478	Document	19960108 Mntrg - CH2M HILL - Various GWM Tables
479	Document	19960119 Remed - CH2M HILL - Dec 1995 Interim Action Monthly Report
480	Document	19960411 Mntrg - CH2M HILL - Flood Water Monitoring and Benzene Conc
481	Document	19960517 Assess - Unocal - Data Package
482	Document	19961003 Remed - CH2M HILL - June - August 1996 RI FS Interim Action Report
483	Document	19961030 Assess - Unocal - Results of Geochemical Fingerprinting

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484	Document	19961206 Mntrg - CH2M HILL - Updated Benzene Concentrations in Wells
485	Document	19970102 Assess - CH2M HILL - Storm Sewer Investigation Summary Report
486	Document	19970402 Remed - Pacific Env - 4Q 1996 RI FS Interim Action Report
487	Document	19970411 Assess - Meredith Boli & Assoc - Evaluation of Aerial Photos
488	Document	19970618 Remed - Pacific Env - 1Q 1997 RI FS Interim Action Report
489	Document	19970625 Assess - Pacific Env - PRP Background Search
490	Document	19970816 Assess - Remediation Technologies - Baseline Ranking & Phase II SOW
491	Document	19971016 Remed - Pacific Env - 2Q 1997 RI FS Interim Action Report
492	Document	19971210 Remed - Pacific Env - 3Q 1997 RI FS Interim Action Report
493	Document	19980102 Other-ENSR-Tank Install Dwgs and Calcs
494	Document	19980115 Other - ORDEQ - Guidance for Consideration of Land Use
495	Document	19980304 Assess - Caswell Hertel - -MW Survey Info
496	Document	19980316 Remed - Pacific Env - Barrier Wall Construction Report
497	Document	19980508 Assess - Pacific Env - Barrier Wall Sampling and GW Elevation Results
498	Document	19980520 Remed - Pacific Env - Barrier Wall Construction Report
499	Document	19980702 Remed - Pacific Env - 1Q 1998 RI FS Interim Action Report
500	Document	19980818 Remed - Pacific Env - 2Q 1998 RI FS Interim Action Report
501	Document	19981113 Remed - Pacific Env - 3Q 1998 RI FS Interim Action Report
502	Document	19990217 Assess - ThermoRetec - Phase II Environmental Assessment Report
503	Document	19990222 Other-TPS-Soil Recycling Cert
504	Document	19991022 Remed - IT Group - 2Q 1999 RI FS Interim Action Report
505	Document	19991209 Other-TPS-Customer Job Report
506	Document	19991209 Other-TPS-Waste Manifest
507	Document	20000310 Remed - IT Group - 4Q 1999 RI FS Interim Action Report
508	Document	20000731 Other - KHM - Site Health and Safety Plan
509	Document	20000825 Remed - IT Group - 2Q 2000 RI FS Interim Action Report
510	Document	20001108 Assess - GeoEngineers - Soil Sampling Report
511	Document	20001229 Other-TPS-Soil Recycling Cert
512	Document	20010300 Mntrg - KHM Env - 3Q 2000 GWMR
513	Document	20010300 Mntrg - KHM Env - 4Q 2000 GWMR
514	Document	20010515 Mntrg - KHM Env - GW Sampling Program Evaluation
515	Document	20010608 Remed - KHM - Interim Remedial Action Engineering Design Report
516	Document	20010621 Mntrg - KHM Env - 1Q 2001 GWMR
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526	Document	20021014 Compliance - KHM Env - Sept 2002 Discharge Monitoring Report
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528	Document	20030115 Mntrg - KHM Env - Semi Annual GWMR
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534	Document	20030424 Assess - KHM Env - Preliminary Source Control Evaluation
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547	Document	20040507 Remed - Delta - Discharge Mont Report
548	Document	20040609 Remed - Delta - Discharge Mont Report
549	Document	20040714 Compliance - Delta Env - June 2004 Discharge Monitoring Report
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552	Document	20040913 Remed - Delta - Discharge Mont Report

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558	Document	20050208 Remed - Delta Env - Well Abandonment and Modification and RW Install Report
559	Document	20050214 Remed - Delta - Discharge Mont Report
560	Document	20050310 Remed - Delta - Discharge Mont Report
561	Document	20050315 Mntrg - Delta Env - Semi Annual 2004 GWMR
562	Document	20050405 Remed - Delta - Discharge Mont Report
563	Document	20050510 Mntrg - Delta Env - Semi Annual GWMR
564	Document	20050510 Remed - Delta - Discharge Monitoring Report
565	Document	20051129 Mntrg - Delta Env - Semi Annual Groundwater Monitoring Report
566	Document	20051208 Compliance - Delta Env - November 2005 Discharge Monitoring Report
567	Document	20070424-Other- DELTA -Erodable Soil Sampling Plan
568	Document	20071008-Mntrg-DELTA-Sept 2007 DMR
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571	Document	20071115-Mntrg-Delta-Semi-Annual Groundwater Monitoring Report (2Q07 & 3Q07)
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604	Document	20081002 Mntrg - Stantec - September 2008 Discharge Monitoring Report
605	Document	20081028 Mntrg - Stantec - October 2008 Discharge Monitoring Report
606	Document	20081202 Mntrg - Stantec - November 2008 Discharge Monitoring Report
607	Document	20081215-Mntrg-Delta-SA GWM REPORT - PART 7
608	Document	20081215-Mntrg-Delta-Semi-Annual GWM Report (April 2008 through Sept 2008)
609	Document	20090113 - Monitoring - Stantec - 3Q08 GWET System Report
610	Document	20090121 Mntrg Stantec Jan 2009 DMR Rpt
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421	Reports	103 KB
422	Reports	597 KB
423	Reports	2432 KB
424	Reports	2260 KB
425	Reports	60 KB
426	Reports	60 KB
427	Reports	14 KB
428	Reports	347 KB
429	Reports	85 KB
430	Reports	938 KB
431	Reports	2 Items
432	Reports	52 KB
433	Reports	17 KB
434	Reports	23 KB
435	Reports	11 KB
436	Reports	14 KB
437	Reports	4188 KB
438	Reports	6205 KB
439	Reports	52 KB
440	Reports	468 KB
441	Reports	131 KB
442	Reports	22 KB
443	Reports	45 KB
444	Reports	121 KB
445	Reports	14 KB
446	Reports	46 KB
447	Reports	156 KB
448	Reports	55 KB
449	Reports	3591 KB
450	Reports	3153 KB
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453	Reports	92 KB
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473	Reports	282 KB
474	Reports	96 KB
475	Reports	113 KB
476	Reports	1197 KB
477	Reports	96 KB
478	Reports	260 KB
479	Reports	275 KB
480	Reports	520 KB
481	Reports	1421 KB
482	Reports	1210 KB
483	Reports	220 KB

	C	D
484	Reports	227 KB
485	Reports	1441 KB
486	Reports	8730 KB
487	Reports	3485 KB
488	Reports	5268 KB
489	Reports	626 KB
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492	Reports	5269 KB
493	Reports	748 KB
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508	Reports	2202 KB
509	Reports	6714 KB
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526	Reports	804 KB
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530	Reports	810 KB
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549	Reports	350 KB
550	Reports	360 KB
551	Reports	8150 KB
552	Reports	277 KB

	C	D
553	Reports	2689 KB
554	Reports	462 KB
555	Reports	412 KB
556	Reports	2 Items
557	Reports	318 KB
558	Reports	1271 KB
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561	Reports	7746 KB
562	Reports	315 KB
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566	Reports	422 KB
567	Reports	7743 KB
568	Reports	474 KB
569	Reports	563 KB
570	Reports	515 KB
571	Reports	3 Items
572	Reports	627 KB
573	Reports	387 KB
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575	Reports	1071 KB
576	Reports	4423 KB
577	Reports	3229 KB
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579	Reports	4756 KB
580	Reports	1024 KB
581	Reports	6043 KB
582	Reports	10924 KB
583	Reports	3261 KB
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585	Reports	3406 KB
586	Reports	11771 KB
587	Reports	6900 KB
588	Reports	3356 KB
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593	Reports	3747 KB
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595	Reports	1967 KB
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597	Reports	5804 KB
598	Reports	4552 KB
599	Reports	8983 KB
600	Reports	7539 KB
601	Reports	8193 KB
602	Reports	3388 KB
603	Reports	7957 KB
604	Reports	1046 KB
605	Reports	990 KB
606	Reports	1087 KB
607	Reports	1496 KB
608	Reports	12 Items
609	Reports	4998 KB
610	Reports	3124 KB
611	Reports	2880 KB
612	Reports	428 KB

	A	B
1		**DRAFT Summary - Document List for Site 00922 - Portland Terminal - Oregon**
2	**Type**	**Title**
3	Document	19960304 - ACP - Schwabe - CH2M HILL - Subtasks
4	Document	19960304 - ACP - Schwabe - Unocal - Legal Representation
5	Document	19960515 - ACP - Schwabe - Unocal - Legal Responsibility
6	Document	19890908 Unocal - ORDEQ - Tank Update Information
7	Document	19920709 ORDEQ - Chevron - Plan to Conduct Preliminary Assessment
8	Document	19920709 ORDEQ - Chevron - Preliminary Assessment
9	Document	19920727 ORDEQ - Unocal - Preliminary Assessment
10	Document	19920821 Unocal - City of Portland - Removal of Boom
11	Document	19921015 ORDEQ - Unocal - Voluntary Cleanup Program
12	Document	19921214 ORDEQ - Union Oil - Notice of Proposal to List Contaminated Property
13	Document	19930122 GeoEngineers - ORDEQ - Resonce to Notification of Intent to Place Site on CRL
14	Document	19930610 SEACOR - Oil Companies - Submittal Date for Draft Reports
15	Document	19930630 ORDEQ - Unocal - Preliminary Assessment
16	Document	19930630 ORDEQ - Unocal - Review of Preliminary Assessment
17	Document	19930805 ORDEQ - Unocal - Voluntary Cleanup Program
18	Document	19930927 - ORDEQ - Unocal - Meeting Notice
19	Document	19930927 ORDEQ - Unocal - Site Update
20	Document	19931019 ORDEQ - Oil Companies - Transmittal Statement of Work
21	Document	19931115 Chevron - ORDEQ - Comments and Draft Order
22	Document	19931115 Union Oil - ORDEQ - Comments on Consent Order and SOW
23	Document	19931216 DEQ - Attorneys - 2nd Draft of Consent Order
24	Document	19940118 Unocal - ORDEQ - Product Recovery
25	Document	19940203 Shell Chevron Unocal - DEQ - Comment on Consent Order
26	Document	19940209 Chevron - ORDEQ - Transmittal Well Sampling Results
27	Document	19940218 DEQ - Attorneys - Revision to Consent Order
28	Document	19940503 DEQ - Shell Unocal Chevron - Attach A Replacement for Consent Order
29	Document	19940808 ORDEQ - Oil Companies - DEQ Project Manager Assignment
30	Document	19940823 CH2M Hill - ORDEQ - Meeting Confirmation
31	Document	19940922 ORDEQ - CH2M Hill - Meeting Summary
32	Document	19940927 ORDEQ - CH2M Hill - RI FS Oversight Costs
33	Document	19941004 GeoEng - ODEQ - Request for Special Permit
34	Document	19941129 Shell - DEQ - Ownership Change
35	Document	19941130 GeoEng - ODEQ - Request Completion of LUCS
36	Document	19941201 CH2M HILL - Port of Portland - Transmittal Workplan
37	Document	19941202 GeoEng - ODEQ - Request for Special Permit
38	Document	19941212 ODEQ - Unocal - Special Permit Granted
39	Document	19941213 GeoEng - ODEQ - GW Discharge
40	Document	19950101 Shell - DEQ - Shell to Comply with Consent Order
41	Document	19950223 GeoEng - ODEQ - Withdraw NPDES App
42	Document	19950228 ORDEQ - CH2M HILL - DEQ Comments on Draft Interim Action Plan
43	Document	19950302 Port of Portland - Unocal - Land Value Adjustment
44	Document	19950309 City of Portland - Williams Fredrickson et al - Responsibility Letter and Docs
45	Document	19950622 GeoEngineers - City of Portland - App to Occupy Right of Way
46	Document	19950622 GeoEngineers - City of Portland - Right of Entry Request
47	Document	19951004 GeoEngineers - City of Portland - Application to Occupy Right of Way
48	Document	19960402 ORDEQ - CH2M Hill - Approval of Workplan
49	Document	19960522 ORDEQ - CH2M HILL - Workplan Approval
50	Document	19960912 GeoEng-City of Port-App to Occupy ROW
51	Document	19961108 GATX - ORDEQ - Project Management Assignment
52	Document	19961119 ORDEQ - Shell Oil - Review of GWM Data
53	Document	19970624 Tosco - ORDEQ Meeting Notes
54	Document	19970806 ORDEQ - Oil Companies - RI FS Workplan
55	Document	19970813 Tosco - City of Portland Meeting Notes
56	Document	19970821 Unocal - Port of Portland - Amendment 1 to Ground Lease and Consent to Assignment
57	Document	19970903 Pacific - City of Portland - Right of Entry
58	Document	19970904 ORDEQ - Pacific Env - DEQ Review of Interim Action WP
59	Document	19970917 Pacific Env - ORDEQ - Response to DEQ Comments
60	Document	19970924 City of Portland - Pacific - Info Needed for Right of Entry Permit
61	Document	19971014 Pacific - City of Portland - Response to Comments
62	Document	19971105 ORDEQ - Oil Companies - Approval of Interim Action
63	Document	19980408 Tosco - DEQ Meeting Notes
64	Document	19980417 ORDEQ - Oil Companies - Notice of Non Compliance
65	Document	19980610 Pacific Env - ORDEQ - Response to DEQ Comments to RI Workplan
66	Document	19980721 Tosco - City of Portland - Summary of Remedial Activities
67	Document	19980929 ORDEQ - Tosco - Notice of Proposal to add to CRL
68	Document	19981029 Tosco-Multnomah Cty-Well Ownership Info Forms
69	Document	19981119 Tosco - ORDEQ - Transmittal Assessment Report

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70	Document	19981209 Tosco - State of OR - Well Ownership Form
71	Document	19981229 ORDEQ - TOSCO - Notice of Decision to Place Property on CRL
72	Document	199890420 US DOT - Wilbridge Group - Notice of Federal Interest for Pollution Incident
73	Document	19990602 ORDEQ - Oil Companies - Request for Data and GWMR
74	Document	19990615 IT Group - ORDEQ - Transmittal of Information
75	Document	19990719 ORDEQ - Oil Companies - DEQ Comments on Revised RI Workplan
76	Document	20000202 KHM Env - ORDEQ - Status of RIR Review
77	Document	20000623 IT Group - ORDEQ - Response to DEQ Comments on Revised RI WP
78	Document	20000816 Tosco - ORDEQ - DEQ Oversight Invoices
79	Document	20000831 ORDEQ - Tosco - State Application Number
80	Document	20000908 ORDEQ - Oil Companies - DEQ Conditional Approval of RI Workplan
81	Document	20000915 KHM - ORDEQ - Status of Remedial Investigation
82	Document	20001004 ORDEQ - Oil Companies - Notice of Non Compliance
83	Document	20001016 ORDEQ - Oil Companies - Extension of Due Date for RIR
84	Document	20001116 ORDEQ - Tosco - Payment of Invoices
85	Document	20001129 ORDEQ - Oil Companies - Approval of Remedial Investigation WP
86	Document	20001129 OWRD-Conoco-Well Tag Identification
87	Document	20010302 KHM Env - ORDEQ - Proposed Schedule for Completion
88	Document	20010315 - KHM Env - ORDEQ - Schedule of Completion
89	Document	20010322 OWRD-Conoco-Well Identification Tag
90	Document	20010322 OWRD-Conoco-Well Tag ID
91	Document	20010322 OWRD-Conoco-Well Tag ID Number
92	Document	20010322 OWRD-Conoco-Well Tag Ident
93	Document	20010322 OWRD-Conoco-Well Tag Identification
94	Document	20010326 ORDEQ - KHM Env - Approval of Schedule for Completion
95	Document	20010410 OWRD-Conoco-Well Identification
96	Document	20010410 OWRD-Conoco-Well Tag Identification
97	Document	20010514 ORDEQ - COP - Cultural Resources
98	Document	20010627 ORDEQ - KHM Env - DEQ Approval of Interim and Remedial Action
99	Document	20010911 OWRD-Conoco-Well ID
100	Document	20010911 OWRD-Conoco-Well ID Tag Program
101	Document	20010911 OWRD-Conoco-Well ID Tags
102	Document	20010911 OWRD-Conoco-Well Tag Identification
103	Document	20011012 City of Portland - Tosco - Land Use Review Notice
104	Document	20011015 OWRD-Conoco-Well ID Tag
105	Document	20011015 OWRD-Conoco-Well ID Tags
106	Document	20011015 OWRD-Conoco-Well Identification Tag
107	Document	20011015 OWRD-Conoco-Well Identification Tags
108	Document	20011019 ORDEQ - KHM Env - DEQ Approval of Modifications to GWM Program
109	Document	20011105 ORDEQ - OR Division of State Lands - DSL Permit Waiver
110	Document	20020205 OWRD-Conoco-Well Identification
111	Document	20020205 OWRD-Conoco-Well Tag Identification
112	Document	20020308 ORDEQ - KHM Env - DEQ Comments on Draft RIR
113	Document	20020322 ORDEQ - KHM Env - City Permit Waivers
114	Document	20020406 Chevron - ORDEQ - Response to March 8 2002 Letter
115	Document	20020418 Chevron - ORDEQ - Status of Response to DEQ Comments
116	Document	20020507 Tosco - ORDEQ - DEQ Oversight Invoices
117	Document	20020605 ORDEQ - KHM Env - Comments on Proposed Schedule
118	Document	20020718 KHM Env - ORDEQ - Revised Schedule
119	Document	20020719 KHM Env - ORDEQ - Revised Schedule
120	Document	20020731 ORDEQ - KHM Env - Approval of Revised Schedule
121	Document	20020815 KHM Env - ORDEQ - Comment Response Document
122	Document	20021002 KHM Env - ORDEQ - Summary of Major Meeting Issues
123	Document	20021219 ORDEQ - KHM Env - Response to Meeting Issues
124	Document	20030225 KHM Env - ORDEQ - Final Schedule for RI Report
125	Document	20030523 Delta Env - ORDEQ - Revised RI Report Schedule
126	Document	20030922 - ORDEQ - Delta Env - Comments on Preliminary Source Control Evaluation
127	Document	20040526 COP - ORDEQ - ORDEQ Oversight Invoices
128	Document	20040915 City of Portland - Chevron - Land Use Review More Info Needed
129	Document	20041014 Port of Portland - COP - Ground Lease
130	Document	20041021 Port of Portland - City of Portland - Review of Conoco/Chevron Land Use App
131	Document	20041028 US Dept of Commerce - US Army COE - Nonconcurrence w/Shell Sheet Pile Wall
132	Document	20041029 City of Portland - Conoco - Land Use Review Notice
133	Document	20041029 ORDEQ - Delta Env - Conditional Approval of RIR
134	Document	20041029 Portland - Oil Companies - Application for Permission to Install Source Control Measure
135	Document	20041102 City of Portland - Unocal - Zoning Plan Checksheet
136	Document	20041113 Conoco - State of OR - Well Ownership Form
137	Document	20041113 Unocal - State of OR - Well Ownership Form
138	Document	20041201 Port of Portland - Oil Companies - Ground Lease

	A	B
139	Document	20041209 ORDEQ - COP and Chevron - Approval of Control Measures
140	Document	20041221 COP - Multnomah County Clerk - Well Owner Information
141	Document	20042121 Conoco-Multnomah Cty-Well Ownership Info
142	Document	20050308 Delta Env - ORDEQ - GW Sampling Plan
143	Document	20050316 ORDEQ - Delta Env - Approval of GW Sampling Plan
144	Document	20051103 Tim Browning - Water Pollution Control - Transmittal Discharge Monitoring Report
145	Document	20070130 USCG - COP - Letter of Warning
146	Document	20080229-Other-Outfall 22 email
147	Document	20080301-Other-Outfall 22 email
148	Document	20080321-Other-Outfall 22 email
149	Document	20080326-Other-Outfall22 email
150	Document	20080328-Other-Outfall 22 email
151	Document	20080407-Other-Outfall 22 email
152	Document	20080408-Other-Outfall 22 email
153	Document	20080415-Other-Outfall 22 email
154	Document	20080416-Other-Outfall 22 email
155	Document	20080416-Other-Outfall 22 email3
156	Document	20080416-Other-Outfall22 email2
157	Document	19940307 Partic - Unocal Shell Chevron - Cost Sharing Agmt
158	Document	19940330 Consent Ord - DEQ and Willbridge Terminal Facilities - Consent Order
159	Document	19971121 ACC - City of Portland Pacific - Permit of Entry Agmt
160	Document	20050713-Permit-For Interim Remedial Action Work & Agreement for Easement
161	Document	00000000 Prop - Pacific Env - Project Strategy
162	Document	00000000 SOW - Riedel Env - Assessment Scope of Work
163	Document	19921211 Prop - SEACOR - Prepare Preliminary Assessments
164	Document	19930222 Prop - Chevron - 1993 Well Monitoring and Sampling Proposal
165	Document	19940428 CE - GeoEngineers - Project Budget and Schedule
166	Document	19941102 WP - GeoEngineers - Draft Interim Remedial Action WP
167	Document	19960114 SOW - Unocal - PRP Group Attorney SOW
168	Document	19960306 WP - GeoEngineers - Subsurface Work Plan
169	Document	19970611 WP - Pacific Env - Interim Action Workplan
170	Document	19970909 WP - Pacific Env - Draft Remedial Investigation Workplan
171	Document	20010418 WP - KHM - Draft Feasibility Study Workplan
172	Document	20010608 WP - Battelle - Forensic Investigation Workplan
173	Document	20040813 Prop - SAIC - Sheet Pile Wall Installation Proposal
174	Document	19940509 CE - CH2M HILL - Hourly Labor Rates
175	Document	19960228 WP - CH2M HILL - Interim Action Workplan
176	Document	19960500 WP - CH2M HILL - Storm Sewer Investigation Workplan
177	Document	19961015 WP - CH2M HILL - Subsurface Investigation Workplan
178	Document	00000000 Ridel Env - Unocal - Remediation Options with Notes
179	Document	00000000 Riedel Env - Unocal - Remediation Options
180	Document	00000000 Tosco - Willbridge Group - Remediation Notes
181	Document	00000000 Unocal Notes - Questions for Pacific Environmental
182	Document	1111-11-11-COMPANY-COMPANY-BP COMPLETION SCHEDULE
183	Document	19921231 Unocal - Hydrocarbon Inc - Soils Acceptance Application
184	Document	19930115 Chevron - Applied Geotechnology - Rejection Letter
185	Document	19930115 Chevron - Env Science and Engineering - Rejection Letter
186	Document	19930115 Chevron - SEACOR - Bid Acceptance
187	Document	19930202 Unocal - Unocal - Cost Sharing Summary
188	Document	19930211 Unocal Interoffice Memo - Preliminary Site Assessment Plans
189	Document	19930213 Unocal Interoffice Memo - Transmittal Estimate
190	Document	19930305 Unocal - Chevron - Monitoring and Sampling Program
191	Document	19930422 SEACOR - Unocal - Draft Questionnaire
192	Document	19930610 Unocal - Agency - Power of Attorney
193	Document	19930907 Unocal Interoffice Memo- Terminal Maximization
194	Document	19930923 Unocal - Meeting Agenda
195	Document	19931001 Unocal Interoffice Memo - Request Information
196	Document	19931004 Unocal - Unocal - Notice of Retained Records
197	Document	19931004 Unocal Interoffice Memo - Status and Future Scenarios
198	Document	19931009 Unocal Interoffice Memo - Environmental Update
199	Document	19931020 Williams Fredrickson and Stark - Unocal - Meeting Summary
200	Document	19931108 Unocal - Chevron - Joint Efforts
201	Document	19931115 Unocal - Unocal - Notice of Retained Records
202	Document	19931130 GeoEngineers - Unocal - Site Facility Status
203	Document	19931209 Williams Fredrickson and Stark - Unocal - Meeting Notes
204	Document	19931229 Unocal - Reported Spills Jan 1975 to Sept 1993
205	Document	19931229 Unocal - Reported Spills May 1963 to August 1993
206	Document	19931230 Chevron - Unocal - Interim Action Responsibilities
207	Document	19940113 Unocal - Williams Fredrickson and Stark - Review of Agreement

	A	B
208	Document	19940202 Unocal - Unocal - Notice of Retained Records
209	Document	19940208 GeoEngineers - Unocal - Charges for Site Plan
210	Document	19940218 Williams Fredrickson and Stark - Unocal - Transmittal Site Info
211	Document	19940221 Williams Fredrickson and Stark - Unocal - Remaining Issues
212	Document	19940223 Unocal Interoffice Memo - Recent Phone Conversations
213	Document	19940314 Unocal - Williams Fredrickson and Stark - Group Attorney
214	Document	19940406 Unocal - PTI Env Services - Rejection Letter
215	Document	19940509 Chevron - Unocal - Selection of Consultant
216	Document	19940803 Unocal - Unocal - Notice of Retained Records
217	Document	19940915 CH2M HILL - Consultants - Request for Information
218	Document	19940924 CH2M HILL - Unocal - Request Review
219	Document	19941001 Unocal - Unocal - Notice of Retained Records
220	Document	19941002 Unocal - Unocal - Notice of Retained Records
221	Document	19941004 Unocal Interoffice Memo - Legal Concerns
222	Document	19941017 Unocal - Unocal - Notice of Retained Records
223	Document	19941020 CH2M HILL - Unocal - On Going Interim Action
224	Document	1994-10-23-COMPANY-COMPANY-COST UPDATE
225	Document	19941025 CH2M HILL - Unocal - Activities Update
226	Document	1994-10-25-COMPANY-COMPANY-BP PROJECT ANALYSIS
227	Document	19941030 CH2M HILL - Unocal - Conference Call Schedule
228	Document	19941031 Williams Fredrickson and Stark - Unocal - Update to Memo
229	Document	1994-11-03-COMPANY-COMPANY-BP PROJECT AT PORTLAND
230	Document	19941107 Williams Fredrickson and Stark - Unocal - Confirm Meeting Issues
231	Document	1994-11-14-COMPANY-COMPANY-TANK USEAGE
232	Document	19941123 Williams Fredrickson and Stark - Unocal - Review of Interim Action Plan
233	Document	19941128 Unocal - Williams Fredrickson and Stark - Cost Sharing
234	Document	1994-11-28-COMPANY-COMPANY-BLACK OIL BLENDING REVIEW
235	Document	19941219 CH2M HILL - Union Oil - Transmittal Invoices
236	Document	19941229 Unocal - Unocal - Notice of Retained Records
237	Document	19950104 GeoEngineers - Unocal - Draft Cost Sharing Letter
238	Document	1995-01-09-COMPANY-COMPANY-MEETING AGENDA
239	Document	19950112 CH2M HILL - GeoEngineers - Begin Interim Action Monitoring
240	Document	19950116 Unocal Interoffice Memo - Laboratory Request
241	Document	1995-01-17-COMPANY-COMPANY-BLENDER PROTOCOL
242	Document	1995-01-17-COMPANY-COMPANY-ITEMS TO BE ADDRESSED BEFORE START-UP
243	Document	1995-01-18-COMPANY-COMPANY-COMMENTS REF PUMPS
244	Document	1995-01-18-COMPANY-COMPANY-RFO OPERATIONS
245	Document	1995-01-23-COMPANY-COMPANY-REVISED BP BLENDER START-UP AND SHUT-DOWN PROCE.
246	Document	19950126 Williams Fredrickson and Stark - Unocal - Address Issues
247	Document	19950130 Williams Fredrickson et al - Unocal - Meeting Confirmation
248	Document	19950203 GeoEngineers - Unocal - Electrical Power
249	Document	19950207 CH2M HILL - Unocal - Meeting Agenda
250	Document	19950207 Unocal - Unocal - Notice of Retained Records
251	Document	19950207 Unocal - Unocal - Notice Retained Record
252	Document	19950209 Unocal Interoffice Email - Chevron Pipelines
253	Document	19950216 Atty - Unocal - Request Prelim Assess
254	Document	19950221 CH2M HILL - Unocal - Comments on Boom Placement
255	Document	19950307 Unocal - Unocal - Notice of Retained Records
256	Document	19950310 CH2M HILL - Unocal - Group Attorney
257	Document	19950310 Williams Fredrickson and Stark - Unocal - Transmittal Letter
258	Document	19950314 CH2M HILL - Unocal - Conference Call Schedule
259	Document	19950315 W,F and S PC-Unocal-Recap of Phone Conversation
260	Document	19950315 Williams Fredrickson and Stark - Unocal - Confirm Conversation
261	Document	19950316 Williams Fredrickson and Stark - Unocal - Chronolgy of Events
262	Document	19950330 Unocal Memo - Meeting Agenda
263	Document	19950424 Uhocal - Unocal - Notice of Retained Records
264	Document	19950426 Chevron - Smith Env - Transmittal Agreement
265	Document	19950510 Williams Fredrickson and Stark - Unocal - Review
266	Document	19950530 Unocal Interoffice Email - Portland Tankage
267	Document	19950630 CH2M HILL - Unocal - Approval of Interim Action Plans
268	Document	19950717 CH2M HILL - Unocal - Oregon House Bill 3352
269	Document	19951004 Williams Fredrickson and Stark - Unocal - Transmittal Agreement
270	Document	19951005 GeoEngineers - Unocal - Draft Letter
271	Document	19951013 Unocal - Inventory of Tankage and Secondary Containment
272	Document	19951024 Unocal Interoffice Email - Transmittal Memo
273	Document	19951107 CH2M HILL - Unocal - Group Attorney Info
274	Document	19951108 Unocal Calculation Record - Legal Notes
275	Document	19951109 CH2M HILL - Oil Companies - PRP Meeting Action Items
276	Document	19951110 CH2M HILL - Unocal - Meeting Summary

	A	B
277	Document	19951114 Unocal - Chevron - Cost Share Change
278	Document	19951114 Unocal - Chevron - Request Adjustment to Cost Sharing Agreement
279	Document	19951114 Unocal Interoffice Email - Chevron Cost Recovery
280	Document	19951114 Unocal Interoffice Email - Cost Recovery
281	Document	19951120 Unocal Interoffice Email - Cost Recovery
282	Document	19951220 GeoEngineers - Unocal - Unsigned Permit
283	Document	19960103 CH2M HILL - Field Consultants - PAH Analytical Testing Update
284	Document	19960118 Bruce Brody Heine - Unocal - Well Sampling
285	Document	19960126 CH2M HILL - Unocal - Group Meeting Notice
286	Document	19960129 Unocal - Unocal - Notice of Retained Records
287	Document	19960205 Unocal Interoffice Memo - Meeting Schedule
288	Document	19960206 Unocal Interoffice Email - Portland Status
289	Document	19960208 Unocal Interoffice Email - Portland Legal
290	Document	19960212 Unocal Innteroffice Email - Portland Meeting
291	Document	19960213 Unocal - Chevron - Bid Specifications
292	Document	19960213 Unocal Interoffice Email - Portland Meeting
293	Document	19960214 Unocal Interoffice Memo - Meeting Agenda
294	Document	19960219 Unocal Interoffice Email - Selection of Attorney
295	Document	19960220 Unocal - Ross Rueke - Attorney Info
296	Document	19960221 CH2M HILL - Attorneys - Rejection Letters
297	Document	19960222 CH2M HILL - Unocal - Authorization
298	Document	19960222 CH2M HILL - Unocal - Meeting Summary
299	Document	19960223 CH2M HILL - Schwabe - Group Attorney
300	Document	19960304 GeoEngineers - Unocal - Update
301	Document	19960329 Unocal Interoffice Email - Tax Savings
302	Document	19960403 Unocal Interoffice Email - Transmittal Memo
303	Document	19960403 Unocal Interoffice Memo - Published References to Degraded Gasoline
304	Document	19960410 CH2M HILL - Unocal - Conference Call Schedule
305	Document	19960423 GeoEngineers - CH2M HILL - Storm Sewer Invetigation
306	Document	19960503 Unocal Interoffice Memo - Data Package
307	Document	19960515 CH2M HILL - Unocal - Conference Call Schedule
308	Document	19960515 Unocal Interoffice Email - Data
309	Document	19960517 CH2M HILL - Unocal - Conference Call Schedule
310	Document	19960517 Unocal Interoffice Email - Communication Problems
311	Document	19960517 Unocal Interoffice Memo - Transmittal Data Package
312	Document	19960521 Unocal - Walt Eiseman Information
313	Document	19960521 Unocal Interoffice Email - Conflict of Interest
314	Document	19960529 Unocal - Chevron - Requested Information
315	Document	19960530 Schwabe - Unocal - Transmittal Letter
316	Document	19960703 Schwabe - Williams - Conflict of Interest
317	Document	19960709 Atty - Unocal - Chevron Ignoring Unocal Demands per Cost Sharing Agreement
318	Document	19960709 Williams Fredrickson and Stark - Unocal - Review
319	Document	19960719 CH2M HILL - Unocal - Containment Boom
320	Document	19960723 Unocal - Schwabe - Conflict of Interest
321	Document	19960731 Philip Stern - Gerald Chesney - Email Re Second Legal Opinion
322	Document	19960731 Unocal Interoffice Memo - Project Summary
323	Document	19960801 Thomas Skok - Philip Stern - Email Re Contact Info
324	Document	19960805 CH2M HILL - Unocal - Scheduled Surveying
325	Document	19960805 Gary Gunderson - Joe Comstock - Email Re Meeting
326	Document	19960808 CH2M HILL - Unocal - Conference Call Schedule
327	Document	19960808 Gerlad Chesney - Joe Comstock - Email Re Meeting
328	Document	19960815 Chevron - Unocal - Requested Modifications
329	Document	19960820 Unocal - Schwabe - Copy Billings
330	Document	19960821 Unocal Interoffice Email - Billing Procedures
331	Document	19960827 Schwabe et al - Unocal - Transmittal Billing
332	Document	19960828 Unocal - Meeting Notes
333	Document	19960917 Chevron - Unocal - Agree with Proposals
334	Document	19961002 Peter Schnieders - Unocal - New Superintendent
335	Document	19961003 Chevron - Unocal - Cost Breakdown
336	Document	19961028 CH2M HILL - Unocal - Telephone Conversation Summary
337	Document	19961028 Chevron - Unocal - Conference Call
338	Document	19961029 Chevron - Unocal - Turnover
339	Document	19961107 Chevron - CH2M HILL - Discontinue Service
340	Document	19961108 GATX - Shell - Proj Mgr Change
341	Document	19961108 GeoEngineers - Unocal - Project Concerns
342	Document	19961116 CH2M HILL - Unocal - Questions
343	Document	19961118 Chevron - Unocal - Follow Up
344	Document	19961125 GeoEngineers - Unocal - Rental Equipment
345	Document	19961125 Schwabe et al - Unocal - EPA Approach

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346	Document	19961206 Unocal - Handwritten Notes
347	Document	19961206 Williams et al - Unocal - Hazardous Waste Liability
348	Document	19961210 Schwabe et al - Unocal - Attorney Letter
349	Document	19961217 Unocal - Meeting Notes
350	Document	19970116 Conoco-Conoco-Meeting Minutes
351	Document	19970116 Conoco-Conoco-Meeting Notes
352	Document	19970121 Kevin Freeman - Jill Kiernan - Metals Sampling Procedure
353	Document	19970227 76 Products Interoffice Memo - Update of Remediation Plan
354	Document	19970307 PEG-Conoco-Email re 1996 Quarterly Rpt
355	Document	19970422 Conoco-Conoco-PRP Meeting Notes
356	Document	19970422 Conoco-Conoco-RP Meeting Agenda
357	Document	19970612 Conoco-Conoco-Willbridge Meeting Notes
358	Document	19970624 Conoco-Conoco-RP Meeting Wkplan Approach
359	Document	19970701 Unocal - Unocal - Notice of Retained Records
360	Document	19970718 MSXSOPC-MSXSOPC-Comments on Wkplan
361	Document	19970722 Conoco-Conoco-RP Meeting Notes
362	Document	19970727 Conoco-Chevron-Resp to Wkplan approach
363	Document	19970806 PEGNET-Conoco-Summary of DEQ Meeting
364	Document	19970901 Unocal - Unocal - Notice of Retained Records
365	Document	19970912 PEGNET-Conoco-Re Draft Workplan
366	Document	19970922 ENE-Conoco-Review of Willamette SAP
367	Document	19970929 Conoco-Conoco-Willbridge Meeting Notes
368	Document	19971008 SantaFe-Tosco-Request for Info
369	Document	19971030 Tosco - Interim Action Meeting Notes
370	Document	19980305 COP - Handwritten Meeting Notes
371	Document	19980407 COP - Handwritten Meeting Notes
372	Document	19980514 Shell-N Creek-Request for Analyticals > 5yrs
373	Document	19981009 COP - Handwritten Notes
374	Document	19981125 COP - Handwritten Meeting Notes
375	Document	19990209 Pete Geiger - Kelly Kline - Willbridge Meeting Summary
376	Document	19990211 COP - Handwritten Notes
377	Document	19990729 COP - Handwritten Notes
378	Document	20000224 Tosco - Willbridge Group - Remediation Issues
379	Document	20000609 KHM - Tosco - Draft RI Report Evaluation
380	Document	20000913 KHM - Chevron - Repair of the 60 Inch Storm Sewer
381	Document	20010119 Tosco - KHM Env - Pile Installation
382	Document	20011102 Tosco - Striplin Env - Transmittal Historical Reports
383	Document	20011107 Conoco-Owner-Notice of Right to Lien
384	Document	2003028 Misc - Handwritten Willbridge Meeting Notes
385	Document	20031003 COP - Union Oil - Acceptance of Indemnity Tender
386	Document	20040405 Scott Miller - Integral Consulting - Transmittal Documents
387	Document	20040820 Delta - Integral Consulting - Transmittal Site Summary
388	Document	20041012 David Ashton - Kevin - Port Review of Application
389	Document	20041022 Delta Env - COP - Meeting with DEQ
390	Document	20041108 SAIC - US Army Core of Engineers - Response to Comments
391	Document	20070122 Chevron - COP - Request for Reimbursement
392	Document	20090312 - Corresp - Stantec - Portland Terminal Transition to ARCADIS/Chevron Memo
393	Document	19941103 GeoEngineers - Unocal - Revised Budget
394	Document	19960422 Unocal - Chevron - Cost Sharing and Recovery
395	Document	19971104 Tosco - Chevron - Cost Comparison
396	Document	19960927 City of Portland - Drilling Permit
397	Document	20021028 City of Portland - Wastewater Discharge Permit
398	Document	20041208-City of Portland-Site Development Permit
399	Document	20071001 City of Portland - Wastewater Discharge Permit
400	Document	20071002-City of Portland-Wastewater Discharge Permit No. 500015
401	Document	20071008 City of Portland - Official Signatory Authorization
402	Document	20080211-City of Hillsboro-Waste Permit No. 101016OR
403	Document	20080319-Non-Hazardous Waste Profile
404	Document	20080319-Spent Carbon Non-Hazardous Waste Profile
405	Document	20080514-City of Hillsboro-Non-Hazardous Waste Disposal Permit #101217OR
406	Document	Other-Outfall22 sheen event photos
407	Document	00000000 Assess - COP - Baseline Env Assessment Areas of Concern
408	Document	00000000 Assess - Misc - Various Spill Investigation Documents
409	Document	00000000 Compliance - Misc - CET Training Certificates and Employee Docs
410	Document	00000000 Mntrg - Delta Env - Groundwater Elevation Summary
411	Document	00000000 Mntrg - Misc - Lab Results and Tables
412	Document	00000000 Mntrg - Summit Bristol and Pacific Env - GW Data Presentation
413	Document	1111-11-11-CONTR -COMPANY-GEN ARRANGEMENT PLAN
414	Document	19890411 Assess - S Degens - Tanker Basin History

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415	Document	19890703 Mntrg - Riedel Env - June 1989 Summary
416	Document	19890808 Mntrg - Reidel Env - July 1989 Summary
417	Document	19901009 Mntrg - Riedel Env Services - Gauging Activities
418	Document	19901231 Assess - Riedel Env - Mobile Hydrocarbon Reassessment
419	Document	19910206 Remed - Riedel Env - 1990 Final Report
420	Document	19910208 Remed - Riedel Env - 1990 Final Report
421	Document	19911130 Mntrg - Riedel Env - March thru Nov 1991 Hydrocarbon Thickness Figures
422	Document	19911219 Assess - ORDEQ - Sample Preliminary Assessment
423	Document	19920303 Remed - Riedel Env - 1991 Final Report
424	Document	19920406 Remed - Riedal Env - 1991 Final Report
425	Document	19921003 Maps - GeoEngineers - Location of Wells Sampled
426	Document	19921003 Maps - GeoEngineers - Unocal Diesel Storage Locations
427	Document	19930000 Remed - Misc - 1993 Product Recovery
428	Document	19930000 Remed - Misc - 1993 Recovery Well Operational Log
429	Document	19930309 Other - GeoEngineers - Summary of RW Reconstruction Observations
430	Document	19930609 Mntrg - Delta Env - Semi Annual 1993 GWMR
431	Document	19930615 Assess - SEACOR - Drraft Preliminary Assessment
432	Document	19930929 Assess - Unocal - Dec 1975 to Jan 1993 Spills at Shell Facility
433	Document	19930929 Assess - Unocal - July 1981 to Feb 1993 Spills at Willamette River
434	Document	19930929 Assess - Unocal - July 1988 to April 1993 Spills at Various Locations
435	Document	19930929 Assess - Unocal - Nov 1984 to Aug 1988 Spills at McCall Facility
436	Document	19930929 Assess - Unocal - Sept 1989 to April 1993 Spills at Various Locations
437	Document	19931014 Mntrg - Delta Env - Semi Annual 1993 GWMR
438	Document	19931104 Assess - SEACOR - Environmental Site Assessment
439	Document	19931229 Assess - Unocal - Feb 1986 to June 1993 Spills at Atochem Facility
440	Document	19931229 Assess - Unocal - Jan 1971 to July 1993 Spills at Shell Facility
441	Document	19931229 Assess - Unocal - Jan 1975 to Sept 1993 Spills at Unocal Facility
442	Document	19931229 Assess - Unocal - Jan 1989 to Feb 1993 Spills at Willamette River
443	Document	19931229 Assess - Unocal - March 1982 to April 1993 Spills at Various Locations
444	Document	19931229 Assess - Unocal - May 1963 to Aug 1993 Spills at Chevron Facility
445	Document	19931229 Assess - Unocal - Oct 1982 to Sept 1993 Spills at McCall Facility
446	Document	19931229 Assess - Unocal - Sept 1963 to Aug 1992 Spills at Doane Ave Storm Sewer
447	Document	19940121 Mntrg - Analytical Technologies - Water Samples Results
448	Document	19940208 Assess - GeoEngineers - Contaminated Soil Report
449	Document	19940405 Assess - EMCON - McCall and Chevron Preliminary Assessments
450	Document	19940405 Assess - EMCON - Preliminary Assessment
451	Document	19940915 Remed - CH2M Hill - June thru August 1994 Progress Report
452	Document	19940929 Assess - SEACOR - Environmental Site Assessment
453	Document	19941027 Mntrg - GeoEngineers - Chemical Analysis Summary
454	Document	19941029 Assess - CH2M HILL - MW Elevation Survey
455	Document	19941118 Remed - CH2M HILL - Draft Interim Action Plan
456	Document	19941221 Mntrg - GeoEngineers - GW and Free Product Analysis Tables
457	Document	19950119 Remed - CH2M HILL - Sept - Nov 1994 Progress Report
458	Document	19950201 Remed - CH2M HILL - Interim Action Performance Review
459	Document	19950206 Assess - GeoEngineers - Summary of Free Product Conditions
460	Document	19950210 Remed - GeoEngineers - Recovery and Treatment System O and M
461	Document	19950221 Maps - GeoEngineers - Site Plan
462	Document	19950223 Mntrg - Analytical Tech - Water Sample Analysis
463	Document	19950301 Remed - GeoEngineers - Recovery and Treatment System O and M
464	Document	19950316 Mntrg - GeoEngineers - BETX and PAH Water Chemical Analysis
465	Document	19950331 Remed - GeoEngineers - Spent Carbon Profile and Lab Report
466	Document	19950400 Remed - CH2M HILL - Interim Action Field Coordination Plan
467	Document	19950621 Remed - CH2M HILL - March - May 1995 Progress Report
468	Document	19950626 Remed - CH2M HILL - June 1995 Report - Table Correction
469	Document	19950821 Remed - CH2M HILL - June and July 1995 Monthly PRP Report
470	Document	19950918 Remed - CH2M HILL - June - Aug 1995 Draft Progress Report
471	Document	19951003 Remed - CH2M HILL - June - Aug 1995 Progress Report
472	Document	19951009 Assess - GeoEngineers - Product Sampling and Fingerprinting
473	Document	19951018 Remed - CH2M HILL - Sept 1995 Interim Action Status Report
474	Document	19951020 Remed - GeoEngineers - Status of Interim Action
475	Document	19951024 Assess - Unocal - Summary of Data for Free Products
476	Document	19951222 Remed - CH2M HILL - Sept - Nov 1995 RI FS Progress Report
477	Document	19960103 Mntrg - CH2M HILL - January 1996 Sampling Event
478	Document	19960108 Mntrg - CH2M HILL - Various GWM Tables
479	Document	19960119 Remed - CH2M HILL - Dec 1995 Interim Action Monthly Report
480	Document	19960411 Mntrg - CH2M HILL - Flood Water Monitoring and Benzene Conc
481	Document	19960517 Assess - Unocal - Data Package
482	Document	19961003 Remed - CH2M HILL - June - August 1996 RI FS Interim Action Report
483	Document	19961030 Assess - Unocal - Results of Geochemical Fingerprinting

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484	Document	19961206 Mntrg - CH2M HILL - Updated Benzene Concentrations in Wells
485	Document	19970102 Assess - CH2M HILL - Storm Sewer Investigation Summary Report
486	Document	19970402 Remed - Pacific Env - 4Q 1996 RI FS Interim Action Report
487	Document	19970411 Assess - Meredith Boli & Assoc - Evaluation of Aerial Photos
488	Document	19970618 Remed - Pacific Env - 1Q 1997 RI FS Interim Action Report
489	Document	19970625 Assess - Pacific Env - PRP Background Search
490	Document	19970816 Assess - Remediation Technologies - Baseline Ranking & Phase II SOW
491	Document	19971016 Remed - Pacific Env - 2Q 1997 RI FS Interim Action Report
492	Document	19971210 Remed - Pacific Env - 3Q 1997 RI FS Interim Action Report
493	Document	19980102 Other-ENSR-Tank Install Dwgs and Calcs
494	Document	19980115 Other - ORDEQ - Guidance for Consideration of Land Use
495	Document	19980304 Assess - Caswell Hertel - -MW Survey Info
496	Document	19980316 Remed - Pacific Env - Barrier Wall Construction Report
497	Document	19980508 Assess - Pacific Env - Barrier Wall Sampling and GW Elevation Results
498	Document	19980520 Remed - Pacific Env - Barrier Wall Construction Report
499	Document	19980702 Remed - Pacific Env - 1Q 1998 RI FS Interim Action Report
500	Document	19980818 Remed - Pacific Env - 2Q 1998 RI FS Interim Action Report
501	Document	19981113 Remed - Pacific Env - 3Q 1998 RI FS Interim Action Report
502	Document	19990217 Assess - ThermoRetec - Phase II Environmental Assessment Report
503	Document	19990222 Other-TPS-Soil Recycling Cert
504	Document	19991022 Remed - IT Group - 2Q 1999 RI FS Interim Action Report
505	Document	19991209 Other-TPS-Customer Job Report
506	Document	19991209 Other-TPS-Waste Manifest
507	Document	20000310 Remed - IT Group - 4Q 1999 RI FS Interim Action Report
508	Document	20000731 Other - KHM - Site Health and Safety Plan
509	Document	20000825 Remed - IT Group - 2Q 2000 RI FS Interim Action Report
510	Document	20001108 Assess - GeoEngineers - Soil Sampling Report
511	Document	20001229 Other-TPS-Soil Recycling Cert
512	Document	20010300 Mntrg - KHM Env - 3Q 2000 GWMR
513	Document	20010300 Mntrg - KHM Env - 4Q 2000 GWMR
514	Document	20010515 Mntrg - KHM Env - GW Sampling Program Evaluation
515	Document	20010608 Remed - KHM - Interim Remedial Action Engineering Design Report
516	Document	20010621 Mntrg - KHM Env - 1Q 2001 GWMR
517	Document	20010925 Mntrg - KHM Env - 2Q 2001 GWMR
518	Document	20010928 Other-TPS-Soil Recycling Cert
519	Document	20011124 Remed - Tosco - Supplemental Remedial Activities
520	Document	20020107 Compliance - KHM Env - Dec 2002 Discharge Monitoring Report
521	Document	20020128 Other-Manley-Waste Manifest
522	Document	20020204 Mntrg - KHM Env - 3Q 2001 GWMR
523	Document	20020523 Remed - KHM Env - Revised Storm Sewer Interim Remedial Actions Rpt
524	Document	20020603 Assess - TOSCO - Oil Water Separator Emissions
525	Document	20020926 Mntrg - KHM Env - Final 2002 Semi Annual GWMR
526	Document	20021014 Compliance - KHM Env - Sept 2002 Discharge Monitoring Report
527	Document	20021105 Compliance - KHM Env - Oct 2002 Discharge Monitoring Report
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529	Document	20030210 Compliance - KHM Env - Jan 2003 Discharge Monitoring Report
530	Document	20030211 Remed - Delta Env - Progress Report
531	Document	20030225 Compliance - KHM Env - Feb 2003 Discharge Monitoring Report
532	Document	20030411 Compliance - KHM Env - March 2003 Discharge Monitoring Report
533	Document	20030422 Remed - KHM Env - Spill Prevention Plan and GW Extraction Treatment System
534	Document	20030424 Assess - KHM Env - Preliminary Source Control Evaluation
535	Document	20030513 Compliance - KHM Env - April 2003 Discharge Monitoring Report
536	Document	20030707 Mntrg - Delta Env - Semi Annual GWMR
537	Document	20030709 Compliance - Delta Env - June 2003 Discharge Monitoring Report
538	Document	20030903 Compliance - Delta Env - August 2003 Discharge Monitoring Report
539	Document	20031029 Compliance - Delta Env - Oct 2003 Discharge Monitoring Report
540	Document	20031125 Compliance - Delta Env - Nov 2003 Discharge Monitoring Report
541	Document	20040109 Compliance - Delta Env - Dec 2003 Discharge Monitoring Report
542	Document	20040126 Assess-GeoEng-Field Report
543	Document	20040204 Compliance - Delta Env - Dec 2003 Discharge Monitoring Report
544	Document	20040209 Mntrg - Delta Env - Semi Annual 2003 GWMR
545	Document	20040312 Compliance - Delta Env - Feb 2004 Discharge Monitoring Report
546	Document	20040412 Remed - Delta - Discharge Mont Report
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548	Document	20040609 Remed - Delta - Discharge Mont Report
549	Document	20040714 Compliance - Delta Env - June 2004 Discharge Monitoring Report
550	Document	20040730 Compliance - Delta Env - July 2004 Discharge Monitoring Report
551	Document	20040813 Mntrg - Delta Env - Semi Annual GWMR
552	Document	20040913 Remed - Delta - Discharge Mont Report

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553	Document	20041025 Assess - Delta Env - Subsurface Investigation Report
554	Document	20041109 Compliance - Delta Env - Oct 2004 Discharge Monitoring Report
555	Document	20041203 Compliance - Delta Env - Nov 2004 Discharge Monitoring Report
556	Document	20041207 Assess - Delta Env - Revised Source Control Evaluation
557	Document	20050110 Compliance - Delta Env - Dec 2004 Discharge Monitoring Report
558	Document	20050208 Remed - Delta Env - Well Abandonment and Modification and RW Install Report
559	Document	20050214 Remed - Delta - Discharge Mont Report
560	Document	20050310 Remed - Delta - Discharge Mont Report
561	Document	20050315 Mntrg - Delta Env - Semi Annual 2004 GWMR
562	Document	20050405 Remed - Delta - Discharge Mont Report
563	Document	20050510 Mntrg - Delta Env - Semi Annual GWMR
564	Document	20050510 Remed - Delta - Discharge Monitoring Report
565	Document	20051129 Mntrg - Delta Env - Semi Annual Groundwater Monitoring Report
566	Document	20051208 Compliance - Delta Env - November 2005 Discharge Monitoring Report
567	Document	20070424-Other- DELTA -Erodable Soil Sampling Plan
568	Document	20071008-Mntrg-DELTA-Sept 2007 DMR
569	Document	20071101-Other-SECOR-Bulk Storage Tanks
570	Document	20071105-Mntrg-Delta-Oct 2007 Discharge Monitoring Report
571	Document	20071115-Mntrg-Delta-Semi-Annual Groundwater Monitoring Report (2Q07 & 3Q07)
572	Document	20071207-Remed-Delta-November 2007 Discharge Monitoring Report
573	Document	20071213-Other- SECOR -U29A Boring Logs
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575	Document	20080108 Mntrg- SECOR - December 2007 Disharge Monitoring Report
576	Document	20080131-Other-ENTRIX-Technical Report 08-2018
577	Document	20080211-Mntrg- SECOR -January 2008 Discharge Monitoring Report
578	Document	20080218-Other-ENTRIX-Technical Report 08-2021
579	Document	20080222-Other-ENTRIX-Technical Report 08-2024
580	Document	20080229-Mntrg- SECOR -February 2008 Discharge Monitoring Report
581	Document	20080315-Other-ENTRIX-Technical Report 08-2038
582	Document	20080328-Other-DELTA-Monitoring Well Install Rpt
583	Document	20080404-Mntrg- SECOR -March 2008 Discharge Monitoring Report
584	Document	20080414-Other-ENTRIX-Technical Report 08-2041
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586	Document	20080503-Other- ENTRIX -Technical Report 08-2036
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588	Document	20080505-Mntrg- SECOR -April 2008 Discharge Monitoring Report
589	Document	20080530-Mntrg- SECOR -May 2008 Discharge Monitoring Report
590	Document	20080702-Mntrg- Stantec -June 2008 Discharge Monitoring Report
591	Document	20080729-Other- Stantec -Waste Disposal Report
592	Document	20080812-Mntrg- Stantec -July 2008 Discharge Monitoring Report
593	Document	20080814-Other- Stantec -CIPP Lining Work Plan
594	Document	20080820-Mntrg- Stantec -August 2008 Discharge Monitoring Report
595	Document	20080822-Other- Stantec -Spill Response & Outfall Mgt Plan
596	Document	20080825-Other- Stantec -Disposal Report - MH-12 Lining Activities
597	Document	20080910-Other- Stantec -Outfall #22 Sheen Response Report - Appendix A
598	Document	20080910-Other- Stantec -Outfall #22 Sheen Response Report - Appendix B
599	Document	20080910-Other- Stantec -Outfall #22 Sheen Response Report - Appendix C - Part I
600	Document	20080910-Other- Stantec -Outfall #22 Sheen Response Report - Appendix C - Part II
601	Document	20080910-Other- Stantec -Outfall #22 Sheen Response Report & Figures & Tables
602	Document	20080917 Other - Stantec - July 2008 GWET System Operations Rpt - Part I
603	Document	20080917 Other - Stantec - July 2008 GWET System Operations Rpt - Part II
604	Document	20081002 Mntrg - Stantec - September 2008 Discharge Monitoring Report
605	Document	20081028 Mntrg - Stantec - October 2008 Discharge Monitoring Report
606	Document	20081202 Mntrg - Stantec - November 2008 Discharge Monitoring Report
607	Document	20081215-Mntrg-Delta-SA GWM REPORT - PART 7
608	Document	20081215-Mntrg-Delta-Semi-Annual GWM Report (April 2008 through Sept 2008)
609	Document	20090113 - Monitoring - Stantec - 3Q08 GWET System Report
610	Document	20090121 Mntrg Stantec Jan 2009 DMR Rpt
611	Document	2009-02-16 - Corresp - Stantec - Contaminated Media Management Plan
612	Document	20090220 - Monitoring - STANTEC - RMR# 922 - Feb 2009 DMR

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From: Lyons, Thomas:
Sent: Monday, April 27, 2009 10:32 PM
To: Ralston, Ed C.:
CC: Uyeda, Valerie J; Collins, Bill H
Subject: Revised Spill Response Outfall Management Plan.pdf - Adobe Reader
Attachments: Revised Spill Response Outfall Management Plan.pdf

Ed

Arcadis only wants to come out three times per week...

Tom Lyons
Portland Terminal

ARCADIS
Infrastructure, environment, buildings

ARCADIS
111 Southwest Columbia Street
Suite 725
Portland
Oregon 97201
Tel 503.220.8201
Fax 503.220.8209
www.arcadis-us.com

ENVIRONMENT

Mr. Michael Romero
Oregon Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue, Ste. 400
Portland, Oregon 97201

Subject:
Revised Spill Response / Outfall Management Plan
City of Portland Outfall #22 at ConocoPhillips Portland Terminal Dock Facility
5528 NW Doane Ave
Portland, Oregon

Date:
April 23, 2009

Contact:
Grant V. Sprick

Phone:
503.220.8201 ext.1104

Email:
Grant.Sprick
@arcadis-us.com

Our ref:
B0046601.0000.00710
B0045452.0005.00710

Dear Mr. Romero:

On behalf of Chevron Environmental Management Company (CEMC), ARCADIS has prepared this *Revised Spill Response/Outfall Management Plan* (revised plan) to document ARCADIS' procedures for monitoring City of Portland Outfall #22 for evidence of petroleum product discharges to the Willamette River; and responding to an oily sheen discharge. Outfall #22 is located on the ConocoPhillips Willbridge Terminal, southeast of the dock at river mile 7.5. This outfall is the terminus of a 60-inch-diameter concrete storm sewer discharging to the Willamette River and is enclosed by several sets of floating containment (outer) or absorbent (inner) booms that are maintained by CEMC. Petroleum product discharge (such as oily sheen) to the Willamette River from Outfall #22 may be a potentially reportable incident to the National Response Center (NRC), City of Portland Bureau of Environmental Services (BES) and Oregon Spill Response (OSR).

This revised plan is prepared as an amendment to the original plan prepared by Stantec (Stantec 2008). While the scope of Outfall #22 management essentially remains the same, the purpose of this amendment is to identify sheen response actions and contact information.

Previous Remedial Actions

Outfall #22 is the discharge point of the drainage system serving a large industrial footprint, including the Chevron Willbridge Distribution Center, the ConocoPhillips Willbridge Terminal and the ConocoPhillips Property riverward of NW Front St. The ConocoPhillips Willbridge Terminal is served by a stormwater drainage system that joins the City of Portland 48-inch sewer system at three locations located along NW

Doane Ave. The Chevron Willbridge Distribution Center is served by a stormwater drainage system that joins the City of Portland 48-inch sewer system at three locations located along NW Doane Ave.

During winter 2001, ConocoPhillips incorporated Outfall #22 into a sheet pile cut-off wall that was installed as an Interim Remedial Action Measure (IRAM) on behalf of the Willbridge Terminals Group (which is a cooperative effort among ConocoPhillips, Chevron and Kinder Morgan Liquids Terminal, LLC [Kinder Morgan]). The cut-off wall was installed as part of the IRAM to mitigate migration of petroleum hydrocarbon-impacted groundwater and separate-phase hydrocarbons (SPHs) to the river. A groundwater treatment system (GWTS) receives hydrocarbon-impacted groundwater and SPHs that collect behind the cut-off wall. Treated water from the GWTS is discharged under permit to the City of Portland sanitary sewer system.

Scope of Work

The approach described below will provide a framework to inspect the outfall area:

- observe, photograph and log any oily sheen appearances
- collect investigative samples of oily sheens observed to be flowing out of Outfall #22
- maintain the integrity of the outfall boom system
- provide that no oily sheen discharges from the outfall into the Willamette River channel
- initiate cleanup of any oily sheens that may be present in the boom containment area
- inspect upstream manholes served by the ConocoPhillips and Chevron properties for sheen
- periodically inspect absorbent booms in select manholes on the ConocoPhillips and Chevron facilities, and replace as needed

This scope of work is also intended as a guide for coordination of this investigation with ConocoPhillips Terminal personnel as well as representatives for the Chevron Willbridge Distribution Center.

Sheen Monitoring

ARCADIS field technicians typically visit the GWTS three times each week to inspect the system and perform operation and maintenance activities. On each day that an ARCADIS field technician is on site, the technician will visually examine Outfall #22 (if exposed by low river stages) and the floating boom containment area surrounding the outfall for oily sheens. Negative reports will be noted on field logs. Positive reports will require further actions, described in the Spill Response section of this revised plan.

Boom Maintenance

To provide for containment of an oily sheen discharge at Outfall #22 in the event that ARCADIS is not on site, ARCADIS will maintain a pair of floating containment (outer) and absorbent (inner) booms enclosing the outfall to contain any possible sheen releases. Additionally, ARCADIS will maintain several absorbent booms at the mouth of Outfall #22.

ARCADIS field technicians will visually inspect these floating booms for oily sheen or general weathering and will replace or readjust them as needed. Providing that low river stages allow for safe maintenance activities, ARCADIS will also replace or readjust the absorbent booms at the mouth of the outfall, as needed.

Spill Response

Visual observation of an oily sheen discharging from Outfall #22 will trigger a set sequence of actions, starting with ARCADIS' field technician contacting the ARCADIS Project Manager and then notifying the ConocoPhillips Willbridge Terminal Maintenance Supervisor that an oily sheen has been observed discharging from the outfall. ARCADIS' field technician will maintain a written and photographic record of the discharge observation. ARCADIS' Project Manager will notify the CEMC Project Manager and jointly they will evaluate the need to initiate a formal notification (see the Formal Notification Procedures section in this revised plan for further details) to concerned stakeholders. The ARCADIS and CEMC Project Manager will also decide on the need to collect a sample of the oily sheen.

If instructed by ARCADIS' Project Manager, based on the discussion with the CEMC Project Manager, ARCADIS' field technician will collect a sample of the oily sheen discharge using a net sampler that is specially designed to retrieve floating skim oil samples. Whenever oily sheen net samples are collected, ARCADIS will submit the samples for analysis, as directed by CEMC.

The presence of an oily sheen within the floating boom area that has not escaped beyond the absorbent (interior) floating boom generally will not warrant a formal notification. The ARCADIS field technician will attempt to clean up the oily sheen discharge by placing absorbent pads. However, an oily sheen extending beyond the lines of absorbent booms (interior) will require formal notification and may require mobilization of an in water response contractor to clean up the discharge. Attachment 1 presents a spill response flow chart with current contact information.

Manhole Inspection

To evaluate the source of the sheen identified at Outfall #22, ARCADIS' field technician will inspect upgradient manholes along the stormwater drainage system that feed into this outfall on both the ConocoPhillips and Chevron properties.

Formal Notification Procedures

ARCADIS' Project Manager, with the approval of CEMC's Project Manager, will notify the following regulatory agencies of a reportable spill discharge incident at Outfall #22:

1. NRC, at 800.424.8802; document telephone call and obtain an NRC Incident Report Number

2. OSR, at 800.452.0311; document telephone call and record OSR Incident Number

3. BES Duty Officer, at 503.823.7180; document telephone call

4. Oregon DEQ, call Mike Romero at 503.229.5563

Data Recording and Management

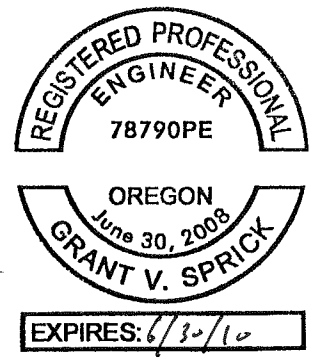
ARCADIS' Project Manager will prepare a summary e-mail of the sheen observation and spill response actions for submittal to applicable stakeholders. A copy will be filed electronically in the project files. Documentation of the incident reporting will be noted in the Sheen Response Documentation and Contact List spreadsheet in the ARCADIS project files.

Field activities will be documented in a proper field notebook, including correlation of photographs taken. Pertinent information will include personnel present on site, times of arrival and departure, significant weather conditions, timing of field activities and observations (e.g., water color, odor, sheen). Data, including notes and observations, will be compiled in the project file.

If you have any questions or comments, please contact me by phone at 503.220.8201 extension 1104 or by email at grant.sprick@arcadis-us.com.

Sincerely,

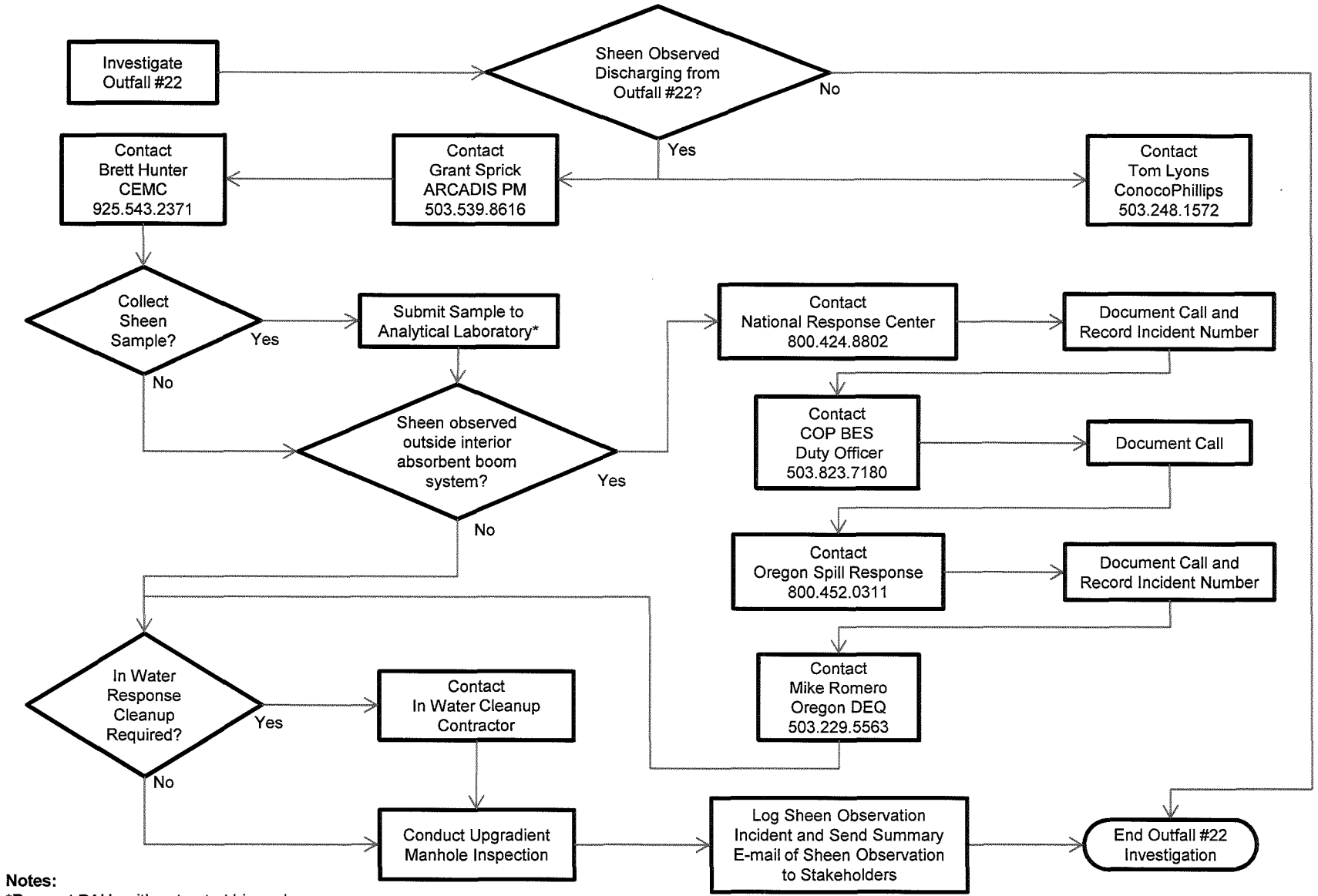
ARCADIS



Grant V. Sprick, P.E.
Senior Project Manager

Copies:
Ken Thiessen, R.G., ORDEQ
Brett Hunter, CEMC
Tom Lyons, ConocoPhillips Terminal
Jerry Henderson, Chevron Terminal

Willbridge Terminal Sheen Monitoring / Response Flow Chart



Notes:
*Request PAHs with saturated biomarkers.
BES = Bureau of Environmental Services
DEQ = Department of Environmental Quality
CEMC = Chevron Environmental Management Company
COP = City of Portland
PM = Project Manager

COP0019689

ARCADIS
Infrastructure, environment, buildings

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111 Southwest Columbia Street
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ENVIRONMENT

Mr. Michael Romero
Oregon Department of Environmental Quality
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Outfall #22 is the discharge point of the drainage system serving a large industrial footprint, including the Chevron Willbridge Distribution Center, the ConocoPhillips Willbridge Terminal and the ConocoPhillips Property riverward of NW Front St. The ConocoPhillips Willbridge Terminal is served by a stormwater drainage system that joins the City of Portland 48-inch sewer system at three locations located along NW

Doane Ave. The Chevron Willbridge Distribution Center is served by a stormwater drainage system that joins the City of Portland 48-inch sewer system at three locations located along NW Doane Ave.

During winter 2001, ConocoPhillips incorporated Outfall #22 into a sheet pile cut-off wall that was installed as an Interim Remedial Action Measure (IRAM) on behalf of the Willbridge Terminals Group (which is a cooperative effort among ConocoPhillips, Chevron and Kinder Morgan Liquids Terminal, LLC [Kinder Morgan]). The cut-off wall was installed as part of the IRAM to mitigate migration of petroleum hydrocarbon-impacted groundwater and separate-phase hydrocarbons (SPHs) to the river. A groundwater treatment system (GWTS) receives hydrocarbon-impacted groundwater and SPHs that collect behind the cut-off wall. Treated water from the GWTS is discharged under permit to the City of Portland sanitary sewer system.

Scope of Work

The approach described below will provide a framework to inspect the outfall area:

- observe, photograph and log any oily sheen appearances
- collect investigative samples of oily sheens observed to be flowing out of Outfall #22
- maintain the integrity of the outfall boom system
- provide that no oily sheen discharges from the outfall into the Willamette River channel
- initiate cleanup of any oily sheens that may be present in the boom containment area
- inspect upstream manholes served by the ConocoPhillips and Chevron properties for sheen
- periodically inspect absorbent booms in select manholes on the ConocoPhillips and Chevron facilities, and replace as needed

This scope of work is also intended as a guide for coordination of this investigation with ConocoPhillips Terminal personnel as well as representatives for the Chevron Willbridge Distribution Center.

Sheen Monitoring

ARCADIS field technicians typically visit the GWTS three times each week to inspect the system and perform operation and maintenance activities. On each day that an ARCADIS field technician is on site, the technician will visually examine Outfall #22 (if exposed by low river stages) and the floating boom containment area surrounding the outfall for oily sheens. Negative reports will be noted on field logs. Positive reports will require further actions, described in the Spill Response section of this revised plan.

Boom Maintenance

To provide for containment of an oily sheen discharge at Outfall #22 in the event that ARCADIS is not on site, ARCADIS will maintain a pair of floating containment (outer) and absorbent (inner) booms enclosing the outfall to contain any possible sheen releases. Additionally, ARCADIS will maintain several absorbent booms at the mouth of Outfall #22.

ARCADIS field technicians will visually inspect these floating booms for oily sheen or general weathering and will replace or readjust them as needed. Providing that low river stages allow for safe maintenance activities, ARCADIS will also replace or readjust the absorbent booms at the mouth of the outfall, as needed.

Spill Response

Visual observation of an oily sheen discharging from Outfall #22 will trigger a set sequence of actions, starting with ARCADIS' field technician contacting the ARCADIS Project Manager and then notifying the ConocoPhillips Willbridge Terminal Maintenance Supervisor that an oily sheen has been observed discharging from the outfall. ARCADIS' field technician will maintain a written and photographic record of the discharge observation. ARCADIS' Project Manager will notify the CEMC Project Manager and jointly they will evaluate the need to initiate a formal notification (see the Formal Notification Procedures section in this revised plan for further details) to concerned stakeholders. The ARCADIS and CEMC Project Manager will also decide on the need to collect a sample of the oily sheen.

If instructed by ARCADIS' Project Manager, based on the discussion with the CEMC Project Manager, ARCADIS' field technician will collect a sample of the oily sheen discharge using a net sampler that is specially designed to retrieve floating skim oil samples. Whenever oily sheen net samples are collected, ARCADIS will submit the samples for analysis, as directed by CEMC.

The presence of an oily sheen within the floating boom area that has not escaped beyond the absorbent (interior) floating boom generally will not warrant a formal notification. The ARCADIS field technician will attempt to clean up the oily sheen discharge by placing absorbent pads. However, an oily sheen extending beyond the lines of absorbent booms (interior) will require formal notification and may require mobilization of an in water response contractor to clean up the discharge. Attachment 1 presents a spill response flow chart with current contact information.

Manhole Inspection

To evaluate the source of the sheen identified at Outfall #22, ARCADIS' field technician will inspect upgradient manholes along the stormwater drainage system that feed into this outfall on both the ConocoPhillips and Chevron properties.

Formal Notification Procedures

ARCADIS' Project Manager, with the approval of CEMC's Project Manager, will notify the following regulatory agencies of a reportable spill discharge incident at Outfall #22:

1. NRC, at 800.424.8802; document telephone call and obtain an NRC Incident Report Number

2. OSR, at 800.452.0311; document telephone call and record OSR Incident Number

3. BES Duty Officer, at 503.823.7180; document telephone call

4. Oregon DEQ, call Mike Romero at 503.229.5563

Data Recording and Management

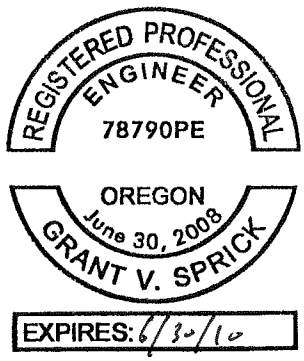
ARCADIS' Project Manager will prepare a summary e-mail of the sheen observation and spill response actions for submittal to applicable stakeholders. A copy will be filed electronically in the project files. Documentation of the incident reporting will be noted in the Sheen Response Documentation and Contact List spreadsheet in the ARCADIS project files.

Field activities will be documented in a proper field notebook, including correlation of photographs taken. Pertinent information will include personnel present on site, times of arrival and departure, significant weather conditions, timing of field activities and observations (e.g., water color, odor, sheen). Data, including notes and observations, will be compiled in the project file.

If you have any questions or comments, please contact me by phone at 503.220.8201 extension 1104 or by email at grant.sprick@arcadis-us.com.

Sincerely,

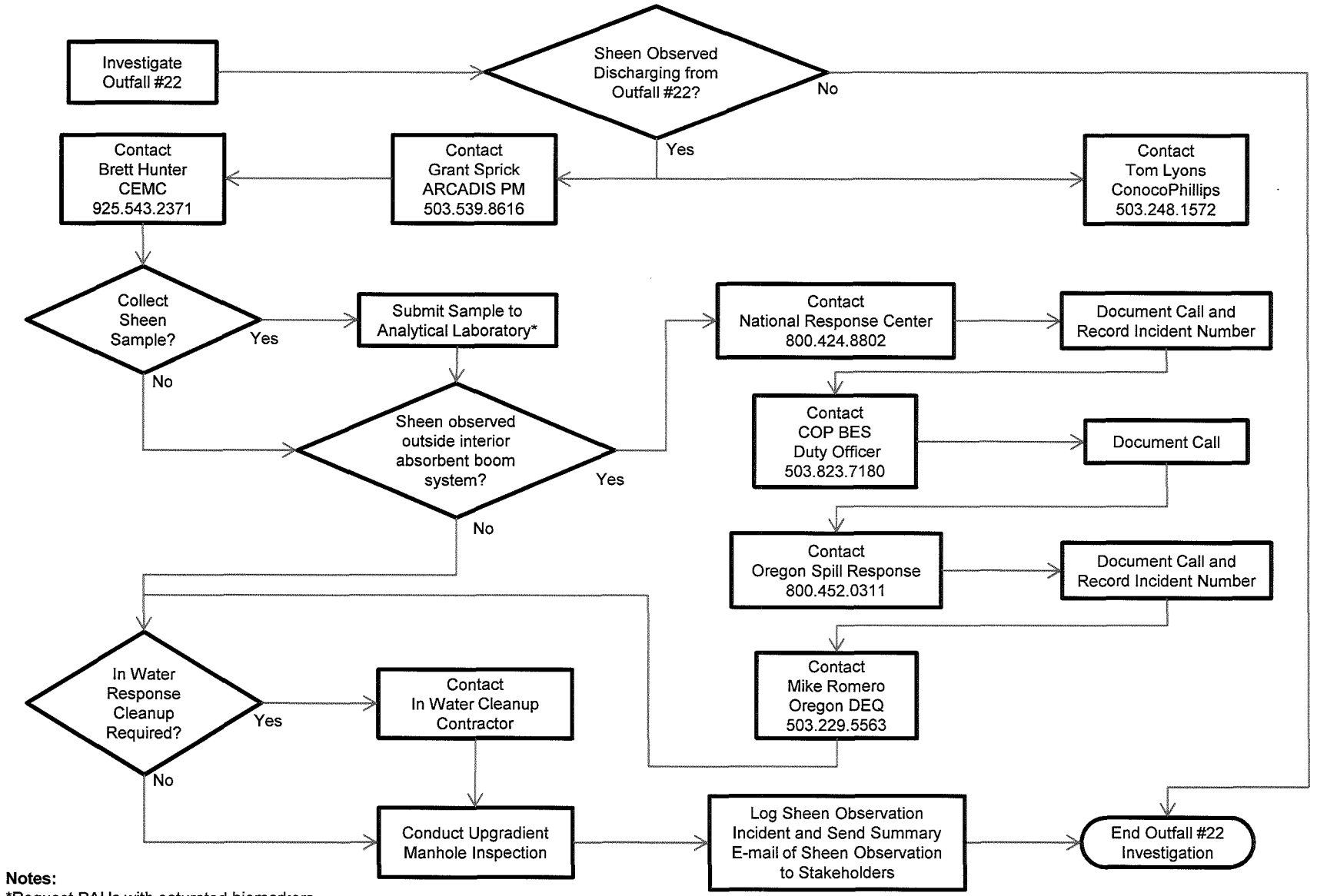
ARCADIS



Grant V. Sprick, P.E.
Senior Project Manager

Copies:
Ken Thiessen, R.G., ORDEQ
Brett Hunter, CEMC
Tom Lyons, ConocoPhillips Terminal
Jerry Henderson, Chevron Terminal

Willbridge Terminal Sheen Monitoring / Response Flow Chart



Notes:
*Request PAHs with saturated biomarkers.
BES = Bureau of Environmental Services
DEQ = Department of Environmental Quality
CEMC = Chevron Environmental Management Company
COP = City of Portland
PM = Project Manager

COP0019695

From: Edmund, Bill
Sent: Monday, December 21, 2009 10:16 PM
To: Lyons, Thomas:
CC: Matius, Bob; Smith, Myron - Environmental:
Subject: Soil Bin Pickup for Fire Water Building Project - Portland Terminal , Site RM&R 00922
Attachments: 252579_fr.pdf; Signed Profile--Myron Smith.pdf

Tom:

Please forward the following information onto to Steve in the maintenance building for the Portland Terminal records for the non hazardous waste disposal asscociated with the Fire Water Building Project. If Steve has an email that I can send directly to him, I will send these records directly to him. Attached are copies of the laboratory report for the soil and the signed non-hazardous waste profile form. Thank you

<<252579_fr.pdf>> <<Signed Profile--Myron Smith.pdf>>

William C. Edmund, P.G., R.G., R.E.A. I
Managing Principal Geologist
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 131
Fx: (503) 692-7074
Cell: (503) 510-6024
bill.edmund@stantec.com
stantec.com

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Seattle, WA 98108
(206)767-5060

December 04, 2009

Bill Edmund
COP_Stantec Washington
12034 134th CT
Redmond, WA 98052

RE: Project: 00922 - Oregon COP
Pace Project No.: 252579

Dear Bill Edmund:
Enclosed are the analytical results for sample(s) received by the laboratory on December 01, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross

jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Chris Carlton-Franco, Stantec
Janet Nash, Stantec

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Washington Certification IDs

940 South Harney Street Seattle, WA 98108
Washington Certification #: C1229
Oregon Certification #: WA200007
Alaska CS Certification #: UST-025
California Certification #: 01153CA
Alaska Drinking Water Micro Certification #: WA01230
Alaska Drinking Water VOC Certification #: WA01-09
Florida/NELAP Certification #: E87617

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SAMPLE SUMMARY

Project: 00922 - Oregon COP
Pace Project No.: 252579

Lab ID	Sample ID	Matrix	Date Collected	Date Received
252579001	**Bin-1A**	Solid	11/30/09 14:00	12/01/09 08:20
252579002	**Bin-1B**	Solid	11/30/09 14:00	12/01/09 08:20
252579003	**Bin-1C**	Solid	11/30/09 14:00	12/01/09 08:20
252579004	**Trip Blank**	Water	11/30/09 00:00	12/01/09 08:20

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SAMPLE ANALYTE COUNT

Project: 00922 - Oregon COP
Pace Project No.: 252579

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
252579001	**Bin-1A**	ASTM D2974-87	DJK	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	5	PASI-S
		EPA 8260	LPM	8	PASI-S
		NWTPH-Dx	KRK	4	PASI-S
		NWTPH-Gx	ATH	3	PASI-S
252579002	**Bin-1B**	ASTM D2974-87	DJK	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	5	PASI-S
		EPA 8260	LPM	8	PASI-S
		NWTPH-Dx	KRK	4	PASI-S
		NWTPH-Gx	ATH	3	PASI-S
252579003	**Bin-1C**	ASTM D2974-87	DJK	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	5	PASI-S
		EPA 8260	LPM	8	PASI-S
		NWTPH-Dx	KRK	4	PASI-S
		NWTPH-Gx	ATH	3	PASI-S
252579004	**Trip Blank**	EPA 5030B/8260	LNH	8	PASI-S
		NWTPH-Gx	ATH	3	PASI-S

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ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Bin-1A **Lab ID: 252579001** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**24.1**	mg/kg	23.4	3.7	1	12/01/09 15:20	12/02/09 17:18		
Motor Oil Range SG	**270**	mg/kg	93.5	25.1	1	12/01/09 15:20	12/02/09 17:18	64742-65-0	
n-Octacosane (S) SG	97	%	50-150		1	12/01/09 15:20	12/02/09 17:18	630-02-4	
o-Terphenyl (S) SG	92	%	50-150		1	12/01/09 15:20	12/02/09 17:18	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**1.2J**	mg/kg	6.5	0.26	1	12/02/09 08:00	12/02/09 21:53		2n
a,a,a-Trifluorotoluene (S)	78	%	50-150		1	12/02/09 08:00	12/02/09 21:53	98-08-8	
4-Bromofluorobenzene (S)	73	%	50-150		1	12/02/09 08:00	12/02/09 21:53	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 12/01/09 15:36								
Lead	ND	mg/L	1.0	1.0	1	12/02/09 10:30	12/03/09 09:16	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/01/09 17:40								
Benzene	ND	ug/L	50.0	48.0	1		12/03/09 14:10	71-43-2	
1,2-Dichloroethane-d4 (S)	109	%	60-140		1		12/03/09 14:10	17060-07-0	3n
Toluene-d8 (S)	105	%	60-140		1		12/03/09 14:10	2037-26-5	
4-Bromofluorobenzene (S)	97	%	60-140		1		12/03/09 14:10	460-00-4	
Dibromofluoromethane (S)	107	%	60-140		1		12/03/09 14:10	1868-53-7	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.5	0.18	1		12/03/09 12:31	71-43-2	
Ethylbenzene	ND	ug/kg	3.5	0.45	1		12/03/09 12:31	100-41-4	
Toluene	ND	ug/kg	3.5	0.36	1		12/03/09 12:31	108-88-3	
Xylene (Total)	ND	ug/kg	7.1	0.88	1		12/03/09 12:31	1330-20-7	
Dibromofluoromethane (S)	87	%	80-136		1		12/03/09 12:31	1868-53-7	3n
Toluene-d8 (S)	108	%	80-120		1		12/03/09 12:31	2037-26-5	
4-Bromofluorobenzene (S)	99	%	72-122		1		12/03/09 12:31	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	80-143		1		12/03/09 12:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.0**	%	0.10	0.10	1		12/01/09 15:05		

Sample: Bin-1B **Lab ID: 252579002** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**13.1J**	mg/kg	23.5	3.7	1	12/01/09 15:20	12/02/09 17:56		J
Motor Oil Range SG	**102**	mg/kg	93.9	25.2	1	12/01/09 15:20	12/02/09 17:56	64742-65-0	

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ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Bin-1B **Lab ID: 252579002** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
n-Octacosane (S) SG	102	%	50-150		1	12/01/09 15:20	12/02/09 17:56	630-02-4	
o-Terphenyl (S) SG	95	%	50-150		1	12/01/09 15:20	12/02/09 17:56	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	ND	mg/kg	6.7	0.27	1	12/02/09 08:00	12/02/09 22:16		2n
a,a,a-Trifluorotoluene (S)	83	%	50-150		1	12/02/09 08:00	12/02/09 22:16	98-08-8	
4-Bromofluorobenzene (S)	75	%	50-150		1	12/02/09 08:00	12/02/09 22:16	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 12/01/09 15:36								
Lead	ND	mg/L	1.0	1.0	1	12/02/09 10:30	12/03/09 09:24	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/01/09 17:40								
Benzene	ND	ug/L	50.0	48.0	1		12/03/09 14:30	71-43-2	
1,2-Dichloroethane-d4 (S)	109	%	60-140		1		12/03/09 14:30	17060-07-0	3n
Toluene-d8 (S)	105	%	60-140		1		12/03/09 14:30	2037-26-5	
4-Bromofluorobenzene (S)	103	%	60-140		1		12/03/09 14:30	460-00-4	
Dibromofluoromethane (S)	105	%	60-140		1		12/03/09 14:30	1868-53-7	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.5	0.17	1		12/03/09 12:52	71-43-2	
Ethylbenzene	ND	ug/kg	3.5	0.44	1		12/03/09 12:52	100-41-4	
Toluene	ND	ug/kg	3.5	0.36	1		12/03/09 12:52	108-88-3	
Xylene (Total)	ND	ug/kg	7.0	0.87	1		12/03/09 12:52	1330-20-7	
Dibromofluoromethane (S)	87	%	80-136		1		12/03/09 12:52	1868-53-7	3n
Toluene-d8 (S)	106	%	80-120		1		12/03/09 12:52	2037-26-5	
4-Bromofluorobenzene (S)	97	%	72-122		1		12/03/09 12:52	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	80-143		1		12/03/09 12:52	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**15.0**	%	0.10	0.10	1		12/01/09 15:06		

Sample: Bin-1C **Lab ID: 252579003** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**6.2J**	mg/kg	22.4	3.6	1	12/01/09 15:20	12/02/09 18:15		J
Motor Oil Range SG	**51.8J**	mg/kg	89.8	24.1	1	12/01/09 15:20	12/02/09 18:15	64742-65-0	J
n-Octacosane (S) SG	102	%	50-150		1	12/01/09 15:20	12/02/09 18:15	630-02-4	
o-Terphenyl (S) SG	97	%	50-150		1	12/01/09 15:20	12/02/09 18:15	84-15-1	

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ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Bin-1C **Lab ID: 252579003** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	ND	mg/kg	6.4	0.26	1	12/02/09 08:00	12/02/09 23:02		2n
a,a,a-Trifluorotoluene (S)	67	%	50-150		1	12/02/09 08:00	12/02/09 23:02	98-08-8	
4-Bromofluorobenzene (S)	67	%	50-150		1	12/02/09 08:00	12/02/09 23:02	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 12/01/09 15:36								
Lead	ND	mg/L	1.0	1.0	1	12/02/09 10:30	12/03/09 09:27	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/01/09 17:40								
Benzene	ND	ug/L	50.0	48.0	1		12/02/09 16:51	71-43-2	
1,2-Dichloroethane-d4 (S)	109	%	60-140		1		12/02/09 16:51	17060-07-0	3n
Toluene-d8 (S)	105	%	60-140		1		12/02/09 16:51	2037-26-5	
4-Bromofluorobenzene (S)	97	%	60-140		1		12/02/09 16:51	460-00-4	
Dibromofluoromethane (S)	107	%	60-140		1		12/02/09 16:51	1868-53-7	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.2	0.16	1		12/03/09 13:12	71-43-2	
Ethylbenzene	ND	ug/kg	3.2	0.40	1		12/03/09 13:12	100-41-4	
Toluene	ND	ug/kg	3.2	0.33	1		12/03/09 13:12	108-88-3	
Xylene (Total)	ND	ug/kg	6.4	0.80	1		12/03/09 13:12	1330-20-7	
Dibromofluoromethane (S)	90	%	80-136		1		12/03/09 13:12	1868-53-7	3n
Toluene-d8 (S)	105	%	80-120		1		12/03/09 13:12	2037-26-5	
4-Bromofluorobenzene (S)	98	%	72-122		1		12/03/09 13:12	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	80-143		1		12/03/09 13:12	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.8**	%	0.10	0.10	1		12/01/09 15:08		

Sample: Trip Blank **Lab ID: 252579004** Collected: 11/30/09 00:00 Received: 12/01/09 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		12/03/09 17:18		2n
a,a,a-Trifluorotoluene (S)	109	%	50-150		1		12/03/09 17:18	98-08-8	
4-Bromofluorobenzene (S)	99	%	50-150		1		12/03/09 17:18	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	ND	ug/L	1.0	0.12	1		12/01/09 12:34	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		12/01/09 12:34	100-41-4	
Toluene	ND	ug/L	1.0	0.21	1		12/01/09 12:34	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		12/01/09 12:34	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Trip Blank **Lab ID: 252579004** Collected: 11/30/09 00:00 Received: 12/01/09 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
4-Bromofluorobenzene (S)	100	%	80-120		1		12/01/09 12:34	460-00-4	3n
Dibromofluoromethane (S)	106	%	80-122		1		12/01/09 12:34	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	80-124		1		12/01/09 12:34	17060-07-0	
Toluene-d8 (S)	105	%	80-123		1		12/01/09 12:34	2037-26-5	

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1753 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16815 Matrix: Solid
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	3.0	12/03/09 08:53	
Ethylbenzene	ug/kg	ND	3.0	12/03/09 08:53	
Toluene	ug/kg	ND	3.0	12/03/09 08:53	
Xylene (Total)	ug/kg	ND	6.0	12/03/09 08:53	
1,2-Dichloroethane-d4 (S)	%	94	80-143	12/03/09 08:53	
4-Bromofluorobenzene (S)	%	96	72-122	12/03/09 08:53	
Dibromofluoromethane (S)	%	89	80-136	12/03/09 08:53	3n
Toluene-d8 (S)	%	106	80-120	12/03/09 08:53	

LABORATORY CONTROL SAMPLE: 16816

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	20	20.2	101	68-124	
Ethylbenzene	ug/kg	20	20.0	100	63-131	
Toluene	ug/kg	20	20.6	103	61-126	
Xylene (Total)	ug/kg	60	61.9	103	68-129	
1,2-Dichloroethane-d4 (S)	%			89	80-143	
4-Bromofluorobenzene (S)	%			99	72-122	
Dibromofluoromethane (S)	%			90	80-136	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16864 16865

Parameter	Units	252579003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	ND	22.7	22.4	19.4	19.5	85	87	68-124	.8	30	
Ethylbenzene	ug/kg	ND	22.7	22.4	18.9	18.2	83	82	63-131	3	30	
Toluene	ug/kg	ND	22.7	22.4	19.7	19.6	86	87	61-126	.3	30	
Xylene (Total)	ug/kg	ND	68.2	67.1	57.8	56.9	84	84	68-129	2	30	
1,2-Dichloroethane-d4 (S)	%						96	99	80-143			
4-Bromofluorobenzene (S)	%						100	103	72-122			
Dibromofluoromethane (S)	%						89	92	80-136			
Toluene-d8 (S)	%						100	101	80-120			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1747
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 252579004

METHOD BLANK: 16634 Matrix: Water
Associated Lab Samples: 252579004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/01/09 10:58	
Ethylbenzene	ug/L	ND	1.0	12/01/09 10:58	
Toluene	ug/L	ND	1.0	12/01/09 10:58	
Xylene (Total)	ug/L	ND	3.0	12/01/09 10:58	
1,2-Dichloroethane-d4 (S)	%	106	80-124	12/01/09 10:58	
4-Bromofluorobenzene (S)	%	100	80-120	12/01/09 10:58	3n
Dibromofluoromethane (S)	%	106	80-122	12/01/09 10:58	
Toluene-d8 (S)	%	105	80-123	12/01/09 10:58	

LABORATORY CONTROL SAMPLE & LCSD: 16635 16636

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	22.1	21.4	110	107	75-124	3	30	
Ethylbenzene	ug/L	20	21.6	20.8	108	104	76-124	4	30	
Toluene	ug/L	20	21.2	20.6	106	103	75-124	3	30	
Xylene (Total)	ug/L	60	66.9	64.6	112	108	76-123	4	30	
1,2-Dichloroethane-d4 (S)	%				104	106	80-124			
4-Bromofluorobenzene (S)	%				101	101	80-120			
Dibromofluoromethane (S)	%				106	106	80-122			
Toluene-d8 (S)	%				104	104	80-123			

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: OEXT/1706 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3546 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16654 Matrix: Solid
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range SG	mg/kg	7.7J	20.0	12/02/09 16:40	1n,J
Motor Oil Range SG	mg/kg	ND	80.0	12/02/09 16:40	
n-Octacosane (S) SG	%	97	50-150	12/02/09 16:40	
o-Terphenyl (S) SG	%	85	50-150	12/02/09 16:40	

LABORATORY CONTROL SAMPLE: 16655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range SG	mg/kg	500	373	75	56-124	
Motor Oil Range SG	mg/kg	500	420	84	50-150	
n-Octacosane (S) SG	%			100	50-150	
o-Terphenyl (S) SG	%			82	50-150	

SAMPLE DUPLICATE: 16656

Parameter	Units	252579001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range SG	mg/kg	24.1	15.3J		50	J
Motor Oil Range SG	mg/kg	270	213	23	50	
n-Octacosane (S) SG	%		95	.8		
o-Terphenyl (S) SG	%		93	2		

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1755 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 252579001, 252579002

METHOD BLANK: 16750 Matrix: Water
Associated Lab Samples: 252579001, 252579002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	50.0	12/03/09 13:48	
1,2-Dichloroethane-d4 (S)	%	109	60-140	12/03/09 13:48	3n
4-Bromofluorobenzene (S)	%	98	60-140	12/03/09 13:48	
Dibromofluoromethane (S)	%	107	60-140	12/03/09 13:48	
Toluene-d8 (S)	%	104	60-140	12/03/09 13:48	

METHOD BLANK: 16821 Matrix: Water
Associated Lab Samples: 252579001, 252579002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/03/09 09:40	
1,2-Dichloroethane-d4 (S)	%	109	60-140	12/03/09 09:40	3n
4-Bromofluorobenzene (S)	%	97	60-140	12/03/09 09:40	
Dibromofluoromethane (S)	%	106	60-140	12/03/09 09:40	
Toluene-d8 (S)	%	104	60-140	12/03/09 09:40	

LABORATORY CONTROL SAMPLE & LCSD: 16822 16823

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	21.4	20.5	107	103	60-140	4	20	
1,2-Dichloroethane-d4 (S)	%				107	107	60-140			
4-Bromofluorobenzene (S)	%				101	101	60-140			
Dibromofluoromethane (S)	%				108	107	60-140			
Toluene-d8 (S)	%				104	102	60-140			

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1749 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 252579003

METHOD BLANK: 16747 Matrix: Water
Associated Lab Samples: 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/02/09 11:33	
1,2-Dichloroethane-d4 (S)	%	108	60-140	12/02/09 11:33	
4-Bromofluorobenzene (S)	%	97	60-140	12/02/09 11:33	
Dibromofluoromethane (S)	%	107	60-140	12/02/09 11:33	
Toluene-d8 (S)	%	105	60-140	12/02/09 11:33	

LABORATORY CONTROL SAMPLE & LCSD: 16748 16749

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	21.3	20.5	106	102	60-140	4	20	
1,2-Dichloroethane-d4 (S)	%				107	107	60-140			
4-Bromofluorobenzene (S)	%				100	100	60-140			
Dibromofluoromethane (S)	%				106	107	60-140			
Toluene-d8 (S)	%				104	104	60-140			

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: PMST/1136 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 252579001, 252579002, 252579003

SAMPLE DUPLICATE: 16657

Parameter	Units	252579002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.0	15.1	.9	30	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MPRP/1367 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16697 Matrix: Water
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/L	ND	1.0	12/03/09 09:10	

LABORATORY CONTROL SAMPLE: 16698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16699 16700

Parameter	Units	252579001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	5	5	4.8	4.8	96	97	75-125	.8	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: GCV/1355 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 252579004

METHOD BLANK: 16851 Matrix: Water
Associated Lab Samples: 252579004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	15.1J	50.0	12/03/09 15:44	2n
4-Bromofluorobenzene (S)	%	110	50-150	12/03/09 15:44	
a,a,a-Trifluorotoluene (S)	%	119	50-150	12/03/09 15:44	

LABORATORY CONTROL SAMPLE: 16852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	289	116	50-163	
4-Bromofluorobenzene (S)	%			89	50-150	
a,a,a-Trifluorotoluene (S)	%			102	50-150	

SAMPLE DUPLICATE: 16885

Parameter	Units	252592001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	29.2J	27.8J		30	
4-Bromofluorobenzene (S)	%	101	94	7		
a,a,a-Trifluorotoluene (S)	%	114	104	9		

SAMPLE DUPLICATE: 16886

Parameter	Units	252595004 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	13.5J	ND		30	
4-Bromofluorobenzene (S)	%	91	85	7		
a,a,a-Trifluorotoluene (S)	%	106	98	7		

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: GCV/1348 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Solid GCV
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16658 Matrix: Solid
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	0.42J	5.0	12/02/09 15:37	2n
4-Bromofluorobenzene (S)	%	111	50-150	12/02/09 15:37	
a,a,a-Trifluorotoluene (S)	%	116	50-150	12/02/09 15:37	

LABORATORY CONTROL SAMPLE: 16659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	12.5	15.6	124	54-156	
4-Bromofluorobenzene (S)	%			112	50-150	
a,a,a-Trifluorotoluene (S)	%			115	50-150	

SAMPLE DUPLICATE: 16807

Parameter	Units	252553004 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	ND	0.88J		50	
4-Bromofluorobenzene (S)	%		79	33		
a,a,a-Trifluorotoluene (S)	%		92	27		

SAMPLE DUPLICATE: 16808

Parameter	Units	252553010 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	ND	1.4J		50	
4-Bromofluorobenzene (S)	%		87	18		
a,a,a-Trifluorotoluene (S)	%		100	11		

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QUALIFIERS

Project: 00922 - Oregon COP
Pace Project No.: 252579

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

1n	Analyte was detected in blank below the reporting limit, but above the MDL.
2n	Sample was evaluated to the MDL.
3n	This sample was evaluated to the MDL.
J	Analyte detected below reporting limit, therefore result is an estimate.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00922 - Oregon COP
Pace Project No.: 252579

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
252579004	**Trip Blank**	EPA 5030B/8260	MSV/1747		
252579001	**Bin-1A**	EPA 3546	OEXT/1706	NWTPH-Dx	GCSV/1359
252579002	**Bin-1B**	EPA 3546	OEXT/1706	NWTPH-Dx	GCSV/1359
252579003	**Bin-1C**	EPA 3546	OEXT/1706	NWTPH-Dx	GCSV/1359
252579001	**Bin-1A**	ASTM D2974-87	PMST/1136		
252579002	**Bin-1B**	ASTM D2974-87	PMST/1136		
252579003	**Bin-1C**	ASTM D2974-87	PMST/1136		
252579001	**Bin-1A**	NWTPH-Gx	GCV/1348	NWTPH-Gx	GCV/1353
252579002	**Bin-1B**	NWTPH-Gx	GCV/1348	NWTPH-Gx	GCV/1353
252579003	**Bin-1C**	NWTPH-Gx	GCV/1348	NWTPH-Gx	GCV/1353
252579001	**Bin-1A**	EPA 3010	MPRP/1367	EPA 6010	ICP/1288
252579002	**Bin-1B**	EPA 3010	MPRP/1367	EPA 6010	ICP/1288
252579003	**Bin-1C**	EPA 3010	MPRP/1367	EPA 6010	ICP/1288
252579003	**Bin-1C**	EPA 8260	MSV/1749		
252579001	**Bin-1A**	EPA 8260	MSV/1753		
252579002	**Bin-1B**	EPA 8260	MSV/1753		
252579003	**Bin-1C**	EPA 8260	MSV/1753		
252579001	**Bin-1A**	EPA 8260	MSV/1755		
252579002	**Bin-1B**	EPA 8260	MSV/1755		
252579004	**Trip Blank**	NWTPH-Gx	GCV/1355		

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Generator's Nonhazardous Waste Profile Sheet

D. Regulatory Status (Please check appropriate responses)

1. Is this a USEPA (40 CFR Part 261)/State hazardous waste? If yes, contact your sales representative. ☐ Yes ☑ No
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   - ☐ Delisted Hazardous Waste
   - ☐ Excluded Wastes Under 40 CFR 261.4
   - ☐ Treated Hazardous Waste Debris
   - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   a. If yes, is disposal regulated under TSCA? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated, medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the Contractor if applicable).
5. Check all that apply:
   - ☑ Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: see attached analytical, Pace Project Number 252579 # Pages: 19
   - ☐ Only the analyses identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: _____
   - ☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical). Indicate the number of attached pages: _____
   - ☐ I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.
   - ☑ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

Certification Signature: Myron W Smith **Title:** Site Mgr.

Company Name: ConocoPhillips **Name (Print):** Myron W. Smith

Date: 12/6/09

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation **Approval Decision:** ☐ Approved ☐ Not Approved

☐ Non-hazardous solidification ☐ Other: _____ Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- ☐ Shall not contain free liquid
- ☐ Shipment must be scheduled into disposal facility
- ☐ Approval Number must accompany each shipment
- ☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ **Date:** _____

State Authorization (if Required): _____ **Date:** _____

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Generator's Nonhazardous Waste Profile Sheet

Requested Disposal Facility _____ Profile Number

☐ Renewal for Profile Number _____ Waste Approval Expiration Date _____

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: ConocoPhillips (PDX Terminal 00922)
2. Site Address: 5528 NW Doanne Avenue
3. City/ZIP: Portland/97210
4. State: Oregon
5. County: Multnomah
6. Contact Name/Title: Myron Smith/Western Region Manager
7. Email Address: myron.w.smith@conocophillips.com
8. Phone: 6024522505
9. FAX: 6024522509
10. NAICS Code: _____
11. Generator USEPA ID #: _____
12. State ID# (if applicable): _____

B. Customer Information ☐ same as above

P. O. Number: _____

1. Customer Name: CCS
2. Billing Address: 9420 NW St. Helens Road
3. City, State and ZIP: Portland, Oregon 97231
4. Contact Name: Scott Gilfillan
5. Contact Email: scottgccs@ccs-pnecorp.com
6. Phone: 5032479466 FAX: 5032471002
7. Transporter Name: CCS
8. Transporter ID # (if appl.): _____
9. Transporter Address: 9420 NW St. Helens Road
10. City, State and ZIP: Portland, Oregon 97231

C. Waste Stream Information

1. DESCRIPTION
   a. Common Waste Name: Soil State Waste Code(s): _____
   b. Describe Process Generating Waste or Source of Contamination:

   Excavations, soil is in a covered 20 cubic yard bin lined with plastic

   c. Typical Color(s): brown
   d. Strong Odor? ☐ Yes ☑ No Describe: _____
   e. Physical State at 70°F: ☑ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other: _____
   f. Layers? ☐ Single layer ☐ Multi- layer ☑ NA
   g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: _____
   h. Free Liquid Range (%): _____ to _____ ☑ NA(solid)
   i. pH Range: ☐ ≤2 ☐ 2.1-12.4 ☐ ≥12.5 ☑ NA(solid) ☐ Actual: _____
   j. Liquid Flash Point: ☐ < 140°F ☐ ≥ 140°F ☑ NA(solid) ☐ Actual: _____
   k. Flammable Solid: ☐ Yes ☑ No
   l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents *(Total Composition Must be ≥ 100%)*	Concentration %	Constituents *(Total Composition Must be ≥ 100%)*	Concentration %
1. Soil	99 %	4.	
2. Asphalt, concrete	1 %	5.	
3.		6.	

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION
   a. ☑ Event ☐ Base/Ongoing (Check One)
   b. Estimated Annual Quantity: 20 ☐ Tons ☑ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): _____
   c. Shipping Frequency: _____ Units per ☐ Month ☐ Quarter ☐ Year ☑ One Time ☐ Other
   d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No
   e. USDOT Shipping Description (if applicable): _____
3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Level D PPE, nitrile and leather work gloves

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COP0019717

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

December 04, 2009

Bill Edmund
COP_Stantec Washington
12034 134th CT
Redmond, WA 98052

RE: Project: 00922 - Oregon COP
Pace Project No.: 252579

Dear Bill Edmund:
Enclosed are the analytical results for sample(s) received by the laboratory on December 01, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross

jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Chris Carlton-Franco, Stantec
Janet Nash, Stantec

REPORT OF LABORATORY ANALYSIS

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940 South Harney
Seattle, WA 98108
(206)767-5060

CERTIFICATIONS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Washington Certification IDs

940 South Harney Street Seattle, WA 98108
Washington Certification #: C1229
Oregon Certification #: WA200007
Alaska CS Certification #: UST-025
California Certification #: 01153CA
Alaska Drinking Water Micro Certification #: WA01230
Alaska Drinking Water VOC Certification #: WA01-09
Florida/NELAP Certification #: E87617

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(206)767-5060

SAMPLE SUMMARY

Project: 00922 - Oregon COP
Pace Project No.: 252579

Lab ID	Sample ID	Matrix	Date Collected	Date Received
252579001	**Bin-1A**	Solid	11/30/09 14:00	12/01/09 08:20
252579002	**Bin-1B**	Solid	11/30/09 14:00	12/01/09 08:20
252579003	**Bin-1C**	Solid	11/30/09 14:00	12/01/09 08:20
252579004	**Trip Blank**	Water	11/30/09 00:00	12/01/09 08:20

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(206)767-5060

SAMPLE ANALYTE COUNT

Project: 00922 - Oregon COP
Pace Project No.: 252579

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
252579001	**Bin-1A**	ASTM D2974-87	DJK	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	5	PASI-S
		EPA 8260	LPM	8	PASI-S
		NWTPH-Dx	KRK	4	PASI-S
		NWTPH-Gx	ATH	3	PASI-S
252579002	**Bin-1B**	ASTM D2974-87	DJK	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	5	PASI-S
		EPA 8260	LPM	8	PASI-S
		NWTPH-Dx	KRK	4	PASI-S
		NWTPH-Gx	ATH	3	PASI-S
252579003	**Bin-1C**	ASTM D2974-87	DJK	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	5	PASI-S
		EPA 8260	LPM	8	PASI-S
		NWTPH-Dx	KRK	4	PASI-S
		NWTPH-Gx	ATH	3	PASI-S
252579004	**Trip Blank**	EPA 5030B/8260	LNH	8	PASI-S
		NWTPH-Gx	ATH	3	PASI-S

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(206)767-5060

ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Bin-1A **Lab ID: 252579001** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**24.1**	mg/kg	23.4	3.7	1	12/01/09 15:20	12/02/09 17:18		
Motor Oil Range SG	**270**	mg/kg	93.5	25.1	1	12/01/09 15:20	12/02/09 17:18	64742-65-0	
n-Octacosane (S) SG	97	%	50-150		1	12/01/09 15:20	12/02/09 17:18	630-02-4	
o-Terphenyl (S) SG	92	%	50-150		1	12/01/09 15:20	12/02/09 17:18	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**1.2J**	mg/kg	6.5	0.26	1	12/02/09 08:00	12/02/09 21:53		2n
a,a,a-Trifluorotoluene (S)	78	%	50-150		1	12/02/09 08:00	12/02/09 21:53	98-08-8	
4-Bromofluorobenzene (S)	73	%	50-150		1	12/02/09 08:00	12/02/09 21:53	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 12/01/09 15:36								
Lead	ND	mg/L	1.0	1.0	1	12/02/09 10:30	12/03/09 09:16	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/01/09 17:40								
Benzene	ND	ug/L	50.0	48.0	1		12/03/09 14:10	71-43-2	
1,2-Dichloroethane-d4 (S)	109	%	60-140		1		12/03/09 14:10	17060-07-0	3n
Toluene-d8 (S)	105	%	60-140		1		12/03/09 14:10	2037-26-5	
4-Bromofluorobenzene (S)	97	%	60-140		1		12/03/09 14:10	460-00-4	
Dibromofluoromethane (S)	107	%	60-140		1		12/03/09 14:10	1868-53-7	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.5	0.18	1		12/03/09 12:31	71-43-2	
Ethylbenzene	ND	ug/kg	3.5	0.45	1		12/03/09 12:31	100-41-4	
Toluene	ND	ug/kg	3.5	0.36	1		12/03/09 12:31	108-88-3	
Xylene (Total)	ND	ug/kg	7.1	0.88	1		12/03/09 12:31	1330-20-7	
Dibromofluoromethane (S)	87	%	80-136		1		12/03/09 12:31	1868-53-7	3n
Toluene-d8 (S)	108	%	80-120		1		12/03/09 12:31	2037-26-5	
4-Bromofluorobenzene (S)	99	%	72-122		1		12/03/09 12:31	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	80-143		1		12/03/09 12:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.0**	%	0.10	0.10	1		12/01/09 15:05		

Sample: Bin-1B **Lab ID: 252579002** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**13.1J**	mg/kg	23.5	3.7	1	12/01/09 15:20	12/02/09 17:56		J
Motor Oil Range SG	**102**	mg/kg	93.9	25.2	1	12/01/09 15:20	12/02/09 17:56	64742-65-0	

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COP0019722

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Bin-1B **Lab ID: 252579002** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
n-Octacosane (S) SG	102	%	50-150		1	12/01/09 15:20	12/02/09 17:56	630-02-4	
o-Terphenyl (S) SG	95	%	50-150		1	12/01/09 15:20	12/02/09 17:56	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	ND	mg/kg	6.7	0.27	1	12/02/09 08:00	12/02/09 22:16		2n
a,a,a-Trifluorotoluene (S)	83	%	50-150		1	12/02/09 08:00	12/02/09 22:16	98-08-8	
4-Bromofluorobenzene (S)	75	%	50-150		1	12/02/09 08:00	12/02/09 22:16	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 12/01/09 15:36								
Lead	ND	mg/L	1.0	1.0	1	12/02/09 10:30	12/03/09 09:24	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/01/09 17:40								
Benzene	ND	ug/L	50.0	48.0	1		12/03/09 14:30	71-43-2	
1,2-Dichloroethane-d4 (S)	109	%	60-140		1		12/03/09 14:30	17060-07-0	3n
Toluene-d8 (S)	105	%	60-140		1		12/03/09 14:30	2037-26-5	
4-Bromofluorobenzene (S)	103	%	60-140		1		12/03/09 14:30	460-00-4	
Dibromofluoromethane (S)	105	%	60-140		1		12/03/09 14:30	1868-53-7	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.5	0.17	1		12/03/09 12:52	71-43-2	
Ethylbenzene	ND	ug/kg	3.5	0.44	1		12/03/09 12:52	100-41-4	
Toluene	ND	ug/kg	3.5	0.36	1		12/03/09 12:52	108-88-3	
Xylene (Total)	ND	ug/kg	7.0	0.87	1		12/03/09 12:52	1330-20-7	
Dibromofluoromethane (S)	87	%	80-136		1		12/03/09 12:52	1868-53-7	3n
Toluene-d8 (S)	106	%	80-120		1		12/03/09 12:52	2037-26-5	
4-Bromofluorobenzene (S)	97	%	72-122		1		12/03/09 12:52	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	80-143		1		12/03/09 12:52	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**15.0**	%	0.10	0.10	1		12/01/09 15:06		

Sample: Bin-1C **Lab ID: 252579003** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**6.2J**	mg/kg	22.4	3.6	1	12/01/09 15:20	12/02/09 18:15		J
Motor Oil Range SG	**51.8J**	mg/kg	89.8	24.1	1	12/01/09 15:20	12/02/09 18:15	64742-65-0	J
n-Octacosane (S) SG	102	%	50-150		1	12/01/09 15:20	12/02/09 18:15	630-02-4	
o-Terphenyl (S) SG	97	%	50-150		1	12/01/09 15:20	12/02/09 18:15	84-15-1	

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Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Bin-1C **Lab ID: 252579003** Collected: 11/30/09 14:00 Received: 12/01/09 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	ND	mg/kg	6.4	0.26	1	12/02/09 08:00	12/02/09 23:02		2n
a,a,a-Trifluorotoluene (S)	67	%	50-150		1	12/02/09 08:00	12/02/09 23:02	98-08-8	
4-Bromofluorobenzene (S)	67	%	50-150		1	12/02/09 08:00	12/02/09 23:02	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 12/01/09 15:36								
Lead	ND	mg/L	1.0	1.0	1	12/02/09 10:30	12/03/09 09:27	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 12/01/09 17:40								
Benzene	ND	ug/L	50.0	48.0	1		12/02/09 16:51	71-43-2	
1,2-Dichloroethane-d4 (S)	109	%	60-140		1		12/02/09 16:51	17060-07-0	3n
Toluene-d8 (S)	105	%	60-140		1		12/02/09 16:51	2037-26-5	
4-Bromofluorobenzene (S)	97	%	60-140		1		12/02/09 16:51	460-00-4	
Dibromofluoromethane (S)	107	%	60-140		1		12/02/09 16:51	1868-53-7	
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.2	0.16	1		12/03/09 13:12	71-43-2	
Ethylbenzene	ND	ug/kg	3.2	0.40	1		12/03/09 13:12	100-41-4	
Toluene	ND	ug/kg	3.2	0.33	1		12/03/09 13:12	108-88-3	
Xylene (Total)	ND	ug/kg	6.4	0.80	1		12/03/09 13:12	1330-20-7	
Dibromofluoromethane (S)	90	%	80-136		1		12/03/09 13:12	1868-53-7	3n
Toluene-d8 (S)	105	%	80-120		1		12/03/09 13:12	2037-26-5	
4-Bromofluorobenzene (S)	98	%	72-122		1		12/03/09 13:12	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	80-143		1		12/03/09 13:12	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.8**	%	0.10	0.10	1		12/01/09 15:08		

Sample: Trip Blank **Lab ID: 252579004** Collected: 11/30/09 00:00 Received: 12/01/09 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		12/03/09 17:18		2n
a,a,a-Trifluorotoluene (S)	109	%	50-150		1		12/03/09 17:18	98-08-8	
4-Bromofluorobenzene (S)	99	%	50-150		1		12/03/09 17:18	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	ND	ug/L	1.0	0.12	1		12/01/09 12:34	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		12/01/09 12:34	100-41-4	
Toluene	ND	ug/L	1.0	0.21	1		12/01/09 12:34	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		12/01/09 12:34	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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940 South Harney
Seattle, WA 98108
(206)767-5060

ANALYTICAL RESULTS

Project: 00922 - Oregon COP
Pace Project No.: 252579

Sample: Trip Blank **Lab ID: 252579004** Collected: 11/30/09 00:00 Received: 12/01/09 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
4-Bromofluorobenzene (S)	100	%	80-120		1		12/01/09 12:34	460-00-4	3n
Dibromofluoromethane (S)	106	%	80-122		1		12/01/09 12:34	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	80-124		1		12/01/09 12:34	17060-07-0	
Toluene-d8 (S)	105	%	80-123		1		12/01/09 12:34	2037-26-5	

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1753 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16815 Matrix: Solid
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	3.0	12/03/09 08:53	
Ethylbenzene	ug/kg	ND	3.0	12/03/09 08:53	
Toluene	ug/kg	ND	3.0	12/03/09 08:53	
Xylene (Total)	ug/kg	ND	6.0	12/03/09 08:53	
1,2-Dichloroethane-d4 (S)	%	94	80-143	12/03/09 08:53	
4-Bromofluorobenzene (S)	%	96	72-122	12/03/09 08:53	
Dibromofluoromethane (S)	%	89	80-136	12/03/09 08:53	3n
Toluene-d8 (S)	%	106	80-120	12/03/09 08:53	

LABORATORY CONTROL SAMPLE: 16816

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	20	20.2	101	68-124	
Ethylbenzene	ug/kg	20	20.0	100	63-131	
Toluene	ug/kg	20	20.6	103	61-126	
Xylene (Total)	ug/kg	60	61.9	103	68-129	
1,2-Dichloroethane-d4 (S)	%			89	80-143	
4-Bromofluorobenzene (S)	%			99	72-122	
Dibromofluoromethane (S)	%			90	80-136	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16864 16865

Parameter	Units	252579003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	ND	22.7	22.4	19.4	19.5	85	87	68-124	.8	30	
Ethylbenzene	ug/kg	ND	22.7	22.4	18.9	18.2	83	82	63-131	3	30	
Toluene	ug/kg	ND	22.7	22.4	19.7	19.6	86	87	61-126	.3	30	
Xylene (Total)	ug/kg	ND	68.2	67.1	57.8	56.9	84	84	68-129	2	30	
1,2-Dichloroethane-d4 (S)	%						96	99	80-143			
4-Bromofluorobenzene (S)	%						100	103	72-122			
Dibromofluoromethane (S)	%						89	92	80-136			
Toluene-d8 (S)	%						100	101	80-120			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1747
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 252579004

METHOD BLANK: 16634 Matrix: Water
Associated Lab Samples: 252579004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/01/09 10:58	
Ethylbenzene	ug/L	ND	1.0	12/01/09 10:58	
Toluene	ug/L	ND	1.0	12/01/09 10:58	
Xylene (Total)	ug/L	ND	3.0	12/01/09 10:58	
1,2-Dichloroethane-d4 (S)	%	106	80-124	12/01/09 10:58	
4-Bromofluorobenzene (S)	%	100	80-120	12/01/09 10:58	3n
Dibromofluoromethane (S)	%	106	80-122	12/01/09 10:58	
Toluene-d8 (S)	%	105	80-123	12/01/09 10:58	

LABORATORY CONTROL SAMPLE & LCSD: 16635 16636

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	22.1	21.4	110	107	75-124	3	30	
Ethylbenzene	ug/L	20	21.6	20.8	108	104	76-124	4	30	
Toluene	ug/L	20	21.2	20.6	106	103	75-124	3	30	
Xylene (Total)	ug/L	60	66.9	64.6	112	108	76-123	4	30	
1,2-Dichloroethane-d4 (S)	%				104	106	80-124			
4-Bromofluorobenzene (S)	%				101	101	80-120			
Dibromofluoromethane (S)	%				106	106	80-122			
Toluene-d8 (S)	%				104	104	80-123			

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: OEXT/1706 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3546 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16654 Matrix: Solid
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range SG	mg/kg	7.7J	20.0	12/02/09 16:40	1n,J
Motor Oil Range SG	mg/kg	ND	80.0	12/02/09 16:40	
n-Octacosane (S) SG	%	97	50-150	12/02/09 16:40	
o-Terphenyl (S) SG	%	85	50-150	12/02/09 16:40	

LABORATORY CONTROL SAMPLE: 16655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range SG	mg/kg	500	373	75	56-124	
Motor Oil Range SG	mg/kg	500	420	84	50-150	
n-Octacosane (S) SG	%			100	50-150	
o-Terphenyl (S) SG	%			82	50-150	

SAMPLE DUPLICATE: 16656

Parameter	Units	252579001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range SG	mg/kg	24.1	15.3J		50	J
Motor Oil Range SG	mg/kg	270	213	23	50	
n-Octacosane (S) SG	%		95	.8		
o-Terphenyl (S) SG	%		93	2		

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1755 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 252579001, 252579002

METHOD BLANK: 16750 Matrix: Water
Associated Lab Samples: 252579001, 252579002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	50.0	12/03/09 13:48	
1,2-Dichloroethane-d4 (S)	%	109	60-140	12/03/09 13:48	3n
4-Bromofluorobenzene (S)	%	98	60-140	12/03/09 13:48	
Dibromofluoromethane (S)	%	107	60-140	12/03/09 13:48	
Toluene-d8 (S)	%	104	60-140	12/03/09 13:48	

METHOD BLANK: 16821 Matrix: Water
Associated Lab Samples: 252579001, 252579002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/03/09 09:40	
1,2-Dichloroethane-d4 (S)	%	109	60-140	12/03/09 09:40	3n
4-Bromofluorobenzene (S)	%	97	60-140	12/03/09 09:40	
Dibromofluoromethane (S)	%	106	60-140	12/03/09 09:40	
Toluene-d8 (S)	%	104	60-140	12/03/09 09:40	

LABORATORY CONTROL SAMPLE & LCSD: 16822 16823

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	21.4	20.5	107	103	60-140	4	20	
1,2-Dichloroethane-d4 (S)	%				107	107	60-140			
4-Bromofluorobenzene (S)	%				101	101	60-140			
Dibromofluoromethane (S)	%				108	107	60-140			
Toluene-d8 (S)	%				104	102	60-140			

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MSV/1749 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 252579003

METHOD BLANK: 16747 Matrix: Water
Associated Lab Samples: 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/02/09 11:33	
1,2-Dichloroethane-d4 (S)	%	108	60-140	12/02/09 11:33	
4-Bromofluorobenzene (S)	%	97	60-140	12/02/09 11:33	
Dibromofluoromethane (S)	%	107	60-140	12/02/09 11:33	
Toluene-d8 (S)	%	105	60-140	12/02/09 11:33	

LABORATORY CONTROL SAMPLE & LCSD: 16748 16749

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	21.3	20.5	106	102	60-140	4	20	
1,2-Dichloroethane-d4 (S)	%				107	107	60-140			
4-Bromofluorobenzene (S)	%				100	100	60-140			
Dibromofluoromethane (S)	%				106	107	60-140			
Toluene-d8 (S)	%				104	104	60-140			

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: PMST/1136 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 252579001, 252579002, 252579003

SAMPLE DUPLICATE: 16657

Parameter	Units	252579002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.0	15.1	.9	30	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: MPRP/1367 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16697 Matrix: Water
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/L	ND	1.0	12/03/09 09:10	

LABORATORY CONTROL SAMPLE: 16698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16699 16700

Parameter	Units	252579001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	5	5	4.8	4.8	96	97	75-125	.8	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: GCV/1355 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 252579004

METHOD BLANK: 16851 Matrix: Water
Associated Lab Samples: 252579004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	15.1J	50.0	12/03/09 15:44	2n
4-Bromofluorobenzene (S)	%	110	50-150	12/03/09 15:44	
a,a,a-Trifluorotoluene (S)	%	119	50-150	12/03/09 15:44	

LABORATORY CONTROL SAMPLE: 16852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	289	116	50-163	
4-Bromofluorobenzene (S)	%			89	50-150	
a,a,a-Trifluorotoluene (S)	%			102	50-150	

SAMPLE DUPLICATE: 16885

Parameter	Units	252592001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	29.2J	27.8J		30	
4-Bromofluorobenzene (S)	%	101	94	7		
a,a,a-Trifluorotoluene (S)	%	114	104	9		

SAMPLE DUPLICATE: 16886

Parameter	Units	252595004 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	13.5J	ND		30	
4-Bromofluorobenzene (S)	%	91	85	7		
a,a,a-Trifluorotoluene (S)	%	106	98	7		

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QUALITY CONTROL DATA

Project: 00922 - Oregon COP
Pace Project No.: 252579

QC Batch: GCV/1348 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Solid GCV
Associated Lab Samples: 252579001, 252579002, 252579003

METHOD BLANK: 16658 Matrix: Solid
Associated Lab Samples: 252579001, 252579002, 252579003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	0.42J	5.0	12/02/09 15:37	2n
4-Bromofluorobenzene (S)	%	111	50-150	12/02/09 15:37	
a,a,a-Trifluorotoluene (S)	%	116	50-150	12/02/09 15:37	

LABORATORY CONTROL SAMPLE: 16659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	12.5	15.6	124	54-156	
4-Bromofluorobenzene (S)	%			112	50-150	
a,a,a-Trifluorotoluene (S)	%			115	50-150	

SAMPLE DUPLICATE: 16807

Parameter	Units	252553004 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	ND	0.88J		50	
4-Bromofluorobenzene (S)	%		79	33		
a,a,a-Trifluorotoluene (S)	%		92	27		

SAMPLE DUPLICATE: 16808

Parameter	Units	252553010 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	ND	1.4J		50	
4-Bromofluorobenzene (S)	%		87	18		
a,a,a-Trifluorotoluene (S)	%		100	11		

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QUALIFIERS

Project: 00922 - Oregon COP
Pace Project No.: 252579

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

1n	Analyte was detected in blank below the reporting limit, but above the MDL.
2n	Sample was evaluated to the MDL.
3n	This sample was evaluated to the MDL.
J	Analyte detected below reporting limit, therefore result is an estimate.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00922 - Oregon COP
Pace Project No.: 252579

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
252579004	**Trip Blank**	EPA 5030B/8260	MSV/1747		
252579001	**Bin-1A**	EPA 3546	OEXT/1706	NWTPH-Dx	GCSV/1359
252579002	**Bin-1B**	EPA 3546	OEXT/1706	NWTPH-Dx	GCSV/1359
252579003	**Bin-1C**	EPA 3546	OEXT/1706	NWTPH-Dx	GCSV/1359
252579001	**Bin-1A**	ASTM D2974-87	PMST/1136		
252579002	**Bin-1B**	ASTM D2974-87	PMST/1136		
252579003	**Bin-1C**	ASTM D2974-87	PMST/1136		
252579001	**Bin-1A**	NWTPH-Gx	GCV/1348	NWTPH-Gx	GCV/1353
252579002	**Bin-1B**	NWTPH-Gx	GCV/1348	NWTPH-Gx	GCV/1353
252579003	**Bin-1C**	NWTPH-Gx	GCV/1348	NWTPH-Gx	GCV/1353
252579001	**Bin-1A**	EPA 3010	MPRP/1367	EPA 6010	ICP/1288
252579002	**Bin-1B**	EPA 3010	MPRP/1367	EPA 6010	ICP/1288
252579003	**Bin-1C**	EPA 3010	MPRP/1367	EPA 6010	ICP/1288
252579003	**Bin-1C**	EPA 8260	MSV/1749		
252579001	**Bin-1A**	EPA 8260	MSV/1753		
252579002	**Bin-1B**	EPA 8260	MSV/1753		
252579003	**Bin-1C**	EPA 8260	MSV/1753		
252579001	**Bin-1A**	EPA 8260	MSV/1755		
252579002	**Bin-1B**	EPA 8260	MSV/1755		
252579004	**Trip Blank**	NWTPH-Gx	GCV/1355		

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Generator's Nonhazardous Waste Profile Sheet

D. Regulatory Status (Please check appropriate responses)

1. Is this a USEPA (40 CFR Part 261)/State hazardous waste? If yes, contact your sales representative. ☐ Yes ☑ No
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   - ☐ Delisted Hazardous Waste
   - ☐ Excluded Wastes Under 40 CFR 261.4
   - ☐ Treated Hazardous Waste Debris
   - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   a. If yes, is disposal regulated under TSCA? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated, medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the Contractor if applicable).
5. Check all that apply:
   - ☑ Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: see attached analytical, Pace Project Number 252579 # Pages: 19
   - ☐ Only the analyses identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: _____
   - ☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical). Indicate the number of attached pages: _____
   - ☐ I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.
   - ☑ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

Certification Signature: Myron W Smith **Title:** Site Mgr.

Company Name: ConocoPhillips **Name (Print):** Myron W. Smith

Date: 12/6/09

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation **Approval Decision:** ☐ Approved ☐ Not Approved

☐ Non-hazardous solidification ☐ Other: _____ Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

- ☐ Shall not contain free liquid
- ☐ Shipment must be scheduled into disposal facility
- ☐ Approval Number must accompany each shipment
- ☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ **Date:** _____

State Authorization (if Required): _____ **Date:** _____

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Generator's Nonhazardous Waste Profile Sheet

Requested Disposal Facility _____ Profile Number

☐ Renewal for Profile Number _____ Waste Approval Expiration Date _____

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: ConocoPhillips (PDX Terminal 00922)
2. Site Address: 5528 NW Doanne Avenue
3. City/ZIP: Portland/97210
4. State: Oregon
5. County: Multnomah
6. Contact Name/Title: Myron Smith/Western Region Manager
7. Email Address: myron.w.smith@conocophillips.com
8. Phone: 6024522505
9. FAX: 6024522509
10. NAICS Code: _____
11. Generator USEPA ID #: _____
12. State ID# (if applicable): _____

B. Customer Information ☐ same as above

P. O. Number: _____

1. Customer Name: CCS
2. Billing Address: 9420 NW St. Helens Road
3. City, State and ZIP: Portland, Oregon 97231
4. Contact Name: Scott Gilfillan
5. Contact Email: scottgccs@ccs-pnecorp.com
6. Phone: 5032479466 FAX: 5032471002
7. Transporter Name: CCS
8. Transporter ID # (if appl.): _____
9. Transporter Address: 9420 NW St. Helens Road
10. City, State and ZIP: Portland, Oregon 97231

C. Waste Stream Information

1. DESCRIPTION
   a. Common Waste Name: Soil State Waste Code(s): _____
   b. Describe Process Generating Waste or Source of Contamination:

   Excavations, soil is in a covered 20 cubic yard bin lined with plastic

   c. Typical Color(s): brown
   d. Strong Odor? ☐ Yes ☑ No Describe: _____
   e. Physical State at 70°F: ☑ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other: _____
   f. Layers? ☐ Single layer ☐ Multi- layer ☑ NA
   g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: _____
   h. Free Liquid Range (%): _____ to _____ ☑ NA(solid)
   i. pH Range: ☐ ≤2 ☐ 2.1-12.4 ☐ ≥12.5 ☑ NA(solid) ☐ Actual: _____
   j. Liquid Flash Point: ☐ < 140°F ☐ ≥ 140°F ☑ NA(solid) ☐ Actual: _____
   k. Flammable Solid: ☐ Yes ☑ No
   l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents *(Total Composition Must be ≥ 100%)*	Concentration %	Constituents *(Total Composition Must be ≥ 100%)*	Concentration %
1. Soil	99 %	4.	
2. Asphalt, concrete	1 %	5.	
3.		6.	

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION
   a. ☑ Event ☐ Base/Ongoing (Check One)
   b. Estimated Annual Quantity: 20 ☐ Tons ☑ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): _____
   c. Shipping Frequency: _____ Units per ☐ Month ☐ Quarter ☐ Year ☑ One Time ☐ Other
   d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No
   e. USDOT Shipping Description (if applicable): _____
3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Level D PPE, nitrile and leather work gloves

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From: Edmund, Bill
Sent: Tuesday, December 22, 2009 08:18 PM
To: Smith, Myron - Environmental:
CC: Davis, Alisa
Subject: Portland Terminal - RM&R Site 00922 - Work Plan for Asphalt Maintenance Activity - Revisions
Attachments: 922--work plan for asphalt removal and soil sampling --TF 1.pdf

Myron:

Please find attached the Work plan edits, per our discussion this morning. Let me know if it is acceptable to send out. Thanks.

<<922--work plan for asphalt removal and soil sampling --TF 1.pdf>>

William C. Edmund, P.G., R.G., R.E.A. I
Managing Principal Geologist
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 131
Fx: (503) 692-7074
Cell: (503) 510-6024
bill.edmund@stantec.com
stantec.com

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Stantec Consulting Corporation
7730 Southwest Mohawk Street
Tualatin OR 97062
Tel: (503) 691-2030
Fax: (503) 692-7074

Stantec

December 15, 2009

Mr. Michael Romero
Oregon Department of Environmental Quality
NW Region Cleanup Section
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201

Re: Work Plan for Asphalt Maintenance and Soil Sampling
ConocoPhillips Site No. 0922
5528 Doanne Avenue
Portland, Oregon 97210

Dear Mr. Romero:

Stantec Consulting Corporation (Stantec), formerly SECOR International Incorporated, presents this Work Plan for Asphalt Maintenance and Soil Sampling at the above referenced location in Portland, Oregon (the Site). Stantec has prepared this Work Plan on behalf of ConocoPhillips Company Risk Management and Remediation in order to notify the Oregon Department of Environmental Quality (ODEQ) of upcoming construction activities at the Site which will involve some soil characterization for disposal and provide an opportunity for some additional assessment activities. The assessment activities include collection and laboratory analysis of soil to further delineate soil impacts on the Site. Soil materials will be disposed of as outlined in the Contaminated Media Management Plan (Stantec, 2009)

SCOPE OF WORK

The scope of work includes routine maintenance involving the removal and replacement of two sections of asphalt identified as Areas 2, 3 and 4 near the black-oil offloading rack. Area 2 is on the southern end of the loading rack and measures 55 by 39 feet; also known as the helicopter landing pad. Area 3 is located south of Area 2; the asphalt repair work will expose an area measuring 102 by 39 feet. Area 4 is located on the northern end of the loading rack and measures 54 by 100 feet. There are no monitoring wells in the immediate area. The closest monitoring well, U-5A, is located approximately 80 feet away in Tank Farm 1 west of Tank #2783. Erosion control measures will be implemented to prevent any soil materials from entering adjacent catch basins or migrating from the work area. Areas 2, 3 and 4 can be seen on Figure 1 and Appendix A. The following tasks will be completed during the investigation:

- Task 1 – Observation;
- Task-2 – Waste management;
- Task 3 – Laboratory analytical testing; and
- Task 4 – Data analysis and reporting.

Details of each task are described below:

Task 1 – Observation

The purpose of the observation is to document asphalt maintenance activities, and observe and monitor soils for possible hydrocarbon contamination. Field personnel will use a photoionization detector (PID) to measure for volatizing compounds and record the data. Exposed soil will be visually inspected for any evidence of hydrocarbon contamination. Photo documentation of exposed soil will be collected. If field observations and PID readings indicate that soils have hydrocarbon impacts, soil samples will be collected as warranted.

Task 2 – Waste Management

All removed soil materials will be segregated and placed into lined roll-off bins and temporarily stored onsite. Once scope of work is complete and disposal is warranted, soil samples will be analyzed according to the facility's requirements. The analytical test results will be used to characterize the soil for transportation and disposal at an approved disposal facility.

Task 3 – Laboratory Analytical Testing

If soil samples are collected from each location, samples will be submitted for the following analytical tests:

- TPH-D and TPH-O per Northwest Method NWTPH-Dx with silica gel cleanup;
- TPH-G per Northwest Method NWTPH-Gx;
- DEQ Risk-Based Decision Making (RBDM)[1] VOCs[2] per Environmental Protection Agency (EPA) Method 8260B; and
- Polycyclic Aromatic Hydrocarbons (PAHs) per EPA Method 8270 SIM if diesel is detected.

Task 4 – Data Analysis and Reporting

An assessment report will be prepared by Stantec after the final analytical data reports are received. The assessment report will include a summary of field activities, soil sample locations, soil analytical results, findings, and conclusions.

[1] DEQ, 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites, Oregon Department of Environmental Quality, Underground Tanks Program, September 2003.

[2] RBDM VOCs include benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene, 1,2,4 trimethylbenzene, 1,3,5-trimethylbenzene, isopropylbenzene, n-propylbenzene, 1,2 dibromoethane (EDB), and 1,2-dichloroethane (EDC).

COP0019741

If you have any questions on this Work Plan or the project in general, please contact the undersigned at 503-691-2030.

Sincerely,
Stantec Consulting Corporation

Chris Carlton-Franco, M.Sc.
Staff Scientist

William C. Edmund, P.G.
Managing Principal Geologist

Figure 1 – Site Plan

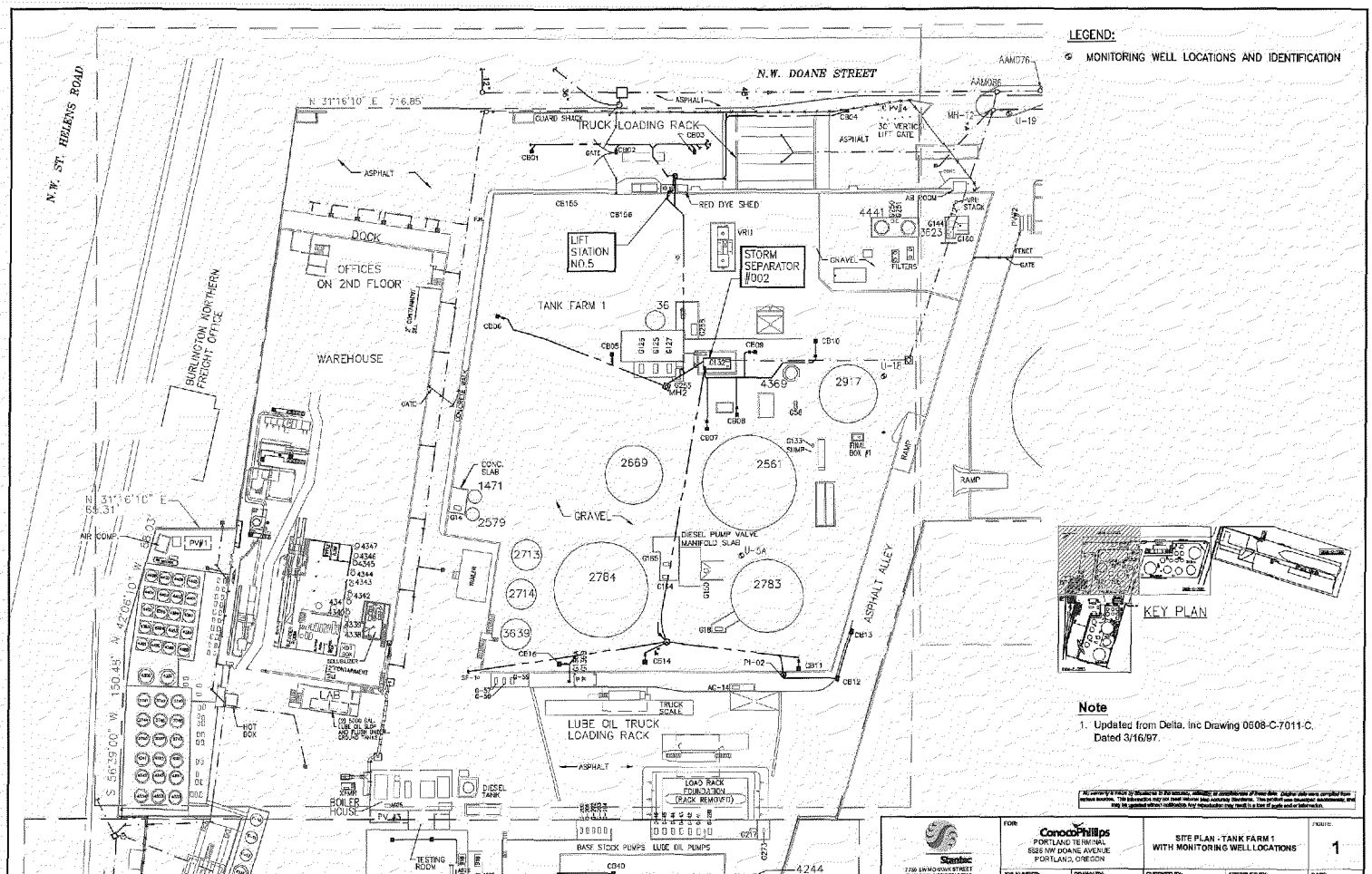
Appendix A – Aerial Photographs of Area 2, Area 3 and Area 4

CCF/WCE

cc: Mr. Myron Smith, ConocoPhillips, 1230 W. Washington St., Suite 212, Tempe, AZ 85281

Stantec

FIGURES



FILEPATH:K:\1-CLIENTS\ConocoPhillips\15CP\00922-PTLD TERMINAL\12-2009 FIG. 2B & 2C\15OT-00922-40 STANTEC TB.dwg|rlund|Dec 22, 2009 at 11:43|Layout: FIG.2C

Stantec

APPENDIX A

Area 2
Area 3
Google

Area 4
Google

From: ROMERO Mike
Sent: Thursday, January 14, 2010 02:44 AM
To: Timothy Browning; bill.edmund@stantec.com; Sprick, Grant; Truedinger, Robert; Ward Crell; Brett Hunter (Chevron); Smith, Myron - Environmental:
CC: JOHNSON Keith; THIESSEN Kenneth
Subject: RE: Meeting Deliverables, Willbridge Terminal Group - 12/17 and 1/11 Meetings

Thanks Tim, but is this still Jessica's role? I know she wasn't at the last meeting and b/c of that understand why you are doing this for this time. I think it is important that coordinator role focus solely on keeping the group tasks together and on track. Not saying that can't be done by one of the project leads on an individual site (as it was by Brian a while ago) or that it is isn't currently working just that I don't want it to take away to much of your time and resources that should be focused on the KM specific issues. I've got a full plate for the near future and need these projects to be able to stay on track and on time.

I look forward to the seeing the final response letter so that we can better define the final path to completion of these projects. See comments below in red.

Mike

From: Timothy Browning [mailto:TBrowning@deltaenv.com]
Sent: Wednesday, January 13, 2010 4:10 PM
To: ROMERO Mike; bill.edmund@stantec.com; Sprick, Grant; Truedinger, Robert; Ward Crell
Subject: FW: Meeting Deliverables, Willbridge Terminal Group - 12/17 and 1/11 Meetings

All,

Sorry for the delay, I'm thankful the holidays are behind us. Here is a summary of the deliverables we agreed to complete from the two meetings. We will also be updating the Gantt chart.

1. Delta Common Project - Finalize the draft 12/15/09 response letter to include a list of source control workplans completed to date. It would be good to know now if you plan on including list of future work plans for the remaining pieces as recommended in my comment letter Draft to clients - Jan 22, 2010 Date to DEQ ??
2. Scoping letter for updating the site Risk Assessment - Delta will prepare the first cut outline. Each consultant will then edit and add, items associated with the specific sites. Once the outline is complete, Delta (common project) will prepare the draft and final letter to the DEQ. Scheduled to deliver to the DEQ by March 1, 2010. DEQ can offer assistance here by getting DEQ staff risk assessor re-involved in project. Early buy-in on the planning end will help ensure completeness and minimize comments or revisions.
3. Addendum to the Paramount well letter. Chevron/Aracadis will complete this task to address DEQ concerns. (by March 1?). make sure this questionable date is answered prior to the Gantt Chart update next week

4. Gantt Chart Update - Delta will complete and submit - By Jan 22, 2010

Tim

Tim Browning, RG | Senior Project Manager

Delta Consultants, an Oranjewoud N.V. Company

Direct 503 863 2106 | Mobile 503 704 9617 | USA Toll Free 800 477 7411

tbrowning@deltaenv.com <mailto:tbrowning@deltaenv.com> |
www.deltaenv.com <http://www.deltaenv.com/>

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Confidentiality Notice: If you are not the intended recipient of this email, please delete it. Thank you.

ü Please consider the environment before printing this email.

From: Matthews, Stephen E
Sent: Friday, January 22, 2010 03:56 PM
To: Smith, Myron - Environmental:
Subject: FW: BES Permit #8919
Attachments: Exhibit A&B for 8919.pdf

Myron

Attached are the exhibits for the work in Portland. Let me know if these are reflective of the work for the Permit. I am going to go ahead and work on getting the finalized Permit signed while awaiting word back from the City on the "final fees".

Thanks

Stephen Matthews
ConocoPhillips
Property Tax, Real Estate, Right of Way & Claims
3900 Kilroy Airport Way, Ste. 210
Long Beach, CA 90806
Office: (562) 290-1517
Cell: (562) 240-3644

From: Hittle, Nicole [mailto:Nicole.Hittle@bes.ci.portland.or.us]
Sent: Thursday, January 21, 2010 12:57 PM
To: Matthews, Stephen E
Subject: RE: BES Permit #8919

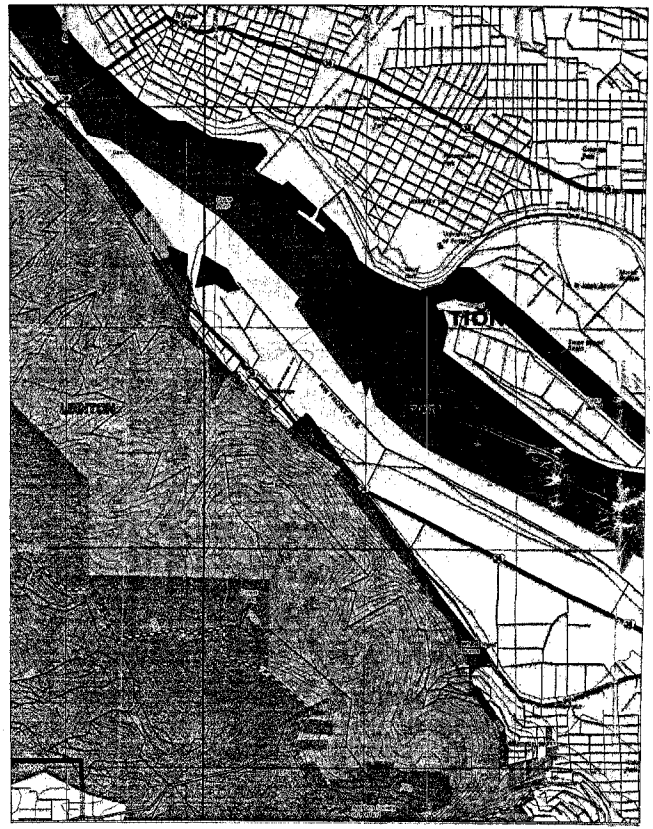
Stephen,
The Exhibits A&B are the attached plan set.
Thanks!

General Standard Notes

1. CONTRACTOR SHALL NOTIFY BUREAU OF ENVIRONMENTAL SERVICES INSPECTION SERVICES AT (503) 823-7931 TWO (2) BUSINESS DAYS PRIOR TO COMMENCEMENT OF WORK.
2. ALL CONSTRUCTION SHALL CONFORM TO CITY OF PORTLAND STANDARD CONSTRUCTION SPECIFICATIONS, AS REVISED 1998. CONTRACTOR AND/OR SUBCONTRACTOR SHALL HAVE A MINIMUM OF ONE SET OF APPROVED PLANS AND CITY OF PORTLAND STANDARD CONSTRUCTION SPECIFICATIONS ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
3. OFFICE OF PLANNING AND DEVELOPMENT REVIEW, APPROVALS AND PERMITS REQUIRED FOR PRIVATELY MAINTAINED STRUCTURES CONSTRUCTED. ALL WORK APPROVED UNDER OPDR PERMITS SHALL BE PRIVATELY OWNED AND MAINTAINED.
4. ATTENTION EXCAVATORS: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THOSE RULES FROM THE CENTER BY CALLING (503)232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CALL CENTER. YOU MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.
5. EXCAVATED SEWER TRENCH SPOIL MATERIAL SHALL BE DISPOSED OF AT A PROPER LANDFILL, OR APPLICANT SHALL OBTAIN A FILL PERMIT FROM THE OFFICE OF PLANNING AND DEVELOPMENT REVIEW BEFORE BEING DISPOSED OF ON-SITE. A COPY OF THE GRADING PERMIT AND PLAN SHOULD ALSO BE PROVIDED TO THE BUREAU OF ENVIRONMENTAL SERVICES FOR CONSTRUCTION INSPECTION.
6. STABILIZATION MAY BE NECESSARY AS PER CITY OF PORTLAND STANDARD CONSTRUCTION SPECIFICATIONS AND APPROVED BY BES.
7. SITE EROSION PLAN TO BE APPROVED AND CONTROLS IN PLACE PRIOR TO CONSTRUCTION. ALL WORK UNDER THIS PERMIT WILL REQUIRE SITE EROSION CONTROL IN COMPLIANCE WITH ALL PROVISIONS OF THE CITY TITLE 10.
8. THIS PERMIT IS FOR WORK ON THE PUBLIC 60" STORM SEWER WHICH INCLUDES:
   - -REMOVAL AND REPLACEMENT OF PIPE (60')
   - -INSTALLATION OF CONCRETE COLLAR AROUND 60" PIPE JOINT GAP INSPECTIONS
   - -PLACEMENT OF RIP-RAP FOR THE DISSAPATION OF FLOW FROM THE 60" PIPE AND FOR THE SUPPORT OF THE CONCRETE COLLAR.
   - -INSPECTION OF OTHER WORK TO ENSURE NO DAMAGE TO THE 60" PUBLIC STORM SEWER DURING CONSTRUCTION.

REFERENCES

USGS 7.5 Minute Topographic Maps
Portland, Oregon-Washington
Linnton, Oregon
Delorme TopoQuads, 1999
SCALE: 1 inch = 3750 feet



NOTE: Permit Job
Ordinance No. 130672
Exhibit "A"

AS-BUILT
1-06-02
Gary Young

ORIGINAL DESIGN
SIGNED BY:
BRAD J BERGREN
KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
		REVISION	

KNOT(S) USED
ROTATION ANGLE
CONSTRUCTED BY: TERRA HYDRA, INC.
PROJECT COMPLETED: 1/3/2002
MAP CORRECTED BY: K KOBOW CHECKED BY: J STIENER
FINAL MAT DATA

DESIGNED BY
DRAWN BY
CHECKED BY
DATE APPD.
PROGRAM MGR.
CONST. MGR.
DESIGN MGR.

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman
Commissioner
Lee Kinglar, PE
BES Chief Engineer

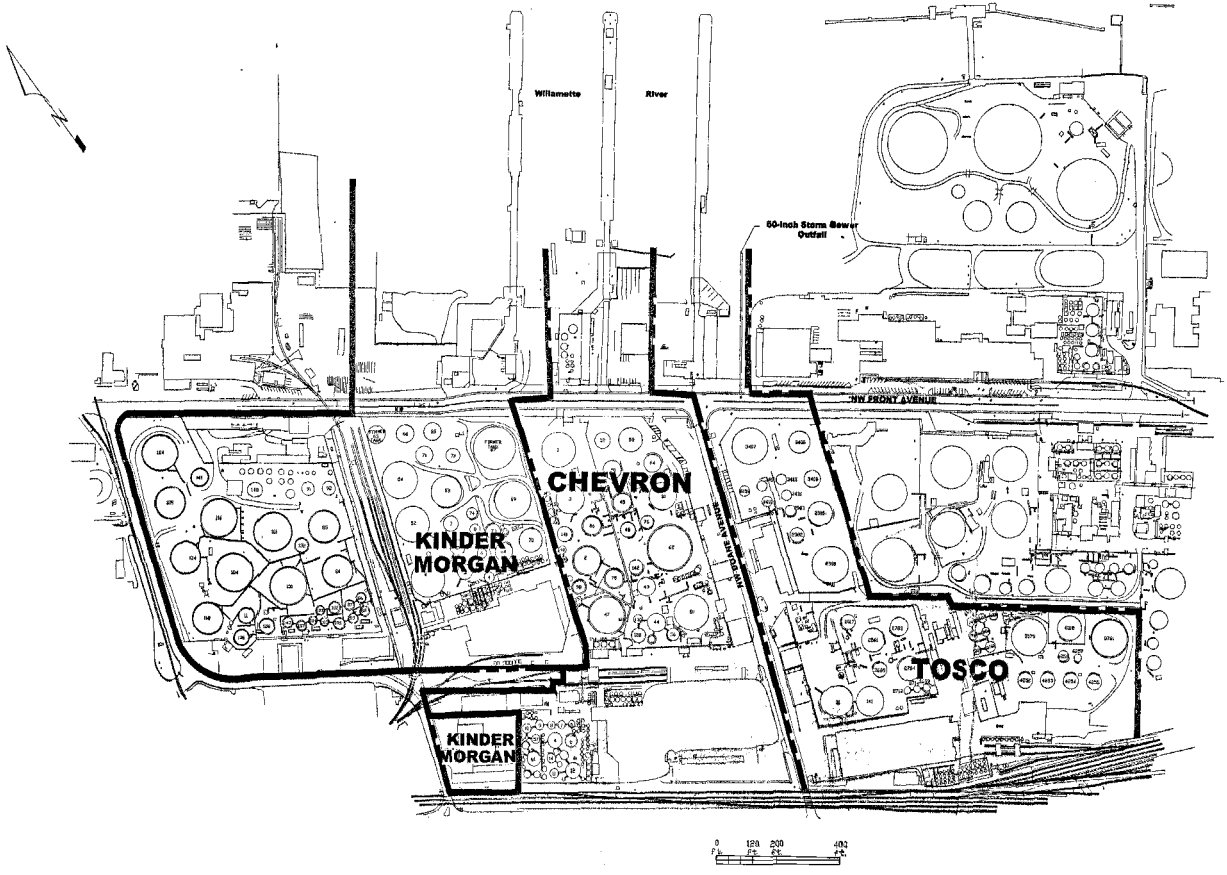
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

SITE LOCATION MAP
NW Front Ave & NW Doane

1/4 SECTION	2423
JOB NO.	7181
SHEET NO.	1 of 7

COP0019751



AS-BUILT
1-06-02
Jerry Jones

ORIGINAL DESIGN SIGNED BY:
BRAD J BERGGREN
KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
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PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
FINAL MAP DATA

DESIGNED BY | DATE APPD.
DRAWN BY | PROGRAM MGR.
CHECKED BY | CONST. MGR.
REVIEW MGR.

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman
Commissioner
Lee Kilngler, PE
BES Chief Engineer

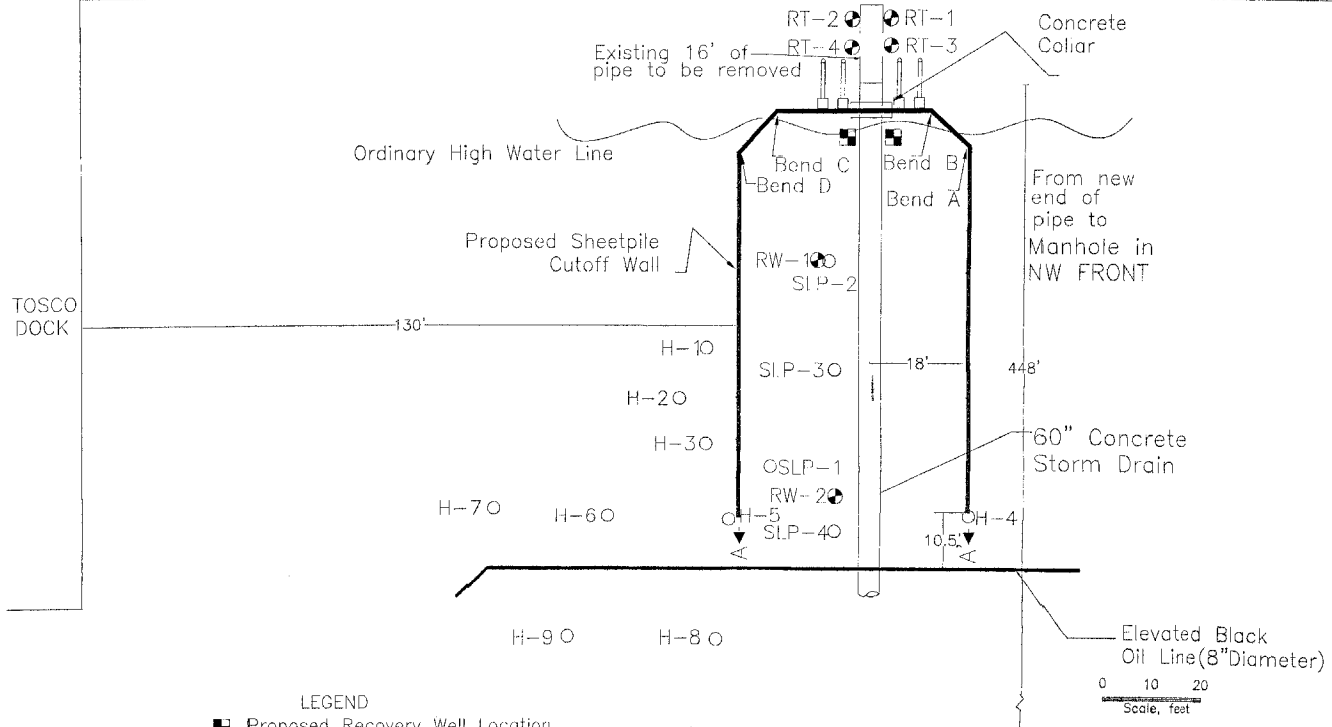
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

SITE VICINITY MAP
NW Front Ave & NW Doane

T/R/S SECTION 2423
JOB NO. 7181
SHEET NO. 2 of 7

COP0019752



LEGEND

- Proposed Recovery Well Location
- RT-2 Existing Recovery Well and Identification
- H-90 Boring Location and Identification

1. This is for information only(see note #8)
2. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures (See sewer easement)

AS-BUILT 1-06-02 Jerry Jones

ORIGINAL DESIGN SIGNED BY: BRAD J BERGREN KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
		REVISION	

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CONSTRUCTED BY TERRA HYDRA, INC.
PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
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CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman, Commissioner
Lee Kinglar, PE, BES Chief Engineer
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

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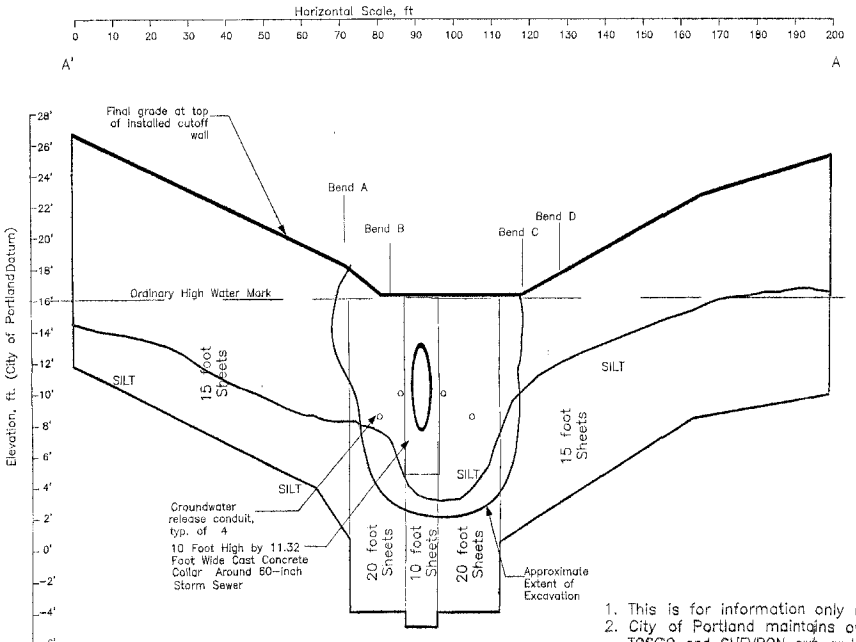
PROPOSED CUTOFF WALL PLAN VIEW

V/A SECTION 2423
JOB NO. 7181
SHEET NO. 3 of 7

COP0019753



LEGEND

- Ordinary High Water Mark
- Silt Contact
- Ground Surface Before Construction
- Limit of Sheet Piling

1. This is for information only (see note #8)
2. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer.
   TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures

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1-06-02
Jerry Jones

ORIGINAL DESIGN SIGNED BY:
BRAD J BERGREN
KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
		REVISION	

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CONSTRUCTED BY: TERRA HYDRA, INC.
PROJECT COMPLETED: 1/3/2002
MAP CORRECTED BY: K KOBOW CHECKED BY: J STIENER
FINAL MYLAR DATA

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DRAWN BY
CHECKED BY
MYLAR MADE

DATE APPD.
PROGRAM MGR.
CONST. MGR.

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman, Commissioner
Lee Kinglar, PE, BES Chief Engineer

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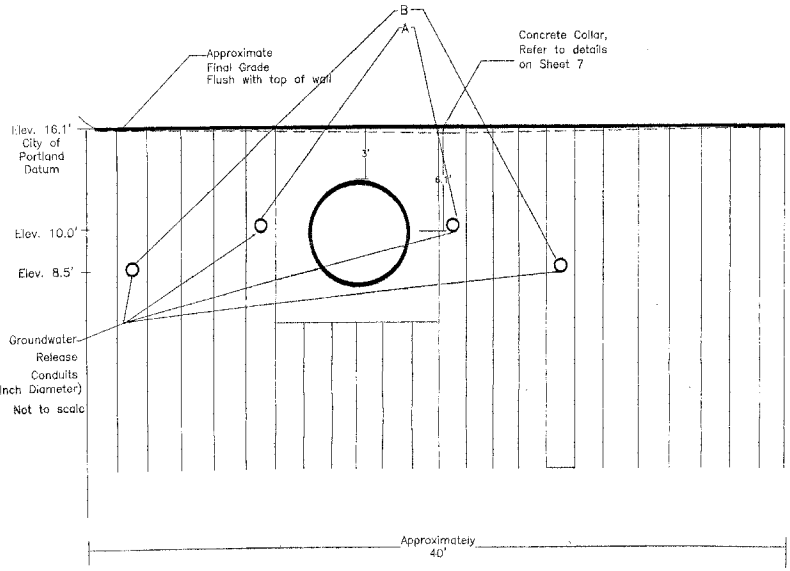
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

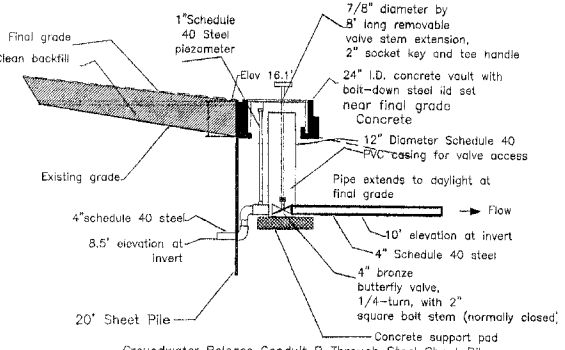
CROSS SECTION ALONG ALIGNMENT OF CUTOFF WALL

1/4 SECTION: 2423
JOB NO.: 7181
SHEET NO.: 4 of 7

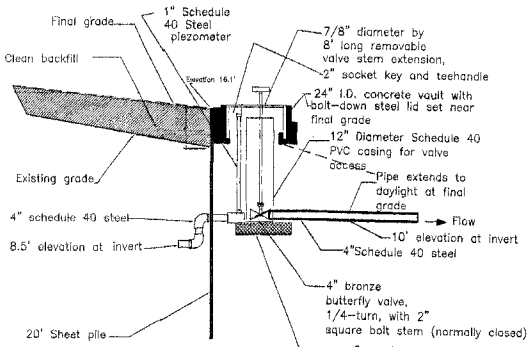
COP0019754



WIDTH OF CUTOFF WALL FACE



Groundwater Release Conduit B Through Steel Sheet Pile
Wall (not to scale)



Groundwater Release Conduit A
Wall (not to scale)

AS-BUILT
1-06-02
Jerry Jones

0 2.5 5 10
Scale, feet

1. This sheet is for information only (See note #8)
2. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures

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BRAD J BERGGREN
KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
		REVISION	

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CONSTRUCTED BY TERRA HYDRA, INC
PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
FINAL MAP DATA

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DRAWN BY | PROGRAM MGR. | CHECKED BY | CONST. MGR. | DESIGN MGR.

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman
Commissioner
Lee Klingler, PE
BES Chief Engineer

Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

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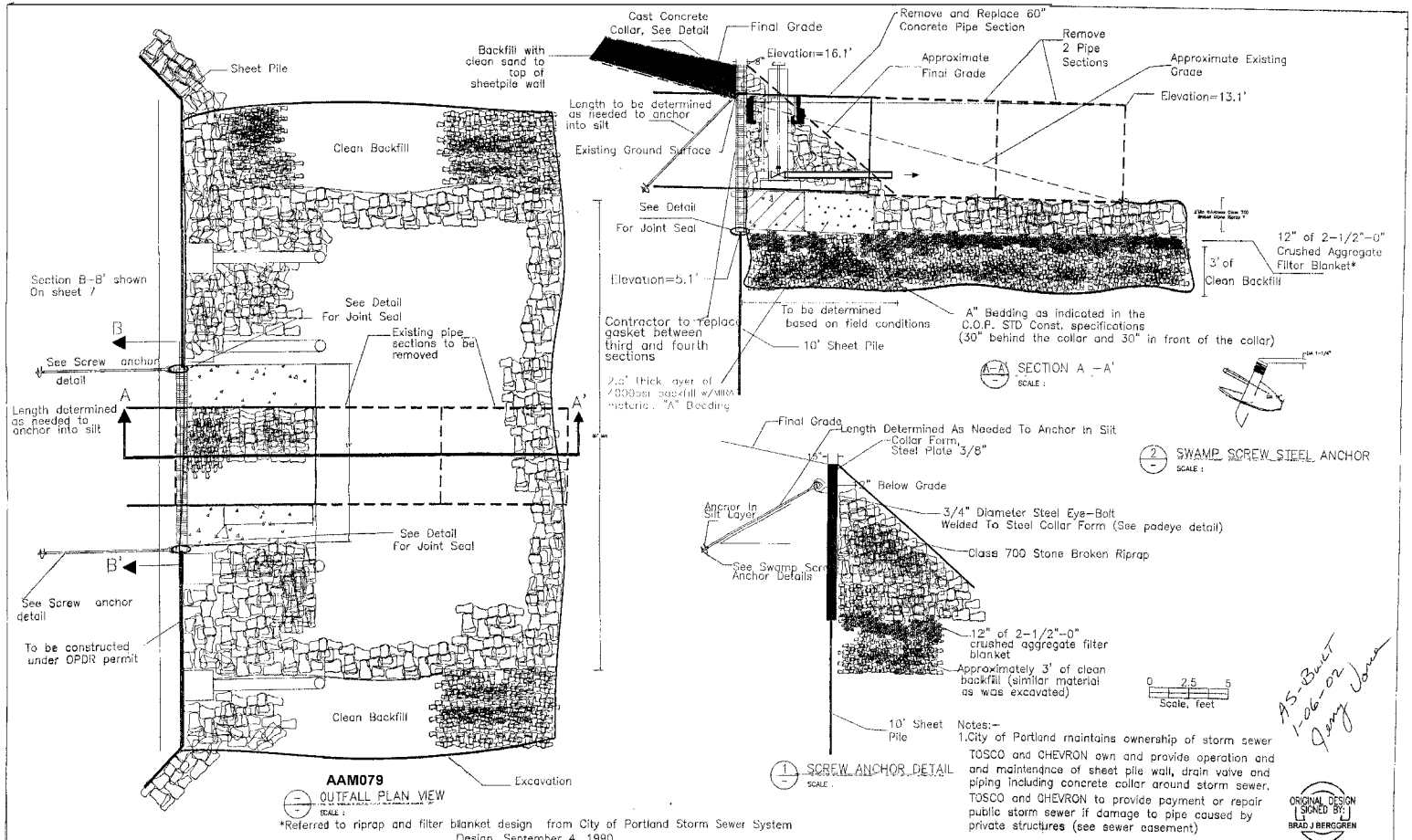
Cutoff Wall Elevation and
Groundwater Release Conduit Detail

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 5 of 7

COP0019755



Notes:-
1. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures (see sewer easement)

*Referred to riprap and filter blanket design from City of Portland Storm Sewer System Design, September 4, 1990

AS-BUILT 1-06-02 Jerry Jones

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KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
		REVISION	

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PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
FINAL MAP DATA

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DESIGN MGR

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BES Chief Engineer

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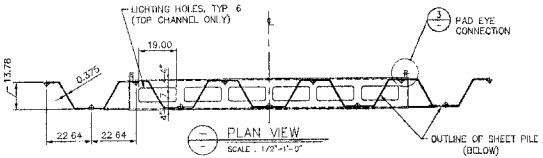
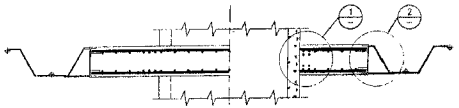
CUTOFF WALL PLAN VIEW

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 6 of 7

COP0019756



PLAN VIEW
SCALE : 1/2"=1'-0"



A-A SECTION VIEW
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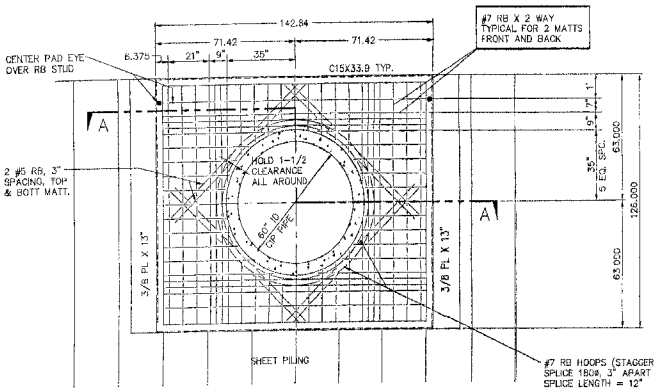

OUTSIDE ELEVATION
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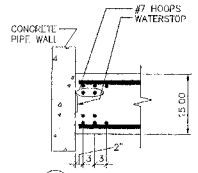

CIP ATTACHMENT
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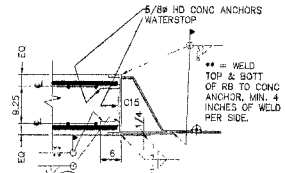

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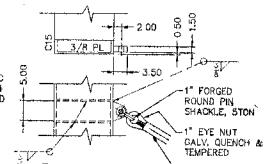

PAD EYE
SCALE : 1"=1'-0"

AS-BUILT
1-06-02
Jerry Jones

ORIGINAL DESIGN
SIGNED BY:
BRAD J BERGGREN
KHM ENVIRONMENTAL MANAGEMENT

NO	DATE	DESCRIPTION	APPD
		REVISION	

XREF(S) USED
ROTATION ANGLE
CONSTRUCTED BY TERRA HYDRA, INC
PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
FINAL MAP DATA

DESIGNED BY | DATE APPD.
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CHECKED BY | CONST. MGR.
DESIGN MGR | WPR

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Dan Saltzman
Commissioner
Lee Klingler, PE
BES Chief Engineer

Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

CONCRETE COLLAR DETAILS

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 7 of 7

COP0019757

General Standard Notes

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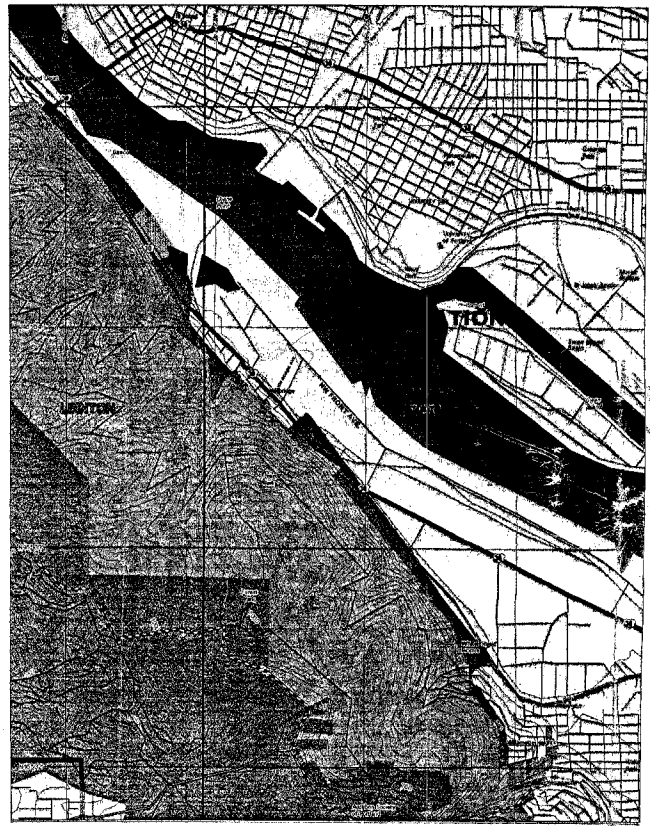
3. OFFICE OF PLANNING AND DEVELOPMENT REVIEW, APPROVALS AND PERMITS REQUIRED FOR PRIVATELY MAINTAINED STRUCTURES CONSTRUCTED. ALL WORK APPROVED UNDER OPDR PERMITS SHALL BE PRIVATELY OWNED AND MAINTAINED.
4. ATTENTION EXCAVATORS: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THOSE RULES FROM THE CENTER BY CALLING (503)232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CALL CENTER. YOU MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.
5. EXCAVATED SEWER TRENCH SPOIL MATERIAL SHALL BE DISPOSED OF AT A PROPER LANDFILL, OR APPLICANT SHALL OBTAIN A FILL PERMIT FROM THE OFFICE OF PLANNING AND DEVELOPMENT REVIEW BEFORE BEING DISPOSED OF ON-SITE. A COPY OF THE GRADING PERMIT AND PLAN SHOULD ALSO BE PROVIDED TO THE BUREAU OF ENVIRONMENTAL SERVICES FOR CONSTRUCTION INSPECTION.
6. STABILIZATION MAY BE NECESSARY AS PER CITY OF PORTLAND STANDARD CONSTRUCTION SPECIFICATIONS AND APPROVED BY BES.
7. SITE EROSION PLAN TO BE APPROVED AND CONTROLS IN PLACE PRIOR TO CONSTRUCTION. ALL WORK UNDER THIS PERMIT WILL REQUIRE SITE EROSION CONTROL IN COMPLIANCE WITH ALL PROVISIONS OF THE CITY TITLE 10.
8. THIS PERMIT IS FOR WORK ON THE PUBLIC 60" STORM SEWER WHICH INCLUDES:
   - --REMOVAL AND REPLACEMENT OF PIPE (60')
   - --INSTALLATION OF CONCRETE COLLAR AROUND 60" PIPE JOINT GAP INSPECTIONS
   - --PLACEMENT OF RIP-RAP FOR THE DISSAPATION OF FLOW FROM THE 60" PIPE AND FOR THE SUPPORT OF THE CONCRETE COLLAR.
   - --INSPECTION OF OTHER WORK TO ENSURE NO DAMAGE TO THE 60" PUBLIC STORM SEWER DURING CONSTRUCTION.



NOTE: Permit Job
Ordinance No. 130672
Exhibit "A"

AS-BUILT
1-06-02
Jerry Jones

ORIGINAL DESIGN
SIGNED BY:
BRAD J BERGREN
KHM ENVIRONMENTAL MANAGEMENT

REFERENCES

USGS 7.5 Minute Topographic Maps
Portland, Oregon-Washington
Linnton, Oregon
Delorme TopoQuads, 1999
SCALE: 1 inch = 3750 feet

NO	DATE	DESCRIPTION	APPD
		REVISION	

XREF(S) USED
ROTATION ANGLE
CONSTRUCTED BY: TERRA HYDRA, INC.
PROJECT COMPLETED: 1/3/2002
MAP CORRECTED BY: K KOBOW CHECKED BY: J STIENER
FINAL MAT DATA

DESIGNED BY
DRAWN BY
CHECKED BY
INSPECTOR

DATE APPD.
PROGRAM MGR.
CONST. MGR. WPB

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman
Commissioner
Lee Kinglar, PE
BES Chief Engineer

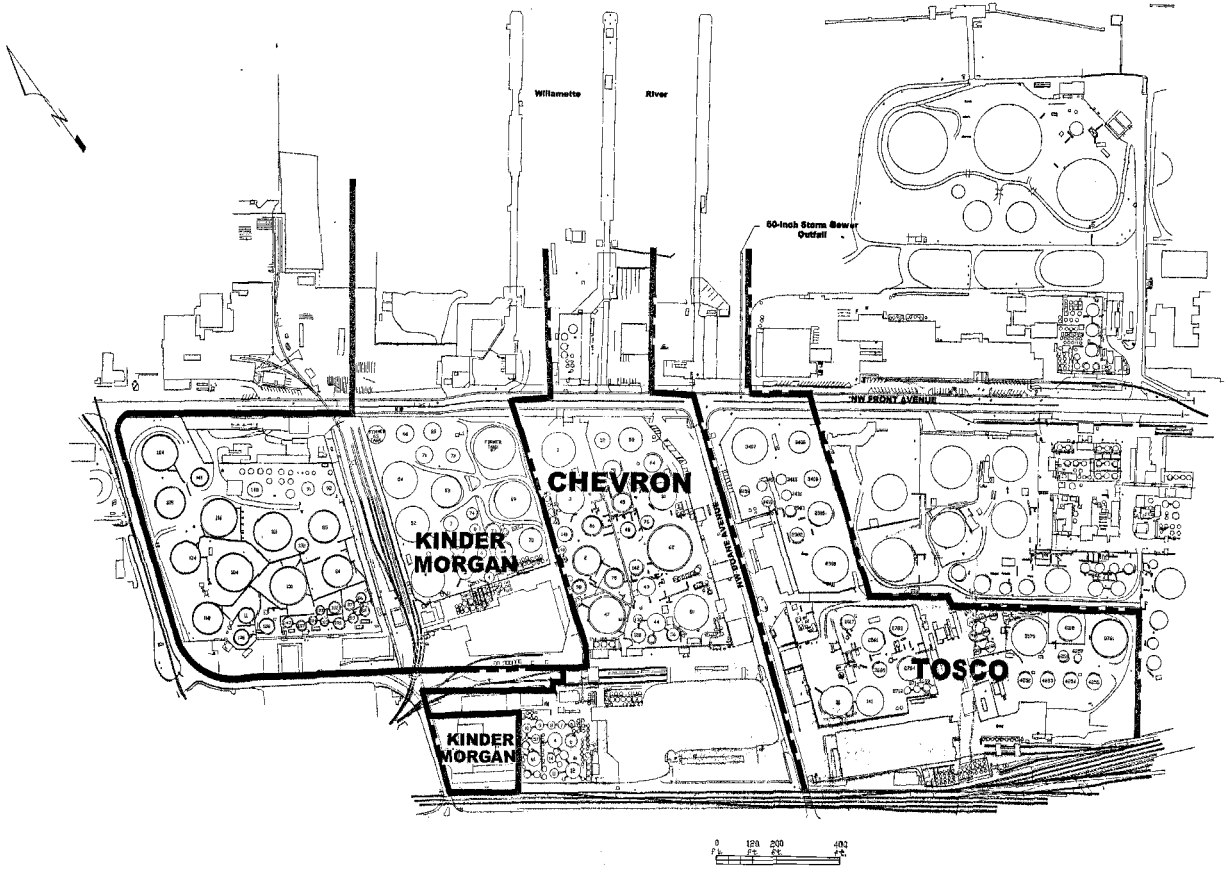
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

SITE LOCATION MAP
NW Front Ave & NW Doane

1/4 SECTION 2423
JOB NO. 7181
SHEET NO. 1 of 7

COP0019758



AS-BUILT
1-06-02
Jerry Jones

ORIGINAL DESIGN SIGNED BY:
BRAD J BERGGREN
KHM ENVIRONMENTAL MANAGEMENT

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KHM(S) USED
ROTATION ANGLE
CONSTRUCTED BY TERRA HYDRA, INC
PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
FINAL MAP DATA

DESIGNED BY | DATE APPD.
DRAWN BY | PROGRAM MGR
CHECKED BY | CONST. MGR. WPR
DESIGN MGR

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Dan Saltzman
Commissioner
Lee Klingler, PE
BES Chief Engineer

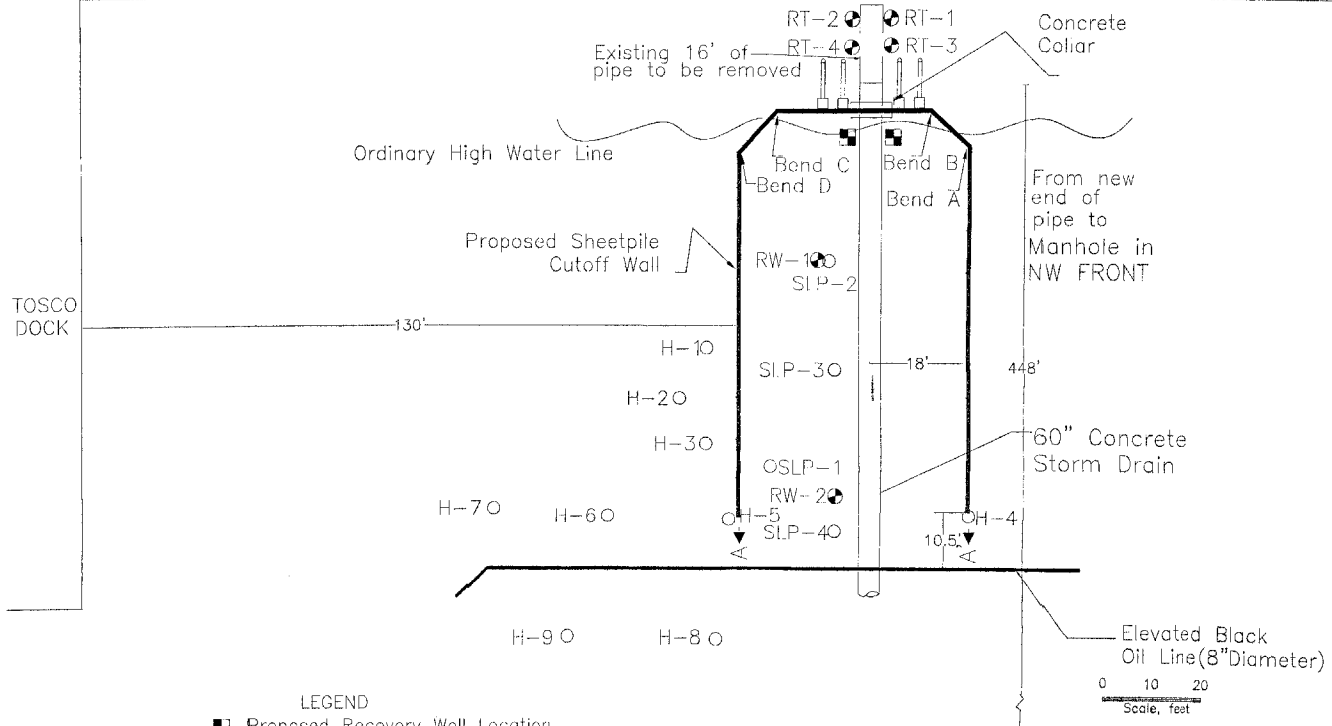
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

SITE VICINITY MAP
NW Front Ave & NW Doane

T/4 SECTION 2423
JOB NO. 7181
SHEET NO. 2 of 7

COP0019759



LEGEND

- Proposed Recovery Well Location
- RT-2 Existing Recovery Well and Identification
- H-9 Boring Location and Identification

1. This is for information only(see note #8)
2. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures (See sewer easement)

AS-Built 1-06-02 Jerry Jones

ORIGINAL DESIGN SIGNED BY: BRAD J BERGGREN
KHM ENVIRONMENTAL MANAGEMENT

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PROJECT COMPLETED 1/3/2002
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DESIGN MGR.

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Dan Saltzman
Commissioner
Lee Klingler, PE
BES Chief Engineer

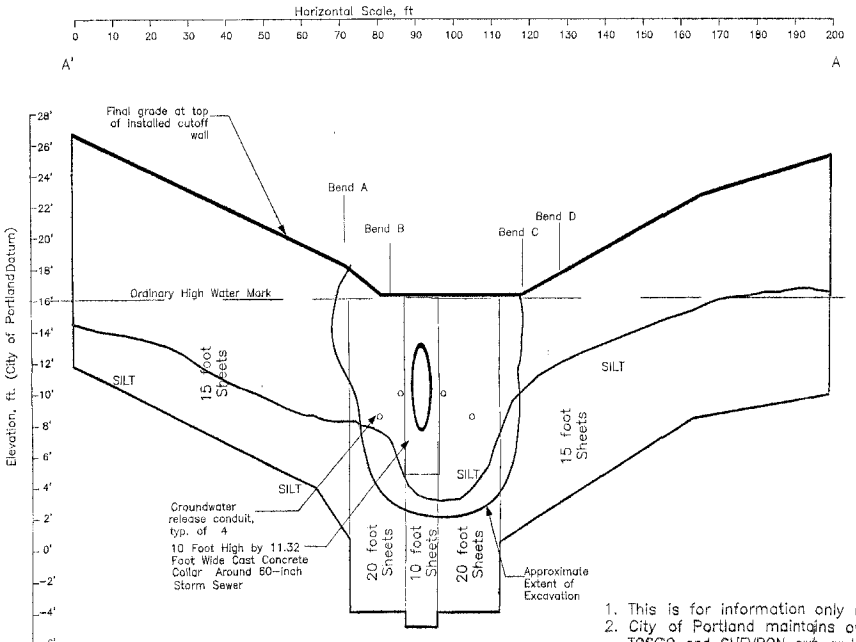
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

PROPOSED CUTOFF WALL PLAN VIEW

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 3 of 7

COP0019760



LEGEND

- Ordinary High Water Mark
- Silt Contact
- Ground Surface Before Construction
- Limit of Sheet Piling

1. This is for information only (see note #8)
2. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures

AS-BUILT 1-06-02 Jerry Jones

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KHM ENVIRONMENTAL MANAGEMENT

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PROJECT COMPLETED 1/3/2002
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FINAL MAP DATA

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CHECKED BY | CONST. MGR. WPR
DESIGN MGR

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BES Chief Engineer

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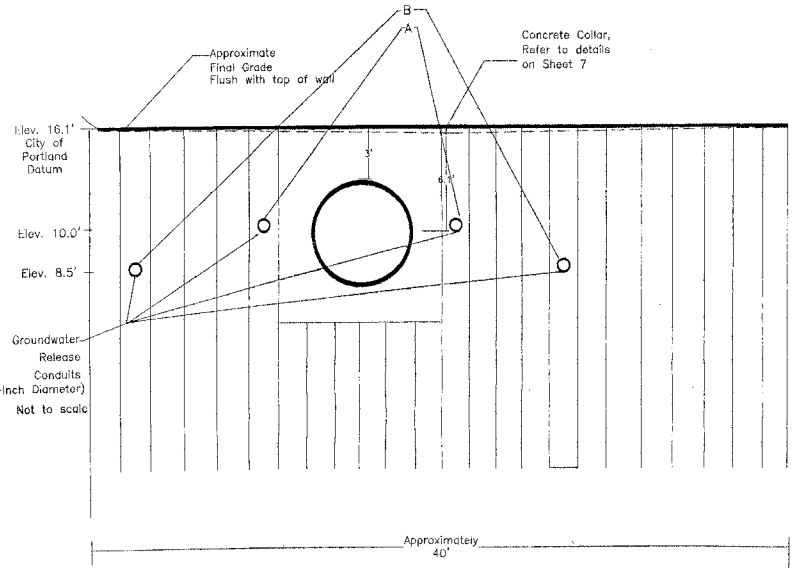
ASBUILT

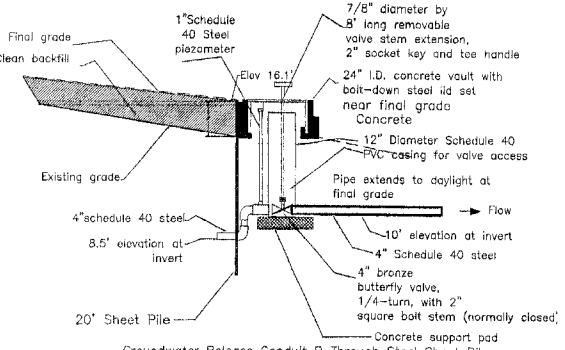
CROSS SECTION ALONG ALIGNMENT OF CUTOFF WALL

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 4 of 7

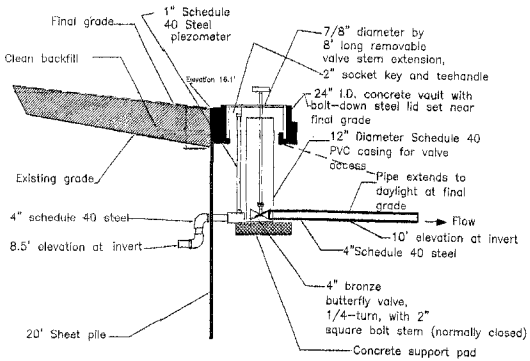
COP0019761



WIDTH OF CUTOFF WALL FACE



Groundwater Release Conduit B Through Steel Sheet Pile
Wall (not to scale)



Groundwater Release Conduit A
Wall (not to scale)

AS-BUILT
1-06-02
Jerry Jones

0 2.5 5 10
Scale, feet

1. This sheet is for information only (See note #8)
2. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures

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KHM ENVIRONMENTAL MANAGEMENT

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PROJECT COMPLETED 1/3/2002
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FINAL MAP DATA

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CHECKED BY | CONST. MGR.
DESIGN MGR

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Lee Klingler, PE
BES Chief Engineer

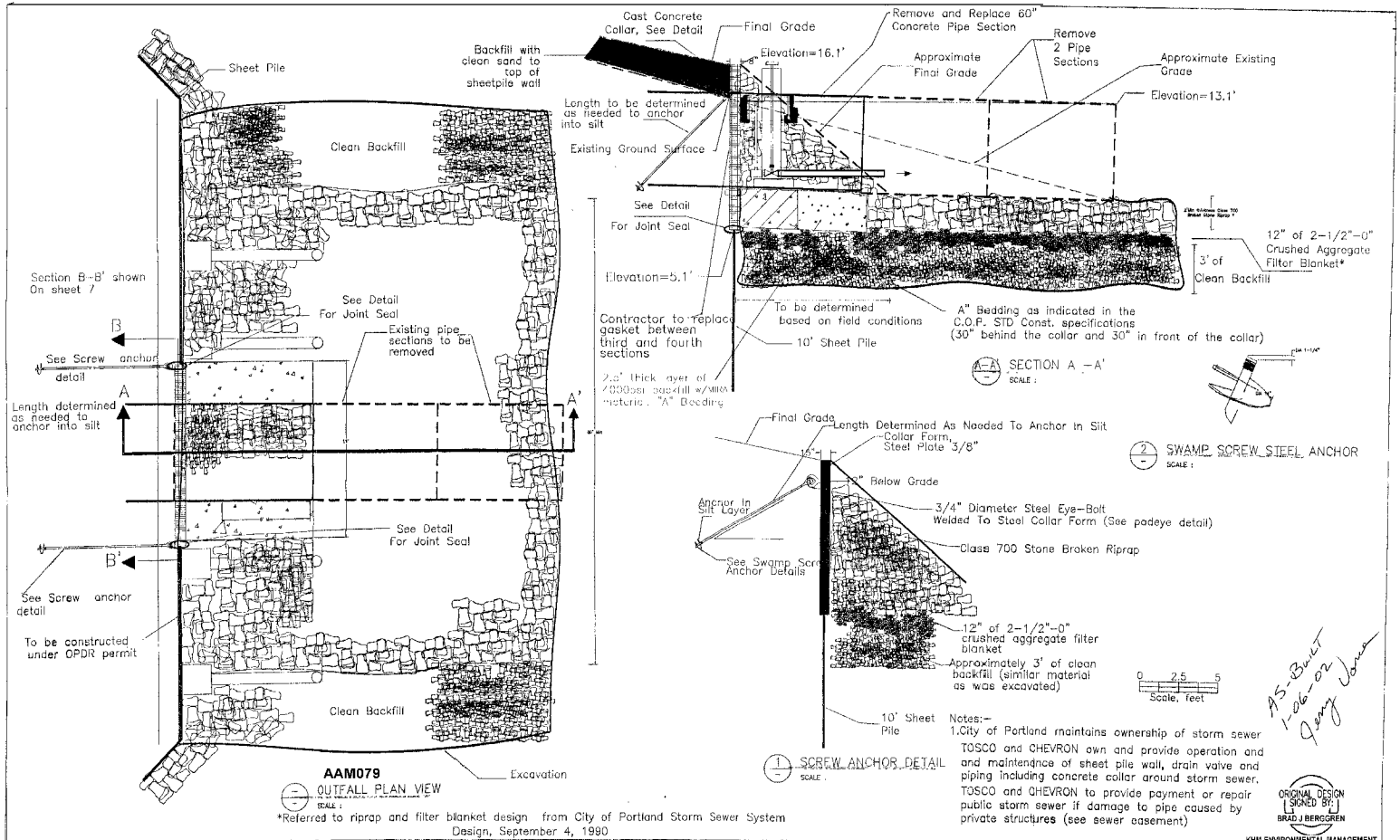
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

Cutoff Wall Elevation and
Groundwater Release Conduit Detail

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 5 of 7

COP0019762



*Referred to riprap and filter blanket design from City of Portland Storm Sewer System Design, September 4, 1990

Notes:-
1. City of Portland maintains ownership of storm sewer TOSCO and CHEVRON own and provide operation and and maintenance of sheet pile wall, drain valve and piping including concrete collar around storm sewer. TOSCO and CHEVRON to provide payment or repair public storm sewer if damage to pipe caused by private structures (see sewer easement)

AS-BUILT 1-06-02 Jerry Jones

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KHM ENVIRONMENTAL MANAGEMENT

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PROJECT COMPLETED 1/3/2002
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FINAL MAP DATA

DESIGNED BY | DATE APPD.
DRAWN BY | PROGRAM MGR
CHECKED BY | CONST. MGR
DESIGN MGR | WPR

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ENVIRONMENTAL SERVICES
Dan Saltzman
Commissioner
Lee Klingler, PE
BES Chief Engineer

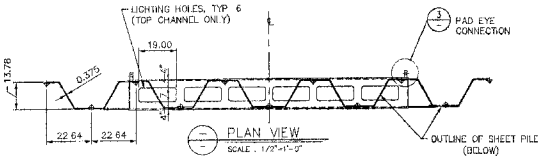
Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

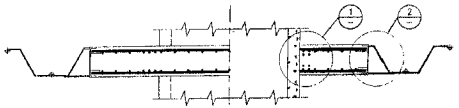
CUTOFF WALL PLAN VIEW

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 6 of 7

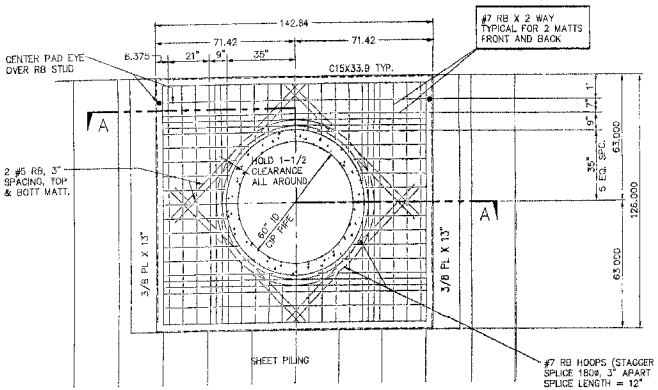
COP0019763



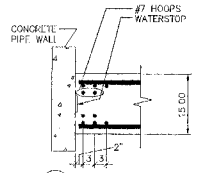
PLAN VIEW
SCALE : 1/2"=1'-0"



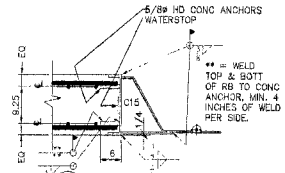
A-A SECTION VIEW
SCALE : 1/2"=1'-0"



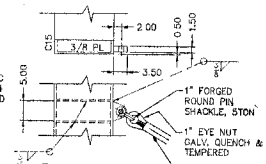
OUTSIDE ELEVATION
SCALE : 1/2"=1'-0"



1 CIP ATTACHMENT
SCALE : 1"=1'-0"



2 CHANNEL ATTACHMNT
SCALE : 1"=1'-0"



3 PAD EYE
SCALE : 1"=1'-0"

AS-BUILT
1-06-02
Jerry Jones

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BRAD J BERGGREN
KHM ENVIRONMENTAL MANAGEMENT

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XREF(S) USED
ROTATION ANGLE
CONSTRUCTED BY TERRA HYDRA, INC
PROJECT COMPLETED 1/3/2002
MAP CORRECTED BY K KOBOW CHECKED BY J STIENER
FINAL MAP DATA

DESIGNED BY | DATE APPD.
DRAWN BY | PROGRAM MGR
CHECKED BY | CONST. MGR.
DESIGN MGR | WPR

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Dan Saltzman
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Lee Klingler, PE
BES Chief Engineer

Approvals
Engineering Services Chief Engineer
Reg. Prof. Engr. No. 9327

ASBUILT

CONCRETE COLLAR DETAILS

T/A SECTION 2423
JOB NO. 7181
SHEET NO. 7 of 7

COP0019764

From: Edmund, Bill
Sent: Thursday, February 04, 2010 07:23 PM
To: Smith, Myron - Environmental:
CC: Carlton-Franco, Chris
Subject: FW: RM&R site 922 - Portland Terminal - Soil Lab Results for Bins associated with Asphalt Area 2 Excavation
Attachments: 252856_EDD.xls; 252856_fr.pdf

Myron:

After further discussion between Stantec and the terminal. Chris will fill out the forms for you to sign and then Stantec will set up with Steve Adams at the terminal for his paperwork. Thank you.

William C. Edmund, P.G., R.G., R.E.A. I
Managing Principal Geologist
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 131
Fx: (503) 692-7074
Cell: (503) 510-6024
bill.edmund@stantec.com
stantec.com <http://www.stantec.com/>

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From: Edmund, Bill
Sent: Wednesday, February 03, 2010 10:24 AM
To: Smith, Myron - Environmental:
Cc: Carlton-Franco, Chris
Subject: RM&R site 922 - Portland Terminal - Soil Lab Results for Bins associated with Asphalt Area 2 Excavation

Attached are the soil disposal lab results for the Asphalt Area 2 "excavated soils". There were 4 bins onsite. I reviewed the data and they can be permitted for disposal as non-haz for the Hillsboro Landfill. Chris Carlton Franco can fill out the paperwork for the landfill to process and the manifests for your signature.

William C. Edmund, P.G., R.G., R.E.A. I
Managing Principal Geologist
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 131
Fx: (503) 692-7074
Cell: (503) 510-6024
bill.edmund@stantec.com
stantec.com <http://www.stantec.com/>

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From: Jennifer Gross [mailto:Jennifer.Gross@pacelabs.com]
Sent: Wednesday, February 03, 2010 9:55 AM
To: Edmund, Bill; Carlton-Franco, Chris
Cc: Lisa Domenighini
Subject: 00922; 252856 Merged Report!

Hi Bill & Chris,

Attached is the merged report, the results have not changed from yesterdays final reports. Let me know if you have any questions!

Thanks,
Jenni

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	A	B	C	D	E	F	G	H	I	J	K	L
1	CLIENT	PROJECT	PROJECT	LABNAME	SAMPLEN	LABSAMP	MATRIX	RPTMATR	SAMPDAT	PREPDAT	ANADATE	BATCH
2	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
3	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
4	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
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6	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/20/2010	1/25/2010 :	5645
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10	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
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35	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
36	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
37	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
38	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	2/1/2010 0-	2/1/2010 0-	147781
39	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
40	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
41	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
42	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
43	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
44	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
45	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
46	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
47	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
48	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/20/2010	1/25/2010 :	5645
49	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010 (	1/22/2010	5615
50	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
51	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
52	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
53	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
54	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
55	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
56	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
57	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
58	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
59	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
60	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
61	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
62	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
63	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
64	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590

	A	B	C	D	E	F	G	H	I	J	K	L
65	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
66	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
67	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
68	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	2/1/2010 0	2/1/2010 0	147781
69	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
70	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
71	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
72	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
73	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
74	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
75	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
76	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
77	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
78	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/20/2010	1/26/2010 (	5645
79	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010 (	1/22/2010	5615
80	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
81	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
82	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
83	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
84	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
85	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
86	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
87	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
88	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
89	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
90	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
91	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
92	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
93	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
94	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
95	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
96	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
97	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
98	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	2/1/2010 0	2/1/2010 0	147781
99	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
100	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
101	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
102	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
103	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
104	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/25/2010	1/25/2010	5646
105	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685
106	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685
107	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685
108	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685

	M	N	O	P	Q	R	S	T	U	V	W	X
1	METHODC	METHODN	PREPNAM	ANALYTE	CASNUME	SURROGA	TIC	RESULT	DL	RL	UNITS	RPToMDL
2	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	13.0	3.5	22.3	mg/kg	FALSE
3	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	52.7	24	89.2	mg/kg	FALSE
4	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	108			%	FALSE
5	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	104			%	FALSE
6	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	0.98	0.24	6.1	mg/kg	FALSE
7	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
8	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
9	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.17	3.4	ug/kg	FALSE
10	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.58	0.43	3.4	ug/kg	FALSE
11	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	ND	0.35	3.4	ug/kg	FALSE
12	8260S503(	EPA 8260	EPA 8260	Xylene (To	1330-20-7	FALSE	FALSE	ND	0.84	6.8	ug/kg	FALSE
13		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	12.1	0.1	0.10	%	FALSE
14	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	209	3.3	20.9	mg/kg	FALSE
15	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	1710	22.5	83.6	mg/kg	FALSE
16	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	100			%	FALSE
17	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	100			%	FALSE
18	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	11.8	0.24	6.1	mg/kg	FALSE
19	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
20	8270 SJ	EPA 8270	EPA 3546	1-Methylna	90-12-0	FALSE	FALSE	0.031	0.0096	0.073	mg/kg	FALSE
21	8270 SJ	EPA 8270	EPA 3546	2-Methylna	91-57-6	FALSE	FALSE	0.073	0.02	0.073	mg/kg	FALSE
22	8270 SJ	EPA 8270	EPA 3546	Acenaphth	83-32-9	FALSE	FALSE	ND	0.017	0.073	mg/kg	FALSE
23	8270 SJ	EPA 8270	EPA 3546	Acenaphth	208-96-8	FALSE	FALSE	0.0039	0.0025	0.073	mg/kg	FALSE
24	8270 SJ	EPA 8270	EPA 3546	Anthracene	120-12-7	FALSE	FALSE	0.020	0.0041	0.073	mg/kg	FALSE
25	8270 SJ	EPA 8270	EPA 3546	Benzo(a)ar	56-55-3	FALSE	FALSE	0.040	0.0012	0.073	mg/kg	FALSE
26	8270 SJ	EPA 8270	EPA 3546	Benzo(a)py	50-32-8	FALSE	FALSE	0.059	0.0017	0.073	mg/kg	FALSE
27	8270 SJ	EPA 8270	EPA 3546	Benzo(b)flu	205-99-2	FALSE	FALSE	0.044	0.0073	0.073	mg/kg	FALSE
28	8270 SJ	EPA 8270	EPA 3546	Benzo(g,h,	191-24-2	FALSE	FALSE	0.082	0.0032	0.073	mg/kg	FALSE
29	8270 SJ	EPA 8270	EPA 3546	Benzo(k)flu	207-08-9	FALSE	FALSE	0.029	0.0052	0.073	mg/kg	FALSE
30	8270 SJ	EPA 8270	EPA 3546	Chrysene	218-01-9	FALSE	FALSE	0.13	0.0034	0.073	mg/kg	FALSE
31	8270 SJ	EPA 8270	EPA 3546	Dibenz(a,h	53-70-3	FALSE	FALSE	0.027	0.003	0.073	mg/kg	FALSE
32	8270 SJ	EPA 8270	EPA 3546	Fluoranther	206-44-0	FALSE	FALSE	0.043	0.0085	0.073	mg/kg	FALSE
33	8270 SJ	EPA 8270	EPA 3546	Fluorene	86-73-7	FALSE	FALSE	ND	0.02	0.073	mg/kg	FALSE
34	8270 SJ	EPA 8270	EPA 3546	Indeno(1,2	193-39-5	FALSE	FALSE	0.024	0.0027	0.073	mg/kg	FALSE
35	8270 SJ	EPA 8270	EPA 3546	Naphthaler	91-20-3	FALSE	FALSE	0.029	0.019	0.073	mg/kg	FALSE
36	8270 SJ	EPA 8270	EPA 3546	Phenanthre	85-01-8	FALSE	FALSE	0.046	0.034	0.073	mg/kg	FALSE
37	8270 SJ	EPA 8270	EPA 3546	Pyrene	129-00-0	FALSE	FALSE	0.18	0.0032	0.073	mg/kg	FALSE
38	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
39	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.14	2.9	ug/kg	FALSE
40	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.70	0.37	2.9	ug/kg	FALSE
41	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	ND	0.3	2.9	ug/kg	FALSE
42	8260S503(	EPA 8260	EPA 8260	Xylene (To	1330-20-7	FALSE	FALSE	9.7	0.72	5.8	ug/kg	FALSE
43		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	10.1	0.1	0.10	%	FALSE
44	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	412	3.3	21.0	mg/kg	FALSE
45	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	895	22.6	84.0	mg/kg	FALSE
46	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	122			%	FALSE
47	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	80			%	FALSE
48	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	16.8	0.23	5.7	mg/kg	FALSE
49	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
50	8270 SJ	EPA 8270	EPA 3546	1-Methylna	90-12-0	FALSE	FALSE	0.013	0.0048	0.036	mg/kg	FALSE
51	8270 SJ	EPA 8270	EPA 3546	2-Methylna	91-57-6	FALSE	FALSE	0.029	0.0099	0.036	mg/kg	FALSE
52	8270 SJ	EPA 8270	EPA 3546	Acenaphth	83-32-9	FALSE	FALSE	0.024	0.0084	0.036	mg/kg	FALSE
53	8270 SJ	EPA 8270	EPA 3546	Acenaphth	208-96-8	FALSE	FALSE	0.013	0.0012	0.036	mg/kg	FALSE
54	8270 SJ	EPA 8270	EPA 3546	Anthracene	120-12-7	FALSE	FALSE	0.059	0.002	0.036	mg/kg	FALSE
55	8270 SJ	EPA 8270	EPA 3546	Benzo(a)ar	56-55-3	FALSE	FALSE	0.079	0.00058	0.036	mg/kg	FALSE
56	8270 SJ	EPA 8270	EPA 3546	Benzo(a)py	50-32-8	FALSE	FALSE	0.072	0.00087	0.036	mg/kg	FALSE
57	8270 SJ	EPA 8270	EPA 3546	Benzo(b)flu	205-99-2	FALSE	FALSE	0.056	0.0036	0.036	mg/kg	FALSE
58	8270 SJ	EPA 8270	EPA 3546	Benzo(g,h,	191-24-2	FALSE	FALSE	0.11	0.0016	0.036	mg/kg	FALSE
59	8270 SJ	EPA 8270	EPA 3546	Benzo(k)flu	207-08-9	FALSE	FALSE	0.024	0.0026	0.036	mg/kg	FALSE
60	8270 SJ	EPA 8270	EPA 3546	Chrysene	218-01-9	FALSE	FALSE	0.19	0.0017	0.036	mg/kg	FALSE
61	8270 SJ	EPA 8270	EPA 3546	Dibenz(a,h	53-70-3	FALSE	FALSE	0.029	0.0015	0.036	mg/kg	FALSE
62	8270 SJ	EPA 8270	EPA 3546	Fluoranther	206-44-0	FALSE	FALSE	0.075	0.0043	0.036	mg/kg	FALSE
63	8270 SJ	EPA 8270	EPA 3546	Fluorene	86-73-7	FALSE	FALSE	0.027	0.0098	0.036	mg/kg	FALSE
64	8270 SJ	EPA 8270	EPA 3546	Indeno(1,2	193-39-5	FALSE	FALSE	0.052	0.0014	0.036	mg/kg	FALSE

	M	N	O	P	Q	R	S	T	U	V	W	X
65	8270 SJ	EPA 8270	EPA 3546	Naphthaler	91-20-3	FALSE	FALSE	0.022	0.0097	0.036	mg/kg	FALSE
66	8270 SJ	EPA 8270	EPA 3546	Phenanthre	85-01-8	FALSE	FALSE	0.058	0.017	0.036	mg/kg	FALSE
67	8270 SJ	EPA 8270	EPA 3546	Pyrene	129-00-0	FALSE	FALSE	0.26	0.0016	0.036	mg/kg	FALSE
68	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
69	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.16	3.2	ug/kg	FALSE
70	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.58	0.41	3.2	ug/kg	FALSE
71	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	0.43	0.33	3.2	ug/kg	FALSE
72	8260S503(	EPA 8260	EPA 8260	Xylene (Tot	1330-20-7	FALSE	FALSE	7.6	0.8	6.4	ug/kg	FALSE
73		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	9.6	0.1	0.10	%	FALSE
74	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	31.8	3.4	21.5	mg/kg	FALSE
75	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	119	23.1	85.8	mg/kg	FALSE
76	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	108			%	FALSE
77	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	108			%	FALSE
78	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	3.8	0.24	6.0	mg/kg	FALSE
79	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
80	8270 SJ	EPA 8270	EPA 3546	1-Methylna	90-12-0	FALSE	FALSE	0.016	0.00099	0.0075	mg/kg	FALSE
81	8270 SJ	EPA 8270	EPA 3546	2-Methylna	91-57-6	FALSE	FALSE	0.030	0.002	0.0075	mg/kg	FALSE
82	8270 SJ	EPA 8270	EPA 3546	Acenaphth	83-32-9	FALSE	FALSE	ND	0.0017	0.0075	mg/kg	FALSE
83	8270 SJ	EPA 8270	EPA 3546	Acenaphth	208-96-8	FALSE	FALSE	0.0020	0.00025	0.0075	mg/kg	FALSE
84	8270 SJ	EPA 8270	EPA 3546	Anthracene	120-12-7	FALSE	FALSE	0.0050	0.00042	0.0075	mg/kg	FALSE
85	8270 SJ	EPA 8270	EPA 3546	Benzo(a)ar	56-55-3	FALSE	FALSE	0.016	0.00012	0.0075	mg/kg	FALSE
86	8270 SJ	EPA 8270	EPA 3546	Benzo(a)py	50-32-8	FALSE	FALSE	0.015	0.00018	0.0075	mg/kg	FALSE
87	8270 SJ	EPA 8270	EPA 3546	Benzo(b)flu	205-99-2	FALSE	FALSE	0.011	0.00075	0.0075	mg/kg	FALSE
88	8270 SJ	EPA 8270	EPA 3546	Benzo(g,h,	191-24-2	FALSE	FALSE	0.019	0.00033	0.0075	mg/kg	FALSE
89	8270 SJ	EPA 8270	EPA 3546	Benzo(k)flu	207-08-9	FALSE	FALSE	0.0086	0.00054	0.0075	mg/kg	FALSE
90	8270 SJ	EPA 8270	EPA 3546	Chrysene	218-01-9	FALSE	FALSE	0.021	0.00035	0.0075	mg/kg	FALSE
91	8270 SJ	EPA 8270	EPA 3546	Dibenz(a,h	53-70-3	FALSE	FALSE	0.0036	0.00031	0.0075	mg/kg	FALSE
92	8270 SJ	EPA 8270	EPA 3546	Fluoranthe	206-44-0	FALSE	FALSE	0.015	0.00087	0.0075	mg/kg	FALSE
93	8270 SJ	EPA 8270	EPA 3546	Fluorene	86-73-7	FALSE	FALSE	0.0021	0.002	0.0075	mg/kg	FALSE
94	8270 SJ	EPA 8270	EPA 3546	Indeno(1,2	193-39-5	FALSE	FALSE	0.010	0.00028	0.0075	mg/kg	FALSE
95	8270 SJ	EPA 8270	EPA 3546	Naphthaler	91-20-3	FALSE	FALSE	0.017	0.002	0.0075	mg/kg	FALSE
96	8270 SJ	EPA 8270	EPA 3546	Phenanthre	85-01-8	FALSE	FALSE	0.011	0.0035	0.0075	mg/kg	FALSE
97	8270 SJ	EPA 8270	EPA 3546	Pyrene	129-00-0	FALSE	FALSE	0.030	0.00033	0.0075	mg/kg	FALSE
98	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
99	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.16	3.2	ug/kg	FALSE
100	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.42	0.4	3.2	ug/kg	FALSE
101	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	ND	0.33	3.2	ug/kg	FALSE
102	8260S503(	EPA 8260	EPA 8260	Xylene (Tot	1330-20-7	FALSE	FALSE	7.4	0.8	6.4	ug/kg	FALSE
103		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	11.7	0.1	0.10	%	FALSE
104	NWGROV	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	ND	13.4	50.0	ug/L	FALSE
105	8260 W10I	EPA 8260	EPA 5030E	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE
106	8260 W10I	EPA 8260	EPA 5030E	Ethylbenze	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE
107	8260 W10I	EPA 8260	EPA 5030E	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE
108	8260 W10I	EPA 8260	EPA 5030E	Xylene (Tot	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE

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4	Dry	1					DMT	87.9				
5	Dry	1					DMT	87.9				
6	Dry	1					LPM	87.9	J	5n, Z2		
7	Dry	1					BGA	87.9	U			
8	Wet	1					BAG	87.9	U			
9	Dry	1					LPM	87.9	U			
10	Dry	1					LPM	87.9	J			
11	Dry	1					LPM	87.9	U			
12	Dry	1					LPM	87.9	U			
13	Dry	1					DJK	87.9				
14	Dry	1					DMT	89.9				
15	Dry	1					DMT	89.9				
16	Dry	1					DMT	89.9				
17	Dry	1					DMT	89.9				
18	Dry	1					LPM	89.9		Z2		
19	Dry	1					BGA	89.9	U			
20	Dry	1					DMT	89.9	J			
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25	Dry	1					DMT	89.9	J			
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27	Dry	1					DMT	89.9	J			
28	Dry	1					DMT	89.9				
29	Dry	1					DMT	89.9	J			
30	Dry	1					DMT	89.9				
31	Dry	1					DMT	89.9	J			
32	Dry	1					DMT	89.9	J			
33	Dry	1					DMT	89.9	U			
34	Dry	1					DMT	89.9	J			
35	Dry	1					DMT	89.9	J	P3		
36	Dry	1					DMT	89.9	J			
37	Dry	1					DMT	89.9				
38	Wet	1					BAG	89.9	U			
39	Dry	1					LPM	89.9	U			
40	Dry	1					LPM	89.9	J			
41	Dry	1					LPM	89.9	U			
42	Dry	1					LPM	89.9				
43	Dry	1					DJK	89.9				
44	Dry	1					DMT	90.4				
45	Dry	1					DMT	90.4				
46	Dry	1					DMT	90.4				
47	Dry	1					DMT	90.4				
48	Dry	1					LPM	90.4		Z2		
49	Dry	1					BGA	90.4	U			
50	Dry	5					DMT	90.4	J			
51	Dry	5					DMT	90.4	J			
52	Dry	5					DMT	90.4	J			
53	Dry	5					DMT	90.4	J			
54	Dry	5					DMT	90.4				
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56	Dry	5					DMT	90.4				
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58	Dry	5					DMT	90.4				
59	Dry	5					DMT	90.4	J			
60	Dry	5					DMT	90.4				
61	Dry	5					DMT	90.4	J			
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63	Dry	5					DMT	90.4	J			
64	Dry	5					DMT	90.4				

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67	Dry	5					DMT	90.4				
68	Wet	1					BAG	90.4	U			
69	Dry	1					LPM	90.4	U			
70	Dry	1					LPM	90.4	J	M0		
71	Dry	1					LPM	90.4	J	M0, Z2		
72	Dry	1					LPM	90.4		M0		
73	Dry	1					DJK	90.4				
74	Dry	1					DMT	88.3				
75	Dry	1					DMT	88.3				
76	Dry	1					DMT	88.3				
77	Dry	1					DMT	88.3				
78	Dry	1					LPM	88.3	J	5n, Z2		
79	Dry	1					BGA	88.3	U			
80	Dry	1					DMT	88.3				
81	Dry	1					DMT	88.3				
82	Dry	1					DMT	88.3	U			
83	Dry	1					DMT	88.3	J			
84	Dry	1					DMT	88.3	J			
85	Dry	1					DMT	88.3				
86	Dry	1					DMT	88.3				
87	Dry	1					DMT	88.3				
88	Dry	1					DMT	88.3				
89	Dry	1					DMT	88.3				
90	Dry	1					DMT	88.3				
91	Dry	1					DMT	88.3	J			
92	Dry	1					DMT	88.3				
93	Dry	1					DMT	88.3	J			
94	Dry	1					DMT	88.3				
95	Dry	1					DMT	88.3				
96	Dry	1					DMT	88.3				
97	Dry	1					DMT	88.3				
98	Wet	1					BAG	88.3	U			
99	Dry	1					LPM	88.3	U			
100	Dry	1					LPM	88.3	J			
101	Dry	1					LPM	88.3	U			
102	Dry	1					LPM	88.3				
103	Dry	1					DJK	88.3				
104	Wet	1					LPM		U	5n		
105	Wet	1					LPM		U			
106	Wet	1					LPM		U			
107	Wet	1					LPM		U			
108	Wet	1					LPM		U			

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Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

February 03, 2010

Bill Edmund
COP_Stantec Washington
12034 134th CT
Redmond, WA 98052

RE: Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Dear Bill Edmund:
Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross

jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Chris Carlton-Franco, Stantec
Janet Nash, Stantec

REPORT OF LABORATORY ANALYSIS

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Seattle, WA 98108
(206)767-5060

CERTIFICATIONS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Washington Certification IDs
Florida/NELAP Certification #: E87617
Oregon Certification #: WA200007
Washington Certification #: C1229
940 South Harney Street Seattle, WA 98108
Alaska CS Certification #: UST-025
Alaska Drinking Water VOC Certification #: WA01-09
Alaska Drinking Water Micro Certification #: WA01230
California Certification #: 01153CA

Kansas Certification IDs
Kansas/NELAP Certification #: E-10116
Iowa Certification #: 118
Illinois Certification #: 001191
Arkansas Certification #: 05-008-0
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Oregon Certification #: KS200001
Texas Certification #: T104704407-08-TX
A2LA Certification #: 2456.01
Washington Certification #: C2069
9608 Loiret Boulevard Lenexa, KS 66219
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Lab ID	Sample ID	Matrix	Date Collected	Date Received
252856001	**BIN 178 (922)**	Solid	01/18/10 08:40	01/20/10 08:00
252856002	**BIN 158 (922)**	Solid	01/18/10 08:50	01/20/10 08:00
252856003	**BIN 181 (922)**	Solid	01/18/10 09:00	01/20/10 08:00
252856004	**BIN 193 (922)**	Solid	01/18/10 09:10	01/20/10 08:00
252856005	**TB-1 (922)**	Water	01/18/10 00:00	01/20/10 08:00

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SAMPLE ANALYTE COUNT

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
252856001	**BIN 178 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856002	**BIN 158 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8270 by SIM	DMT	21	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856003	**BIN 181 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8270 by SIM	DMT	21	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856004	**BIN 193 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8270 by SIM	DMT	21	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856005	**TB-1 (922)**	NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S

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Seattle, WA 98108
(206)767-5060

ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 178 (922) **Lab ID: 252856001** Collected: 01/18/10 08:40 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**13.0J**	mg/kg	22.3	3.5	1	01/22/10 17:45	01/23/10 22:47		J
Motor Oil Range SG	**52.7J**	mg/kg	89.2	24.0	1	01/22/10 17:45	01/23/10 22:47	64742-65-0	J
n-Octacosane (S) SG	108	%	50-150		1	01/22/10 17:45	01/23/10 22:47	630-02-4	
o-Terphenyl (S) SG	104	%	50-150		1	01/22/10 17:45	01/23/10 22:47	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**0.98J**	mg/kg	6.1	0.24	1	01/20/10 17:00	01/25/10 22:01		5n,Z2
a,a,a-Trifluorotoluene (S)	99	%	50-150		1	01/20/10 17:00	01/25/10 22:01	98-08-8	
4-Bromofluorobenzene (S)	97	%	50-150		1	01/20/10 17:00	01/25/10 22:01	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:26	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 04:33	71-43-2	
1,2-Dichloroethane-d4 (S)	98	%	81-121		1		02/01/10 04:33	17060-07-0	
Toluene-d8 (S)	98	%	89-111		1		02/01/10 04:33	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-115		1		02/01/10 04:33	460-00-4	
Dibromofluoromethane (S)	93	%	87-113		1		02/01/10 04:33	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.4	0.17	1		01/27/10 23:07	71-43-2	
Ethylbenzene	**0.58J**	ug/kg	3.4	0.43	1		01/27/10 23:07	100-41-4	
Toluene	ND	ug/kg	3.4	0.35	1		01/27/10 23:07	108-88-3	
Xylene (Total)	ND	ug/kg	6.8	0.84	1		01/27/10 23:07	1330-20-7	
Dibromofluoromethane (S)	92	%	80-136		1		01/27/10 23:07	1868-53-7	6n
Toluene-d8 (S)	104	%	80-120		1		01/27/10 23:07	2037-26-5	
4-Bromofluorobenzene (S)	106	%	72-122		1		01/27/10 23:07	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	80-143		1		01/27/10 23:07	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.1**	%	0.10	0.10	1		01/21/10 09:40		

Sample: BIN 158 (922) **Lab ID: 252856002** Collected: 01/18/10 08:50 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**209**	mg/kg	20.9	3.3	1	01/22/10 17:45	01/23/10 23:20		
Motor Oil Range SG	**1710**	mg/kg	83.6	22.5	1	01/22/10 17:45	01/23/10 23:20	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 158 (922) **Lab ID: 252856002** Collected: 01/18/10 08:50 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
n-Octacosane (S) SG	100	%	50-150		1	01/22/10 17:45	01/23/10 23:20	630-02-4	
o-Terphenyl (S) SG	100	%	50-150		1	01/22/10 17:45	01/23/10 23:20	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**11.8**	mg/kg	6.1	0.24	1	01/20/10 17:00	01/25/10 22:25		Z2
a,a,a-Trifluorotoluene (S)	96	%	50-150		1	01/20/10 17:00	01/25/10 22:25	98-08-8	
4-Bromofluorobenzene (S)	95	%	50-150		1	01/20/10 17:00	01/25/10 22:25	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:45	7439-92-1	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
1-Methylnaphthalene	**0.031J**	mg/kg	0.073	0.0096	1	01/22/10 18:00	01/31/10 19:30	90-12-0	
2-Methylnaphthalene	**0.073J**	mg/kg	0.073	0.020	1	01/22/10 18:00	01/31/10 19:30	91-57-6	
Acenaphthene	ND	mg/kg	0.073	0.017	1	01/22/10 18:00	01/31/10 19:30	83-32-9	
Acenaphthylene	**0.0039J**	mg/kg	0.073	0.0025	1	01/22/10 18:00	01/31/10 19:30	208-96-8	
Anthracene	**0.020J**	mg/kg	0.073	0.0041	1	01/22/10 18:00	01/31/10 19:30	120-12-7	
Benzo(a)anthracene	**0.040J**	mg/kg	0.073	0.0012	1	01/22/10 18:00	01/31/10 19:30	56-55-3	
Benzo(a)pyrene	**0.059J**	mg/kg	0.073	0.0017	1	01/22/10 18:00	01/31/10 19:30	50-32-8	
Benzo(b)fluoranthene	**0.044J**	mg/kg	0.073	0.0073	1	01/22/10 18:00	01/31/10 19:30	205-99-2	
Benzo(g,h,i)perylene	**0.082**	mg/kg	0.073	0.0032	1	01/22/10 18:00	01/31/10 19:30	191-24-2	
Benzo(k)fluoranthene	**0.029J**	mg/kg	0.073	0.0052	1	01/22/10 18:00	01/31/10 19:30	207-08-9	
Chrysene	**0.13**	mg/kg	0.073	0.0034	1	01/22/10 18:00	01/31/10 19:30	218-01-9	
Dibenz(a,h)anthracene	**0.027J**	mg/kg	0.073	0.0030	1	01/22/10 18:00	01/31/10 19:30	53-70-3	
Fluoranthene	**0.043J**	mg/kg	0.073	0.0085	1	01/22/10 18:00	01/31/10 19:30	206-44-0	
Fluorene	ND	mg/kg	0.073	0.020	1	01/22/10 18:00	01/31/10 19:30	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.024J**	mg/kg	0.073	0.0027	1	01/22/10 18:00	01/31/10 19:30	193-39-5	
Naphthalene	**0.029J**	mg/kg	0.073	0.019	1	01/22/10 18:00	01/31/10 19:30	91-20-3	P3
Phenanthrene	**0.046J**	mg/kg	0.073	0.034	1	01/22/10 18:00	01/31/10 19:30	85-01-8	
Pyrene	**0.18**	mg/kg	0.073	0.0032	1	01/22/10 18:00	01/31/10 19:30	129-00-0	
Nitrobenzene-d5 (S)	58	%	63-138		1	01/22/10 18:00	01/31/10 19:30	4165-60-0	1n,S0
2-Fluorobiphenyl (S)	84	%	55-136		1	01/22/10 18:00	01/31/10 19:30	321-60-8	
Terphenyl-d14 (S)	89	%	60-144		1	01/22/10 18:00	01/31/10 19:30	1718-51-0	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 05:07	71-43-2	
1,2-Dichloroethane-d4 (S)	103	%	81-121		1		02/01/10 05:07	17060-07-0	
Toluene-d8 (S)	99	%	89-111		1		02/01/10 05:07	2037-26-5	
4-Bromofluorobenzene (S)	101	%	87-115		1		02/01/10 05:07	460-00-4	
Dibromofluoromethane (S)	97	%	87-113		1		02/01/10 05:07	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	2.9	0.14	1		01/27/10 23:27	71-43-2	

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 158 (922) **Lab ID: 252856002** Collected: 01/18/10 08:50 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030	Analytical Method: EPA 8260								
Ethylbenzene	**0.70J**	ug/kg	2.9	0.37	1		01/27/10 23:27	100-41-4	
Toluene	ND	ug/kg	2.9	0.30	1		01/27/10 23:27	108-88-3	
Xylene (Total)	**9.7**	ug/kg	5.8	0.72	1		01/27/10 23:27	1330-20-7	
Dibromofluoromethane (S)	91	%	80-136		1		01/27/10 23:27	1868-53-7	6n
Toluene-d8 (S)	104	%	80-120		1		01/27/10 23:27	2037-26-5	
4-Bromofluorobenzene (S)	109	%	72-122		1		01/27/10 23:27	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	80-143		1		01/27/10 23:27	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**10.1**	%	0.10	0.10	1		01/21/10 09:42		

Sample: BIN 181 (922) **Lab ID: 252856003** Collected: 01/18/10 09:00 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**412**	mg/kg	21.0	3.3	1	01/22/10 17:45	01/23/10 23:36		
Motor Oil Range SG	**895**	mg/kg	84.0	22.6	1	01/22/10 17:45	01/23/10 23:36	64742-65-0	
n-Octacosane (S) SG	122	%	50-150		1	01/22/10 17:45	01/23/10 23:36	630-02-4	
o-Terphenyl (S) SG	80	%	50-150		1	01/22/10 17:45	01/23/10 23:36	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**16.8**	mg/kg	5.7	0.23	1	01/20/10 17:00	01/25/10 23:14		Z2
a,a,a-Trifluorotoluene (S)	103	%	50-150		1	01/20/10 17:00	01/25/10 23:14	98-08-8	
4-Bromofluorobenzene (S)	103	%	50-150		1	01/20/10 17:00	01/25/10 23:14	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:48	7439-92-1	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
1-Methylnaphthalene	**0.013J**	mg/kg	0.036	0.0048	5	01/22/10 18:00	01/31/10 19:12	90-12-0	
2-Methylnaphthalene	**0.029J**	mg/kg	0.036	0.0099	5	01/22/10 18:00	01/31/10 19:12	91-57-6	
Acenaphthene	**0.024J**	mg/kg	0.036	0.0084	5	01/22/10 18:00	01/31/10 19:12	83-32-9	
Acenaphthylene	**0.013J**	mg/kg	0.036	0.0012	5	01/22/10 18:00	01/31/10 19:12	208-96-8	
Anthracene	**0.059**	mg/kg	0.036	0.0020	5	01/22/10 18:00	01/31/10 19:12	120-12-7	
Benzo(a)anthracene	**0.079**	mg/kg	0.036	0.00058	5	01/22/10 18:00	01/31/10 19:12	56-55-3	
Benzo(a)pyrene	**0.072**	mg/kg	0.036	0.00087	5	01/22/10 18:00	01/31/10 19:12	50-32-8	
Benzo(b)fluoranthene	**0.056**	mg/kg	0.036	0.0036	5	01/22/10 18:00	01/31/10 19:12	205-99-2	
Benzo(g,h,i)perylene	**0.11**	mg/kg	0.036	0.0016	5	01/22/10 18:00	01/31/10 19:12	191-24-2	
Benzo(k)fluoranthene	**0.024J**	mg/kg	0.036	0.0026	5	01/22/10 18:00	01/31/10 19:12	207-08-9	
Chrysene	**0.19**	mg/kg	0.036	0.0017	5	01/22/10 18:00	01/31/10 19:12	218-01-9	

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 181 (922) **Lab ID: 252856003** Collected: 01/18/10 09:00 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Dibenz(a,h)anthracene	**0.029J**	mg/kg	0.036	0.0015	5	01/22/10 18:00	01/31/10 19:12	53-70-3	
Fluoranthene	**0.075**	mg/kg	0.036	0.0043	5	01/22/10 18:00	01/31/10 19:12	206-44-0	
Fluorene	**0.027J**	mg/kg	0.036	0.0098	5	01/22/10 18:00	01/31/10 19:12	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.052**	mg/kg	0.036	0.0014	5	01/22/10 18:00	01/31/10 19:12	193-39-5	
Naphthalene	**0.022J**	mg/kg	0.036	0.0097	5	01/22/10 18:00	01/31/10 19:12	91-20-3	3n
Phenanthrene	**0.058**	mg/kg	0.036	0.017	5	01/22/10 18:00	01/31/10 19:12	85-01-8	
Pyrene	**0.26**	mg/kg	0.036	0.0016	5	01/22/10 18:00	01/31/10 19:12	129-00-0	
Nitrobenzene-d5 (S)	67	%	63-138		5	01/22/10 18:00	01/31/10 19:12	4165-60-0	
2-Fluorobiphenyl (S)	98	%	55-136		5	01/22/10 18:00	01/31/10 19:12	321-60-8	
Terphenyl-d14 (S)	105	%	60-144		5	01/22/10 18:00	01/31/10 19:12	1718-51-0	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 05:24	71-43-2	
1,2-Dichloroethane-d4 (S)	105	%	81-121		1		02/01/10 05:24	17060-07-0	
Toluene-d8 (S)	100	%	89-111		1		02/01/10 05:24	2037-26-5	
4-Bromofluorobenzene (S)	103	%	87-115		1		02/01/10 05:24	460-00-4	
Dibromofluoromethane (S)	98	%	87-113		1		02/01/10 05:24	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.2	0.16	1		01/27/10 23:47	71-43-2	
Ethylbenzene	**0.58J**	ug/kg	3.2	0.41	1		01/27/10 23:47	100-41-4	M0
Toluene	**0.43J**	ug/kg	3.2	0.33	1		01/27/10 23:47	108-88-3	M0,Z2
Xylene (Total)	**7.6**	ug/kg	6.4	0.80	1		01/27/10 23:47	1330-20-7	M0
Dibromofluoromethane (S)	92	%	80-136		1		01/27/10 23:47	1868-53-7	6n
Toluene-d8 (S)	102	%	80-120		1		01/27/10 23:47	2037-26-5	
4-Bromofluorobenzene (S)	110	%	72-122		1		01/27/10 23:47	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	80-143		1		01/27/10 23:47	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**9.6**	%	0.10	0.10	1		01/21/10 09:49		

Sample: BIN 193 (922) **Lab ID: 252856004** Collected: 01/18/10 09:10 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**31.8**	mg/kg	21.5	3.4	1	01/22/10 17:45	01/23/10 23:52		
Motor Oil Range SG	**119**	mg/kg	85.8	23.1	1	01/22/10 17:45	01/23/10 23:52	64742-65-0	
n-Octacosane (S) SG	108	%	50-150		1	01/22/10 17:45	01/23/10 23:52	630-02-4	
o-Terphenyl (S) SG	108	%	50-150		1	01/22/10 17:45	01/23/10 23:52	84-15-1	

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 193 (922) **Lab ID: 252856004** Collected: 01/18/10 09:10 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**3.8J**	mg/kg	6.0	0.24	1	01/20/10 17:00	01/26/10 00:03		5n,Z2
a,a,a-Trifluorotoluene (S)	83	%	50-150		1	01/20/10 17:00	01/26/10 00:03	98-08-8	
4-Bromofluorobenzene (S)	78	%	50-150		1	01/20/10 17:00	01/26/10 00:03	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:51	7439-92-1	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
1-Methylnaphthalene	**0.016**	mg/kg	0.0075	0.00099	1	01/22/10 18:00	01/31/10 18:55	90-12-0	
2-Methylnaphthalene	**0.030**	mg/kg	0.0075	0.0020	1	01/22/10 18:00	01/31/10 18:55	91-57-6	
Acenaphthene	ND	mg/kg	0.0075	0.0017	1	01/22/10 18:00	01/31/10 18:55	83-32-9	
Acenaphthylene	**0.0020J**	mg/kg	0.0075	0.00025	1	01/22/10 18:00	01/31/10 18:55	208-96-8	
Anthracene	**0.0050J**	mg/kg	0.0075	0.00042	1	01/22/10 18:00	01/31/10 18:55	120-12-7	
Benzo(a)anthracene	**0.016**	mg/kg	0.0075	0.00012	1	01/22/10 18:00	01/31/10 18:55	56-55-3	
Benzo(a)pyrene	**0.015**	mg/kg	0.0075	0.00018	1	01/22/10 18:00	01/31/10 18:55	50-32-8	
Benzo(b)fluoranthene	**0.011**	mg/kg	0.0075	0.00075	1	01/22/10 18:00	01/31/10 18:55	205-99-2	
Benzo(g,h,i)perylene	**0.019**	mg/kg	0.0075	0.00033	1	01/22/10 18:00	01/31/10 18:55	191-24-2	
Benzo(k)fluoranthene	**0.0086**	mg/kg	0.0075	0.00054	1	01/22/10 18:00	01/31/10 18:55	207-08-9	
Chrysene	**0.021**	mg/kg	0.0075	0.00035	1	01/22/10 18:00	01/31/10 18:55	218-01-9	
Dibenz(a,h)anthracene	**0.0036J**	mg/kg	0.0075	0.00031	1	01/22/10 18:00	01/31/10 18:55	53-70-3	
Fluoranthene	**0.015**	mg/kg	0.0075	0.00087	1	01/22/10 18:00	01/31/10 18:55	206-44-0	
Fluorene	**0.0021J**	mg/kg	0.0075	0.0020	1	01/22/10 18:00	01/31/10 18:55	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.010**	mg/kg	0.0075	0.00028	1	01/22/10 18:00	01/31/10 18:55	193-39-5	
Naphthalene	**0.017**	mg/kg	0.0075	0.0020	1	01/22/10 18:00	01/31/10 18:55	91-20-3	
Phenanthrene	**0.011**	mg/kg	0.0075	0.0035	1	01/22/10 18:00	01/31/10 18:55	85-01-8	
Pyrene	**0.030**	mg/kg	0.0075	0.00033	1	01/22/10 18:00	01/31/10 18:55	129-00-0	
Nitrobenzene-d5 (S)	65	%	63-138		1	01/22/10 18:00	01/31/10 18:55	4165-60-0	
2-Fluorobiphenyl (S)	73	%	55-136		1	01/22/10 18:00	01/31/10 18:55	321-60-8	
Terphenyl-d14 (S)	83	%	60-144		1	01/22/10 18:00	01/31/10 18:55	1718-51-0	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 05:41	71-43-2	
1,2-Dichloroethane-d4 (S)	106	%	81-121		1		02/01/10 05:41	17060-07-0	
Toluene-d8 (S)	100	%	89-111		1		02/01/10 05:41	2037-26-5	
4-Bromofluorobenzene (S)	98	%	87-115		1		02/01/10 05:41	460-00-4	
Dibromofluoromethane (S)	97	%	87-113		1		02/01/10 05:41	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.2	0.16	1		01/28/10 00:08	71-43-2	
Ethylbenzene	**0.42J**	ug/kg	3.2	0.40	1		01/28/10 00:08	100-41-4	
Toluene	ND	ug/kg	3.2	0.33	1		01/28/10 00:08	108-88-3	
Xylene (Total)	**7.4**	ug/kg	6.4	0.80	1		01/28/10 00:08	1330-20-7	
Dibromofluoromethane (S)	91	%	80-136		1		01/28/10 00:08	1868-53-7	6n

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 193 (922) **Lab ID: 252856004** Collected: 01/18/10 09:10 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030	Analytical Method: EPA 8260								
Toluene-d8 (S)	104	%	80-120		1		01/28/10 00:08	2037-26-5	
4-Bromofluorobenzene (S)	107	%	72-122		1		01/28/10 00:08	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	80-143		1		01/28/10 00:08	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**11.7**	%	0.10	0.10	1		01/21/10 09:53		

Sample: TB-1 (922) **Lab ID: 252856005** Collected: 01/18/10 00:00 Received: 01/20/10 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		01/25/10 20:23		5n
a,a,a-Trifluorotoluene (S)	112	%	50-150		1		01/25/10 20:23	98-08-8	
4-Bromofluorobenzene (S)	114	%	50-150		1		01/25/10 20:23	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	ND	ug/L	1.0	0.12	1		01/26/10 20:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		01/26/10 20:47	100-41-4	
Toluene	ND	ug/L	1.0	0.21	1		01/26/10 20:47	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		01/26/10 20:47	1330-20-7	
4-Bromofluorobenzene (S)	102	%	80-120		1		01/26/10 20:47	460-00-4	5n
Dibromofluoromethane (S)	90	%	80-122		1		01/26/10 20:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	94	%	80-124		1		01/26/10 20:47	17060-07-0	
Toluene-d8 (S)	104	%	80-123		1		01/26/10 20:47	2037-26-5	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: OEXT/1804 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3546 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19484 Matrix: Solid
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range SG	mg/kg	ND	20.0	01/23/10 22:14	4n
Motor Oil Range SG	mg/kg	ND	80.0	01/23/10 22:14	
n-Octacosane (S) SG	%	111	50-150	01/23/10 22:14	
o-Terphenyl (S) SG	%	107	50-150	01/23/10 22:14	

LABORATORY CONTROL SAMPLE: 19485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range SG	mg/kg	500	434	87	56-124	
Motor Oil Range SG	mg/kg	500	485	97	50-150	
n-Octacosane (S) SG	%			87	50-150	
o-Terphenyl (S) SG	%			67	50-150	

SAMPLE DUPLICATE: 19486

Parameter	Units	252856001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range SG	mg/kg	13.0J	10.3J		50	
Motor Oil Range SG	mg/kg	52.7J	34.0J		50	
n-Octacosane (S) SG	%	108	114	5		
o-Terphenyl (S) SG	%	104	111	6		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: GCV/1420 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Solid GCV
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19685 Matrix: Solid
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	0.62J	5.0	01/25/10 21:36	5n
4-Bromofluorobenzene (S)	%	65	50-150	01/25/10 21:36	
a,a,a-Trifluorotoluene (S)	%	69	50-150	01/25/10 21:36	

LABORATORY CONTROL SAMPLE: 19686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	12.5	13.1	105	54-156	
4-Bromofluorobenzene (S)	%			95	50-150	
a,a,a-Trifluorotoluene (S)	%			101	50-150	

SAMPLE DUPLICATE: 19786

Parameter	Units	252856003 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	16.8	13.9	19	50	
4-Bromofluorobenzene (S)	%	103	89	14		
a,a,a-Trifluorotoluene (S)	%	103	93	9		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: GCV/1421
QC Batch Method: NWTPH-Gx
Analysis Method: NWTPH-Gx
Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 252856005

METHOD BLANK: 19687 Matrix: Water
Associated Lab Samples: 252856005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	14.6J	50.0	01/25/10 07:07	5n
4-Bromofluorobenzene (S)	%	106	50-150	01/25/10 07:07	
a,a,a-Trifluorotoluene (S)	%	116	50-150	01/25/10 07:07	

LABORATORY CONTROL SAMPLE: 19688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	300	120	50-163	
4-Bromofluorobenzene (S)	%			108	50-150	
a,a,a-Trifluorotoluene (S)	%			113	50-150	

SAMPLE DUPLICATE: 19756

Parameter	Units	252868001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		30	
4-Bromofluorobenzene (S)	%	104	120	14		
a,a,a-Trifluorotoluene (S)	%	111	122	9		

SAMPLE DUPLICATE: 19757

Parameter	Units	252883001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		30	
4-Bromofluorobenzene (S)	%	121	121	.2		
a,a,a-Trifluorotoluene (S)	%	118	118	.7		

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MPRP/1430 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19573 Matrix: Water
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/L	ND	1.0	01/22/10 15:21	

LABORATORY CONTROL SAMPLE: 19574

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	.5	0.46	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19575 19576

Parameter	Units	252856001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	5	5	4.7	4.5	93	90	75-125	3	20	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: OEXT/1805 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3546 Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 252856002, 252856003, 252856004

METHOD BLANK: 19487 Matrix: Solid
Associated Lab Samples: 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	mg/kg	ND	0.0067	01/23/10 22:04	
2-Methylnaphthalene	mg/kg	ND	0.0067	01/23/10 22:04	
Acenaphthene	mg/kg	ND	0.0067	01/23/10 22:04	
Acenaphthylene	mg/kg	ND	0.0067	01/23/10 22:04	
Anthracene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(a)anthracene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(a)pyrene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(b)fluoranthene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(g,h,i)perylene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(k)fluoranthene	mg/kg	ND	0.0067	01/23/10 22:04	
Chrysene	mg/kg	ND	0.0067	01/23/10 22:04	
Dibenz(a,h)anthracene	mg/kg	ND	0.0067	01/23/10 22:04	
Fluoranthene	mg/kg	ND	0.0067	01/23/10 22:04	
Fluorene	mg/kg	ND	0.0067	01/23/10 22:04	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.0067	01/23/10 22:04	
Naphthalene	mg/kg	ND	0.0067	01/23/10 22:04	
Phenanthrene	mg/kg	ND	0.0067	01/23/10 22:04	
Pyrene	mg/kg	ND	0.0067	01/23/10 22:04	
2-Fluorobiphenyl (S)	%	86	55-136	01/23/10 22:04	
Nitrobenzene-d5 (S)	%	87	63-138	01/23/10 22:04	
Terphenyl-d14 (S)	%	100	60-144	01/23/10 22:04	

LABORATORY CONTROL SAMPLE: 19488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	mg/kg	.083	0.077	92	61-132	
2-Methylnaphthalene	mg/kg	.083	0.080	96	56-153	
Acenaphthene	mg/kg	.083	0.074	88	49-141	
Acenaphthylene	mg/kg	.083	0.064	77	53-139	
Anthracene	mg/kg	.083	0.080	96	53-148	
Benzo(a)anthracene	mg/kg	.083	0.076	91	42-146	
Benzo(a)pyrene	mg/kg	.083	0.079	95	34-147	
Benzo(b)fluoranthene	mg/kg	.083	0.081	97	33-154	
Benzo(g,h,i)perylene	mg/kg	.083	0.084	101	47-148	
Benzo(k)fluoranthene	mg/kg	.083	0.086	104	61-152	
Chrysene	mg/kg	.083	0.083	100	57-145	
Dibenz(a,h)anthracene	mg/kg	.083	0.085	102	55-154	
Fluoranthene	mg/kg	.083	0.082	98	32-150	
Fluorene	mg/kg	.083	0.070	84	45-152	
Indeno(1,2,3-cd)pyrene	mg/kg	.083	0.084	101	35-151	
Naphthalene	mg/kg	.083	0.079	94	44-140	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

LABORATORY CONTROL SAMPLE: 19488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	mg/kg	.083	0.082	99	38-155	
Pyrene	mg/kg	.083	0.079	95	51-153	
2-Fluorobiphenyl (S)	%			82	55-136	
Nitrobenzene-d5 (S)	%			79	63-138	
Terphenyl-d14 (S)	%			90	60-144	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19489 19490

Parameter	Units	252856002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	mg/kg	0.031J	.091	.092	0.097	0.098	72	73	61-132	1	30	
2-Methylnaphthalene	mg/kg	0.073J	.091	.092	0.14	0.14	70	72	56-153	1	30	
Acenaphthene	mg/kg	ND	.091	.092	0.077	0.071J	84	78	49-141		30	
Acenaphthylene	mg/kg	0.0039J	.091	.092	0.082	0.084	85	87	53-139	2	30	
Anthracene	mg/kg	0.020J	.091	.092	0.075	0.072J	60	57	53-148		30	
Benzo(a)anthracene	mg/kg	0.040J	.091	.092	0.13	0.11	93	77	42-146	13	30	
Benzo(a)pyrene	mg/kg	0.059J	.091	.092	0.12	0.11	61	57	34-147	3	30	
Benzo(b)fluoranthene	mg/kg	0.044J	.091	.092	0.12	0.11	85	75	33-154	8	30	
Benzo(g,h,i)perylene	mg/kg	0.082	.091	.092	0.13	0.11	52	36	47-148	12	30	M0
Benzo(k)fluoranthene	mg/kg	0.029J	.091	.092	0.087	0.082	63	57	61-152	7	30	M0
Chrysene	mg/kg	0.13	.091	.092	0.17	0.17	41	38	57-145	2	30	M0
Dibenz(a,h)anthracene	mg/kg	0.027J	.091	.092	0.090	0.083	69	61	55-154	9	30	
Fluoranthene	mg/kg	0.043J	.091	.092	0.12	0.10	81	62	32-150	16	30	
Fluorene	mg/kg	ND	.091	.092	0.083	0.081	76	74	45-152	2	30	
Indeno(1,2,3-cd)pyrene	mg/kg	0.024J	.091	.092	0.089	0.081	72	62	35-151	10	30	
Naphthalene	mg/kg	0.029J	.091	.092	0.097	0.10	74	79	44-140	5	30	2n,P3
Phenanthrene	mg/kg	0.046J	.091	.092	0.11	0.098	71	56	38-155	13	30	
Pyrene	mg/kg	0.18	.091	.092	0.16	0.15	-25	-31	51-153	4	30	M0
2-Fluorobiphenyl (S)	%						76	74	55-136			
Nitrobenzene-d5 (S)	%						55	49	63-138			S0
Terphenyl-d14 (S)	%						76	71	60-144			

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MSV/26495 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 597277 Matrix: Water
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	50.0	02/01/10 04:16	
1,2-Dichloroethane-d4 (S)	%	102	81-121	02/01/10 04:16	
4-Bromofluorobenzene (S)	%	99	87-115	02/01/10 04:16	
Dibromofluoromethane (S)	%	95	87-113	02/01/10 04:16	
Toluene-d8 (S)	%	102	89-111	02/01/10 04:16	

LABORATORY CONTROL SAMPLE: 597278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	500	472	94	81-114	
1,2-Dichloroethane-d4 (S)	%			99	81-121	
4-Bromofluorobenzene (S)	%			100	87-115	
Dibromofluoromethane (S)	%			100	87-113	
Toluene-d8 (S)	%			99	89-111	

MATRIX SPIKE SAMPLE: 597279

Parameter	Units	252856001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	ND	500	225	45	65-140	M0
1,2-Dichloroethane-d4 (S)	%				102	81-121	
4-Bromofluorobenzene (S)	%				102	87-115	
Dibromofluoromethane (S)	%				99	87-113	
Toluene-d8 (S)	%				101	89-111	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MSV/1940
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 252856005

METHOD BLANK: 19790 Matrix: Water
Associated Lab Samples: 252856005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/26/10 17:46	
Ethylbenzene	ug/L	ND	1.0	01/26/10 17:46	
Toluene	ug/L	ND	1.0	01/26/10 17:46	
Xylene (Total)	ug/L	ND	3.0	01/26/10 17:46	
1,2-Dichloroethane-d4 (S)	%	94	80-124	01/26/10 17:46	
4-Bromofluorobenzene (S)	%	103	80-120	01/26/10 17:46	5n
Dibromofluoromethane (S)	%	92	80-122	01/26/10 17:46	
Toluene-d8 (S)	%	103	80-123	01/26/10 17:46	

LABORATORY CONTROL SAMPLE & LCSD: 19791 19792

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	20.5	19.8	103	99	75-124	3	30	
Ethylbenzene	ug/L	20	17.3	16.5	87	82	76-124	5	30	
Toluene	ug/L	20	18.6	17.8	93	89	75-124	4	30	
Xylene (Total)	ug/L	60	50.3	48.2	84	80	76-123	4	30	
1,2-Dichloroethane-d4 (S)	%				99	98	80-124			
4-Bromofluorobenzene (S)	%				100	100	80-120			
Dibromofluoromethane (S)	%				99	101	80-122			
Toluene-d8 (S)	%				95	95	80-123			

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MSV/1944 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5030 Volatile Organics
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19876 Matrix: Solid
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	3.0	01/27/10 18:03	
Ethylbenzene	ug/kg	ND	3.0	01/27/10 18:03	
Toluene	ug/kg	0.37J	3.0	01/27/10 18:03	
Xylene (Total)	ug/kg	ND	6.0	01/27/10 18:03	
1,2-Dichloroethane-d4 (S)	%	96	80-143	01/27/10 18:03	
4-Bromofluorobenzene (S)	%	105	72-122	01/27/10 18:03	
Dibromofluoromethane (S)	%	96	80-136	01/27/10 18:03	6n
Toluene-d8 (S)	%	109	80-120	01/27/10 18:03	

LABORATORY CONTROL SAMPLE: 19877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	40	51.2	128	68-124	L3
Ethylbenzene	ug/kg	40	51.1	128	63-131	
Toluene	ug/kg	40	46.4	116	61-126	
Xylene (Total)	ug/kg	120	135	113	68-129	
1,2-Dichloroethane-d4 (S)	%			101	80-143	
4-Bromofluorobenzene (S)	%			99	72-122	
Dibromofluoromethane (S)	%			105	80-136	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20009 20010

Parameter	Units	252856003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	ND	43.5	40.7	31.7	32.3	73	79	68-124	2	30	
Ethylbenzene	ug/kg	0.58J	43.5	40.7	19.8	21.9	44	52	63-131	10	30	M0
Toluene	ug/kg	0.43J	43.5	40.7	24.7	26.3	56	64	61-126	6	30	M0
Xylene (Total)	ug/kg	7.6	131	122	57.0	62.8	38	45	68-129	10	30	M0
1,2-Dichloroethane-d4 (S)	%						102	102	80-143			
4-Bromofluorobenzene (S)	%						109	107	72-122			
Dibromofluoromethane (S)	%						103	105	80-136			
Toluene-d8 (S)	%						103	102	80-120			

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: PMST/1152 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

SAMPLE DUPLICATE: 19491

Parameter	Units	252856001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.1	13.6	11	30	

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QUALIFIERS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

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LABORATORIES

PASI-K	Pace Analytical Services - Kansas City
PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

1n	Low surrogate recovery confirmed by the matrix spike/duplicate sample performed.
2n	Matrix spike sample does not provide reliable recovery data due to sample matrix; sample unable to be concentrated to routine final volume.
3n	Sample evaluated at dilution due to matrix interference and chromatographic interference.
4n	Sample evaluated to the mdl for all compounds.
5n	Sample was evaluated to the MDL.
6n	Sample was reported to the MDL.
J	Analyte detected below reporting limit, therefore result is an estimate.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
S0	Surrogate recovery outside laboratory control limits.
Z2	Analyte present in the associated method blank above the detection limit.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
252856001	**BIN 178 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856002	**BIN 158 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856003	**BIN 181 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856004	**BIN 193 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856001	**BIN 178 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856002	**BIN 158 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856003	**BIN 181 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856004	**BIN 193 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856005	**TB-1 (922)**	NWTPH-Gx	GCV/1421		
252856001	**BIN 178 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856002	**BIN 158 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856003	**BIN 181 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856004	**BIN 193 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856002	**BIN 158 (922)**	EPA 3546	OEXT/1805	EPA 8270 by SIM	MSSV/1199
252856003	**BIN 181 (922)**	EPA 3546	OEXT/1805	EPA 8270 by SIM	MSSV/1199
252856004	**BIN 193 (922)**	EPA 3546	OEXT/1805	EPA 8270 by SIM	MSSV/1199
252856001	**BIN 178 (922)**	EPA 8260	MSV/26495		
252856002	**BIN 158 (922)**	EPA 8260	MSV/26495		
252856003	**BIN 181 (922)**	EPA 8260	MSV/26495		
252856004	**BIN 193 (922)**	EPA 8260	MSV/26495		
252856005	**TB-1 (922)**	EPA 5030B/8260	MSV/1940		
252856001	**BIN 178 (922)**	EPA 8260	MSV/1944		
252856002	**BIN 158 (922)**	EPA 8260	MSV/1944		
252856003	**BIN 181 (922)**	EPA 8260	MSV/1944		
252856004	**BIN 193 (922)**	EPA 8260	MSV/1944		

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C. USTODY / Analytical Request Document

The Chain-o. LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: / of

1306113

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Stantec	Report To: bill.edmund@stantec.com	Attention: ConocoPhillips
Address: 7730 SW Mohawk St. Tualatin, OR 97062	Copy To: chris.carltonfranco@stantec.com	Company Name:
Email To: Bill Edmund	Purchase Order No.: 4512826035	Address:
Phone: (503) 691-2030 Fax: (503)-692-7074	Project Name: Asphalt work Area 2, PDX Terminal	Pace Quote Reference:
Requested Due Date/TAT: STD	Project Number: 212302313	Pace Project Manager:
		Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: OR

Section D Required Client Information

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	NWTPH-Gx	NWTPH-Dx w/ silica gel cleanup	8270 SIM if diesel detected	BTEX	TCLP Benzene	TCLP Lead	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Bin #178 (922)	SL	G	18 Jan 10		0840			2	2									X	X		X	X	X	X		252856-001
2	Bin 158 (922)	SL	G	18 Jan 10		0850			2	2									X	X		X	X	X	X		002
3	Bin 181 (922)	SL	G	18 Jan 10		0900			2	2									X	X		X	X	X	X		003
4	Bin 193 (922)	SL	G	19 Jan 10		0910			2	2									X	X		X	X	X	X		004
5	TB-1	WT	-	18 Jan 10					2										X			X					005
6																											
7																											
8																											
9																											
10																											
11																											
12																											

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	CCF / Stantec	19 Jan 10	1200	Andy By Pace	1/20/10	0800	2.4	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chris Carlton-Franco

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 18 Jan 10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Stantec Project # 252856

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other PCS

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used Horiba 132013 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: _____

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☐Yes	☑No	☐N/A
Short Hold Time Analysis (<72hr):	☑Yes	☐No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A
Sufficient Volume:	☑Yes	☐No	☐N/A
Correct Containers Used:	☑Yes	☐No	☐N/A
-Pace Containers Used:	☑Yes	☐No	☐N/A
Containers Intact:	☑Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A
Sample Labels match COC:	☑Yes	☐No	☐N/A
-Includes date/time/ID/Analysis Matrix: Soil			
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No	
Samples checked for dechlorination:	☐Yes	☐No	☑N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A
Trip Blank Present:	☑Yes	☐No	☐N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☐N/A
Pace Trip Blank Lot # (if purchased): _____			

1.
2.
3.
4.
5. Samples recieved outside of 48 hr. extraction
6. Analyze requirement by COP
7.
8.
9. Water trip blanks recieved for Soil Samples.
10.
11.
12.
13.

Initial when completed	Lot # of added preservative

14.
15.
16. See number 9.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: JENNI GROSS Date: 1/20/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003rev.3, 11September2006

COP0019799

	A	B	C	D	E	F	G	H	I	J	K	L
1	CLIENT	PROJECT	PROJECT	LABNAME	SAMPLEN	LABSAMP	MATRIX	RPTMATR	SAMPDAT	PREPDAT	ANADATE	BATCH
2	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
3	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
4	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
5	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
6	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/20/2010	1/25/2010 :	5645
7	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/22/2010 (	1/22/2010	5615
8	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	2/1/2010 0-	2/1/2010 0-	147781
9	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
10	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
11	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
12	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
13	COP_Stan	00922-Asp	252856	Pace Analy	BIN 178 (9	252856001	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
14	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
15	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
16	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
17	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
18	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/20/2010	1/25/2010 :	5645
19	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010 (	1/22/2010	5615
20	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
21	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
22	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
23	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
24	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
25	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
26	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
27	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
28	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
29	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
30	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
31	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
32	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
33	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
34	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
35	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
36	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
37	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
38	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	2/1/2010 0-	2/1/2010 0-	147781
39	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
40	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
41	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
42	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/27/2010 :	1/27/2010 :	5709
43	COP_Stan	00922-Asp	252856	Pace Analy	BIN 158 (9	252856002	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
44	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
45	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
46	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
47	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010 :	5589
48	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/20/2010	1/25/2010 :	5645
49	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010 (	1/22/2010	5615
50	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
51	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
52	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
53	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
54	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
55	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
56	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
57	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
58	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
59	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
60	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
61	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
62	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
63	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
64	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590

	A	B	C	D	E	F	G	H	I	J	K	L
65	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
66	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
67	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
68	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	2/1/2010 0	2/1/2010 0	147781
69	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
70	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
71	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
72	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/27/2010	1/27/2010	5709
73	COP_Stan	00922-Asp	252856	Pace Analy	BIN 181 (9	252856003	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
74	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
75	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
76	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
77	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/23/2010	5589
78	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/20/2010	1/26/2010 (	5645
79	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010 (	1/22/2010	5615
80	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
81	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
82	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
83	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
84	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
85	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
86	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
87	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
88	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
89	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
90	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
91	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
92	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
93	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
94	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
95	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
96	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
97	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/22/2010	1/31/2010	5590
98	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	2/1/2010 0	2/1/2010 0	147781
99	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
100	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
101	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
102	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/28/2010 (	1/28/2010 (	5709
103	COP_Stan	00922-Asp	252856	Pace Analy	BIN 193 (9	252856004	Soil	Soil	1/18/2010 (	1/21/2010 (	1/21/2010 (	5591
104	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/25/2010	1/25/2010	5646
105	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685
106	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685
107	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685
108	COP_Stan	00922-Asp	252856	Pace Analy	TB-1 (922	252856005	Water	Water	1/18/2010 (	1/26/2010	1/26/2010	5685

	M	N	O	P	Q	R	S	T	U	V	W	X
1	METHODC	METHODN	PREPNAM	ANALYTE	CASNUME	SURROGA	TIC	RESULT	DL	RL	UNITS	RPToMDL
2	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	13.0	3.5	22.3	mg/kg	FALSE
3	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	52.7	24	89.2	mg/kg	FALSE
4	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	108			%	FALSE
5	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	104			%	FALSE
6	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	0.98	0.24	6.1	mg/kg	FALSE
7	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
8	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
9	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.17	3.4	ug/kg	FALSE
10	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.58	0.43	3.4	ug/kg	FALSE
11	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	ND	0.35	3.4	ug/kg	FALSE
12	8260S503(	EPA 8260	EPA 8260	Xylene (To	1330-20-7	FALSE	FALSE	ND	0.84	6.8	ug/kg	FALSE
13		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	12.1	0.1	0.10	%	FALSE
14	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	209	3.3	20.9	mg/kg	FALSE
15	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	1710	22.5	83.6	mg/kg	FALSE
16	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	100			%	FALSE
17	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	100			%	FALSE
18	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	11.8	0.24	6.1	mg/kg	FALSE
19	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
20	8270 SJ	EPA 8270	EPA 3546	1-Methylna	90-12-0	FALSE	FALSE	0.031	0.0096	0.073	mg/kg	FALSE
21	8270 SJ	EPA 8270	EPA 3546	2-Methylna	91-57-6	FALSE	FALSE	0.073	0.02	0.073	mg/kg	FALSE
22	8270 SJ	EPA 8270	EPA 3546	Acenaphth	83-32-9	FALSE	FALSE	ND	0.017	0.073	mg/kg	FALSE
23	8270 SJ	EPA 8270	EPA 3546	Acenaphth	208-96-8	FALSE	FALSE	0.0039	0.0025	0.073	mg/kg	FALSE
24	8270 SJ	EPA 8270	EPA 3546	Anthracene	120-12-7	FALSE	FALSE	0.020	0.0041	0.073	mg/kg	FALSE
25	8270 SJ	EPA 8270	EPA 3546	Benzo(a)ar	56-55-3	FALSE	FALSE	0.040	0.0012	0.073	mg/kg	FALSE
26	8270 SJ	EPA 8270	EPA 3546	Benzo(a)py	50-32-8	FALSE	FALSE	0.059	0.0017	0.073	mg/kg	FALSE
27	8270 SJ	EPA 8270	EPA 3546	Benzo(b)flu	205-99-2	FALSE	FALSE	0.044	0.0073	0.073	mg/kg	FALSE
28	8270 SJ	EPA 8270	EPA 3546	Benzo(g,h,	191-24-2	FALSE	FALSE	0.082	0.0032	0.073	mg/kg	FALSE
29	8270 SJ	EPA 8270	EPA 3546	Benzo(k)flu	207-08-9	FALSE	FALSE	0.029	0.0052	0.073	mg/kg	FALSE
30	8270 SJ	EPA 8270	EPA 3546	Chrysene	218-01-9	FALSE	FALSE	0.13	0.0034	0.073	mg/kg	FALSE
31	8270 SJ	EPA 8270	EPA 3546	Dibenz(a,h	53-70-3	FALSE	FALSE	0.027	0.003	0.073	mg/kg	FALSE
32	8270 SJ	EPA 8270	EPA 3546	Fluoranther	206-44-0	FALSE	FALSE	0.043	0.0085	0.073	mg/kg	FALSE
33	8270 SJ	EPA 8270	EPA 3546	Fluorene	86-73-7	FALSE	FALSE	ND	0.02	0.073	mg/kg	FALSE
34	8270 SJ	EPA 8270	EPA 3546	Indeno(1,2	193-39-5	FALSE	FALSE	0.024	0.0027	0.073	mg/kg	FALSE
35	8270 SJ	EPA 8270	EPA 3546	Naphthaler	91-20-3	FALSE	FALSE	0.029	0.019	0.073	mg/kg	FALSE
36	8270 SJ	EPA 8270	EPA 3546	Phenanthre	85-01-8	FALSE	FALSE	0.046	0.034	0.073	mg/kg	FALSE
37	8270 SJ	EPA 8270	EPA 3546	Pyrene	129-00-0	FALSE	FALSE	0.18	0.0032	0.073	mg/kg	FALSE
38	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
39	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.14	2.9	ug/kg	FALSE
40	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.70	0.37	2.9	ug/kg	FALSE
41	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	ND	0.3	2.9	ug/kg	FALSE
42	8260S503(	EPA 8260	EPA 8260	Xylene (To	1330-20-7	FALSE	FALSE	9.7	0.72	5.8	ug/kg	FALSE
43		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	10.1	0.1	0.10	%	FALSE
44	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	412	3.3	21.0	mg/kg	FALSE
45	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	895	22.6	84.0	mg/kg	FALSE
46	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	122			%	FALSE
47	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	80			%	FALSE
48	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	16.8	0.23	5.7	mg/kg	FALSE
49	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
50	8270 SJ	EPA 8270	EPA 3546	1-Methylna	90-12-0	FALSE	FALSE	0.013	0.0048	0.036	mg/kg	FALSE
51	8270 SJ	EPA 8270	EPA 3546	2-Methylna	91-57-6	FALSE	FALSE	0.029	0.0099	0.036	mg/kg	FALSE
52	8270 SJ	EPA 8270	EPA 3546	Acenaphth	83-32-9	FALSE	FALSE	0.024	0.0084	0.036	mg/kg	FALSE
53	8270 SJ	EPA 8270	EPA 3546	Acenaphth	208-96-8	FALSE	FALSE	0.013	0.0012	0.036	mg/kg	FALSE
54	8270 SJ	EPA 8270	EPA 3546	Anthracene	120-12-7	FALSE	FALSE	0.059	0.002	0.036	mg/kg	FALSE
55	8270 SJ	EPA 8270	EPA 3546	Benzo(a)ar	56-55-3	FALSE	FALSE	0.079	0.00058	0.036	mg/kg	FALSE
56	8270 SJ	EPA 8270	EPA 3546	Benzo(a)py	50-32-8	FALSE	FALSE	0.072	0.00087	0.036	mg/kg	FALSE
57	8270 SJ	EPA 8270	EPA 3546	Benzo(b)flu	205-99-2	FALSE	FALSE	0.056	0.0036	0.036	mg/kg	FALSE
58	8270 SJ	EPA 8270	EPA 3546	Benzo(g,h,	191-24-2	FALSE	FALSE	0.11	0.0016	0.036	mg/kg	FALSE
59	8270 SJ	EPA 8270	EPA 3546	Benzo(k)flu	207-08-9	FALSE	FALSE	0.024	0.0026	0.036	mg/kg	FALSE
60	8270 SJ	EPA 8270	EPA 3546	Chrysene	218-01-9	FALSE	FALSE	0.19	0.0017	0.036	mg/kg	FALSE
61	8270 SJ	EPA 8270	EPA 3546	Dibenz(a,h	53-70-3	FALSE	FALSE	0.029	0.0015	0.036	mg/kg	FALSE
62	8270 SJ	EPA 8270	EPA 3546	Fluoranther	206-44-0	FALSE	FALSE	0.075	0.0043	0.036	mg/kg	FALSE
63	8270 SJ	EPA 8270	EPA 3546	Fluorene	86-73-7	FALSE	FALSE	0.027	0.0098	0.036	mg/kg	FALSE
64	8270 SJ	EPA 8270	EPA 3546	Indeno(1,2	193-39-5	FALSE	FALSE	0.052	0.0014	0.036	mg/kg	FALSE

	M	N	O	P	Q	R	S	T	U	V	W	X
65	8270 SJ	EPA 8270	EPA 3546	Naphthaler	91-20-3	FALSE	FALSE	0.022	0.0097	0.036	mg/kg	FALSE
66	8270 SJ	EPA 8270	EPA 3546	Phenanthre	85-01-8	FALSE	FALSE	0.058	0.017	0.036	mg/kg	FALSE
67	8270 SJ	EPA 8270	EPA 3546	Pyrene	129-00-0	FALSE	FALSE	0.26	0.0016	0.036	mg/kg	FALSE
68	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
69	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.16	3.2	ug/kg	FALSE
70	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.58	0.41	3.2	ug/kg	FALSE
71	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	0.43	0.33	3.2	ug/kg	FALSE
72	8260S503(	EPA 8260	EPA 8260	Xylene (Tot	1330-20-7	FALSE	FALSE	7.6	0.8	6.4	ug/kg	FALSE
73		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	9.6	0.1	0.10	%	FALSE
74	NWDROS	NWTPH-D	EPA 3546	Diesel Range SG		FALSE	FALSE	31.8	3.4	21.5	mg/kg	FALSE
75	NWDROS	NWTPH-D	EPA 3546	Motor Oil R	64742-65-(	FALSE	FALSE	119	23.1	85.8	mg/kg	FALSE
76	NWDROS	NWTPH-D	EPA 3546	n-Octacosa	630-02-4	TRUE	FALSE	108			%	FALSE
77	NWDROS	NWTPH-D	EPA 3546	o-Terpheny	84-15-1	TRUE	FALSE	108			%	FALSE
78	NWGROS	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	3.8	0.24	6.0	mg/kg	FALSE
79	6010 ST	EPA 6010	EPA 3010	Lead	7439-92-1	FALSE	FALSE	ND	1	1.0	mg/L	FALSE
80	8270 SJ	EPA 8270	EPA 3546	1-Methylna	90-12-0	FALSE	FALSE	0.016	0.00099	0.0075	mg/kg	FALSE
81	8270 SJ	EPA 8270	EPA 3546	2-Methylna	91-57-6	FALSE	FALSE	0.030	0.002	0.0075	mg/kg	FALSE
82	8270 SJ	EPA 8270	EPA 3546	Acenaphth	83-32-9	FALSE	FALSE	ND	0.0017	0.0075	mg/kg	FALSE
83	8270 SJ	EPA 8270	EPA 3546	Acenaphth	208-96-8	FALSE	FALSE	0.0020	0.00025	0.0075	mg/kg	FALSE
84	8270 SJ	EPA 8270	EPA 3546	Anthracene	120-12-7	FALSE	FALSE	0.0050	0.00042	0.0075	mg/kg	FALSE
85	8270 SJ	EPA 8270	EPA 3546	Benzo(a)ar	56-55-3	FALSE	FALSE	0.016	0.00012	0.0075	mg/kg	FALSE
86	8270 SJ	EPA 8270	EPA 3546	Benzo(a)py	50-32-8	FALSE	FALSE	0.015	0.00018	0.0075	mg/kg	FALSE
87	8270 SJ	EPA 8270	EPA 3546	Benzo(b)flu	205-99-2	FALSE	FALSE	0.011	0.00075	0.0075	mg/kg	FALSE
88	8270 SJ	EPA 8270	EPA 3546	Benzo(g,h,	191-24-2	FALSE	FALSE	0.019	0.00033	0.0075	mg/kg	FALSE
89	8270 SJ	EPA 8270	EPA 3546	Benzo(k)flu	207-08-9	FALSE	FALSE	0.0086	0.00054	0.0075	mg/kg	FALSE
90	8270 SJ	EPA 8270	EPA 3546	Chrysene	218-01-9	FALSE	FALSE	0.021	0.00035	0.0075	mg/kg	FALSE
91	8270 SJ	EPA 8270	EPA 3546	Dibenz(a,h	53-70-3	FALSE	FALSE	0.0036	0.00031	0.0075	mg/kg	FALSE
92	8270 SJ	EPA 8270	EPA 3546	Fluoranthe	206-44-0	FALSE	FALSE	0.015	0.00087	0.0075	mg/kg	FALSE
93	8270 SJ	EPA 8270	EPA 3546	Fluorene	86-73-7	FALSE	FALSE	0.0021	0.002	0.0075	mg/kg	FALSE
94	8270 SJ	EPA 8270	EPA 3546	Indeno(1,2	193-39-5	FALSE	FALSE	0.010	0.00028	0.0075	mg/kg	FALSE
95	8270 SJ	EPA 8270	EPA 3546	Naphthaler	91-20-3	FALSE	FALSE	0.017	0.002	0.0075	mg/kg	FALSE
96	8270 SJ	EPA 8270	EPA 3546	Phenanthre	85-01-8	FALSE	FALSE	0.011	0.0035	0.0075	mg/kg	FALSE
97	8270 SJ	EPA 8270	EPA 3546	Pyrene	129-00-0	FALSE	FALSE	0.030	0.00033	0.0075	mg/kg	FALSE
98	8260 ST	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	2.9	50.0	ug/L	FALSE
99	8260S503(	EPA 8260	EPA 8260	Benzene	71-43-2	FALSE	FALSE	ND	0.16	3.2	ug/kg	FALSE
100	8260S503(	EPA 8260	EPA 8260	Ethylbenze	100-41-4	FALSE	FALSE	0.42	0.4	3.2	ug/kg	FALSE
101	8260S503(	EPA 8260	EPA 8260	Toluene	108-88-3	FALSE	FALSE	ND	0.33	3.2	ug/kg	FALSE
102	8260S503(	EPA 8260	EPA 8260	Xylene (Tot	1330-20-7	FALSE	FALSE	7.4	0.8	6.4	ug/kg	FALSE
103		ASTM D29	ASTM D29	Percent Moisture		FALSE	FALSE	11.7	0.1	0.10	%	FALSE
104	NWGROV	NWTPH-G	NWTPH-G	Gasoline Range Organ		FALSE	FALSE	ND	13.4	50.0	ug/L	FALSE
105	8260 W10I	EPA 8260	EPA 5030E	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE
106	8260 W10I	EPA 8260	EPA 5030E	Ethylbenze	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE
107	8260 W10I	EPA 8260	EPA 5030E	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE
108	8260 W10I	EPA 8260	EPA 5030E	Xylene (Tot	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
1	BASIS	DILUTION	SPIKELEV	RECOVER	UPPERCL	LOWERCL	Analyst	PSOLIDS	LNOTE	ANOTE	LATITUDE	LONGITUI
2	Dry	1					DMT	87.9	J	J		
3	Dry	1					DMT	87.9	J	J		
4	Dry	1					DMT	87.9				
5	Dry	1					DMT	87.9				
6	Dry	1					LPM	87.9	J	5n, Z2		
7	Dry	1					BGA	87.9	U			
8	Wet	1					BAG	87.9	U			
9	Dry	1					LPM	87.9	U			
10	Dry	1					LPM	87.9	J			
11	Dry	1					LPM	87.9	U			
12	Dry	1					LPM	87.9	U			
13	Dry	1					DJK	87.9				
14	Dry	1					DMT	89.9				
15	Dry	1					DMT	89.9				
16	Dry	1					DMT	89.9				
17	Dry	1					DMT	89.9				
18	Dry	1					LPM	89.9		Z2		
19	Dry	1					BGA	89.9	U			
20	Dry	1					DMT	89.9	J			
21	Dry	1					DMT	89.9	J			
22	Dry	1					DMT	89.9	U			
23	Dry	1					DMT	89.9	J			
24	Dry	1					DMT	89.9	J			
25	Dry	1					DMT	89.9	J			
26	Dry	1					DMT	89.9	J			
27	Dry	1					DMT	89.9	J			
28	Dry	1					DMT	89.9				
29	Dry	1					DMT	89.9	J			
30	Dry	1					DMT	89.9				
31	Dry	1					DMT	89.9	J			
32	Dry	1					DMT	89.9	J			
33	Dry	1					DMT	89.9	U			
34	Dry	1					DMT	89.9	J			
35	Dry	1					DMT	89.9	J	P3		
36	Dry	1					DMT	89.9	J			
37	Dry	1					DMT	89.9				
38	Wet	1					BAG	89.9	U			
39	Dry	1					LPM	89.9	U			
40	Dry	1					LPM	89.9	J			
41	Dry	1					LPM	89.9	U			
42	Dry	1					LPM	89.9				
43	Dry	1					DJK	89.9				
44	Dry	1					DMT	90.4				
45	Dry	1					DMT	90.4				
46	Dry	1					DMT	90.4				
47	Dry	1					DMT	90.4				
48	Dry	1					LPM	90.4		Z2		
49	Dry	1					BGA	90.4	U			
50	Dry	5					DMT	90.4	J			
51	Dry	5					DMT	90.4	J			
52	Dry	5					DMT	90.4	J			
53	Dry	5					DMT	90.4	J			
54	Dry	5					DMT	90.4				
55	Dry	5					DMT	90.4				
56	Dry	5					DMT	90.4				
57	Dry	5					DMT	90.4				
58	Dry	5					DMT	90.4				
59	Dry	5					DMT	90.4	J			
60	Dry	5					DMT	90.4				
61	Dry	5					DMT	90.4	J			
62	Dry	5					DMT	90.4				
63	Dry	5					DMT	90.4	J			
64	Dry	5					DMT	90.4				

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
65	Dry	5					DMT	90.4	J	3n		
66	Dry	5					DMT	90.4				
67	Dry	5					DMT	90.4				
68	Wet	1					BAG	90.4	U			
69	Dry	1					LPM	90.4	U			
70	Dry	1					LPM	90.4	J	M0		
71	Dry	1					LPM	90.4	J	M0, Z2		
72	Dry	1					LPM	90.4		M0		
73	Dry	1					DJK	90.4				
74	Dry	1					DMT	88.3				
75	Dry	1					DMT	88.3				
76	Dry	1					DMT	88.3				
77	Dry	1					DMT	88.3				
78	Dry	1					LPM	88.3	J	5n, Z2		
79	Dry	1					BGA	88.3	U			
80	Dry	1					DMT	88.3				
81	Dry	1					DMT	88.3				
82	Dry	1					DMT	88.3	U			
83	Dry	1					DMT	88.3	J			
84	Dry	1					DMT	88.3	J			
85	Dry	1					DMT	88.3				
86	Dry	1					DMT	88.3				
87	Dry	1					DMT	88.3				
88	Dry	1					DMT	88.3				
89	Dry	1					DMT	88.3				
90	Dry	1					DMT	88.3				
91	Dry	1					DMT	88.3	J			
92	Dry	1					DMT	88.3				
93	Dry	1					DMT	88.3	J			
94	Dry	1					DMT	88.3				
95	Dry	1					DMT	88.3				
96	Dry	1					DMT	88.3				
97	Dry	1					DMT	88.3				
98	Wet	1					BAG	88.3	U			
99	Dry	1					LPM	88.3	U			
100	Dry	1					LPM	88.3	J			
101	Dry	1					LPM	88.3	U			
102	Dry	1					LPM	88.3				
103	Dry	1					DJK	88.3				
104	Wet	1					LPM		U	5n		
105	Wet	1					LPM		U			
106	Wet	1					LPM		U			
107	Wet	1					LPM		U			
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Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

February 03, 2010

Bill Edmund
COP_Stantec Washington
12034 134th CT
Redmond, WA 98052

RE: Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Dear Bill Edmund:
Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross

jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Chris Carlton-Franco, Stantec
Janet Nash, Stantec

REPORT OF LABORATORY ANALYSIS

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940 South Harney
Seattle, WA 98108
(206)767-5060

CERTIFICATIONS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Washington Certification IDs
Florida/NELAP Certification #: E87617
Oregon Certification #: WA200007
Washington Certification #: C1229
940 South Harney Street Seattle, WA 98108
Alaska CS Certification #: UST-025
Alaska Drinking Water VOC Certification #: WA01-09
Alaska Drinking Water Micro Certification #: WA01230
California Certification #: 01153CA

Kansas Certification IDs
Kansas/NELAP Certification #: E-10116
Iowa Certification #: 118
Illinois Certification #: 001191
Arkansas Certification #: 05-008-0
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Oregon Certification #: KS200001
Texas Certification #: T104704407-08-TX
A2LA Certification #: 2456.01
Washington Certification #: C2069
9608 Loiret Boulevard Lenexa, KS 66219
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Lab ID	Sample ID	Matrix	Date Collected	Date Received
252856001	**BIN 178 (922)**	Solid	01/18/10 08:40	01/20/10 08:00
252856002	**BIN 158 (922)**	Solid	01/18/10 08:50	01/20/10 08:00
252856003	**BIN 181 (922)**	Solid	01/18/10 09:00	01/20/10 08:00
252856004	**BIN 193 (922)**	Solid	01/18/10 09:10	01/20/10 08:00
252856005	**TB-1 (922)**	Water	01/18/10 00:00	01/20/10 08:00

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SAMPLE ANALYTE COUNT

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
252856001	**BIN 178 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856002	**BIN 158 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8270 by SIM	DMT	21	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856003	**BIN 181 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8270 by SIM	DMT	21	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856004	**BIN 193 (922)**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8270 by SIM	DMT	21	PASI-S
		EPA 8260	BAG	5	PASI-K
		EPA 8260	LPM	8	PASI-S
252856005	**TB-1 (922)**	NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S

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(206)767-5060

ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 178 (922) **Lab ID: 252856001** Collected: 01/18/10 08:40 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**13.0J**	mg/kg	22.3	3.5	1	01/22/10 17:45	01/23/10 22:47		J
Motor Oil Range SG	**52.7J**	mg/kg	89.2	24.0	1	01/22/10 17:45	01/23/10 22:47	64742-65-0	J
n-Octacosane (S) SG	108	%	50-150		1	01/22/10 17:45	01/23/10 22:47	630-02-4	
o-Terphenyl (S) SG	104	%	50-150		1	01/22/10 17:45	01/23/10 22:47	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**0.98J**	mg/kg	6.1	0.24	1	01/20/10 17:00	01/25/10 22:01		5n,Z2
a,a,a-Trifluorotoluene (S)	99	%	50-150		1	01/20/10 17:00	01/25/10 22:01	98-08-8	
4-Bromofluorobenzene (S)	97	%	50-150		1	01/20/10 17:00	01/25/10 22:01	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:26	7439-92-1	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 04:33	71-43-2	
1,2-Dichloroethane-d4 (S)	98	%	81-121		1		02/01/10 04:33	17060-07-0	
Toluene-d8 (S)	98	%	89-111		1		02/01/10 04:33	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-115		1		02/01/10 04:33	460-00-4	
Dibromofluoromethane (S)	93	%	87-113		1		02/01/10 04:33	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.4	0.17	1		01/27/10 23:07	71-43-2	
Ethylbenzene	**0.58J**	ug/kg	3.4	0.43	1		01/27/10 23:07	100-41-4	
Toluene	ND	ug/kg	3.4	0.35	1		01/27/10 23:07	108-88-3	
Xylene (Total)	ND	ug/kg	6.8	0.84	1		01/27/10 23:07	1330-20-7	
Dibromofluoromethane (S)	92	%	80-136		1		01/27/10 23:07	1868-53-7	6n
Toluene-d8 (S)	104	%	80-120		1		01/27/10 23:07	2037-26-5	
4-Bromofluorobenzene (S)	106	%	72-122		1		01/27/10 23:07	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	80-143		1		01/27/10 23:07	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.1**	%	0.10	0.10	1		01/21/10 09:40		

Sample: BIN 158 (922) **Lab ID: 252856002** Collected: 01/18/10 08:50 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**209**	mg/kg	20.9	3.3	1	01/22/10 17:45	01/23/10 23:20		
Motor Oil Range SG	**1710**	mg/kg	83.6	22.5	1	01/22/10 17:45	01/23/10 23:20	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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940 South Harney
Seattle, WA 98108
(206)767-5060

ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 158 (922) **Lab ID: 252856002** Collected: 01/18/10 08:50 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
n-Octacosane (S) SG	100	%	50-150		1	01/22/10 17:45	01/23/10 23:20	630-02-4	
o-Terphenyl (S) SG	100	%	50-150		1	01/22/10 17:45	01/23/10 23:20	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**11.8**	mg/kg	6.1	0.24	1	01/20/10 17:00	01/25/10 22:25		Z2
a,a,a-Trifluorotoluene (S)	96	%	50-150		1	01/20/10 17:00	01/25/10 22:25	98-08-8	
4-Bromofluorobenzene (S)	95	%	50-150		1	01/20/10 17:00	01/25/10 22:25	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:45	7439-92-1	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
1-Methylnaphthalene	**0.031J**	mg/kg	0.073	0.0096	1	01/22/10 18:00	01/31/10 19:30	90-12-0	
2-Methylnaphthalene	**0.073J**	mg/kg	0.073	0.020	1	01/22/10 18:00	01/31/10 19:30	91-57-6	
Acenaphthene	ND	mg/kg	0.073	0.017	1	01/22/10 18:00	01/31/10 19:30	83-32-9	
Acenaphthylene	**0.0039J**	mg/kg	0.073	0.0025	1	01/22/10 18:00	01/31/10 19:30	208-96-8	
Anthracene	**0.020J**	mg/kg	0.073	0.0041	1	01/22/10 18:00	01/31/10 19:30	120-12-7	
Benzo(a)anthracene	**0.040J**	mg/kg	0.073	0.0012	1	01/22/10 18:00	01/31/10 19:30	56-55-3	
Benzo(a)pyrene	**0.059J**	mg/kg	0.073	0.0017	1	01/22/10 18:00	01/31/10 19:30	50-32-8	
Benzo(b)fluoranthene	**0.044J**	mg/kg	0.073	0.0073	1	01/22/10 18:00	01/31/10 19:30	205-99-2	
Benzo(g,h,i)perylene	**0.082**	mg/kg	0.073	0.0032	1	01/22/10 18:00	01/31/10 19:30	191-24-2	
Benzo(k)fluoranthene	**0.029J**	mg/kg	0.073	0.0052	1	01/22/10 18:00	01/31/10 19:30	207-08-9	
Chrysene	**0.13**	mg/kg	0.073	0.0034	1	01/22/10 18:00	01/31/10 19:30	218-01-9	
Dibenz(a,h)anthracene	**0.027J**	mg/kg	0.073	0.0030	1	01/22/10 18:00	01/31/10 19:30	53-70-3	
Fluoranthene	**0.043J**	mg/kg	0.073	0.0085	1	01/22/10 18:00	01/31/10 19:30	206-44-0	
Fluorene	ND	mg/kg	0.073	0.020	1	01/22/10 18:00	01/31/10 19:30	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.024J**	mg/kg	0.073	0.0027	1	01/22/10 18:00	01/31/10 19:30	193-39-5	
Naphthalene	**0.029J**	mg/kg	0.073	0.019	1	01/22/10 18:00	01/31/10 19:30	91-20-3	P3
Phenanthrene	**0.046J**	mg/kg	0.073	0.034	1	01/22/10 18:00	01/31/10 19:30	85-01-8	
Pyrene	**0.18**	mg/kg	0.073	0.0032	1	01/22/10 18:00	01/31/10 19:30	129-00-0	
Nitrobenzene-d5 (S)	58	%	63-138		1	01/22/10 18:00	01/31/10 19:30	4165-60-0	1n,S0
2-Fluorobiphenyl (S)	84	%	55-136		1	01/22/10 18:00	01/31/10 19:30	321-60-8	
Terphenyl-d14 (S)	89	%	60-144		1	01/22/10 18:00	01/31/10 19:30	1718-51-0	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 05:07	71-43-2	
1,2-Dichloroethane-d4 (S)	103	%	81-121		1		02/01/10 05:07	17060-07-0	
Toluene-d8 (S)	99	%	89-111		1		02/01/10 05:07	2037-26-5	
4-Bromofluorobenzene (S)	101	%	87-115		1		02/01/10 05:07	460-00-4	
Dibromofluoromethane (S)	97	%	87-113		1		02/01/10 05:07	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	2.9	0.14	1		01/27/10 23:27	71-43-2	

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940 South Harney
Seattle, WA 98108
(206)767-5060

ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 158 (922) **Lab ID: 252856002** Collected: 01/18/10 08:50 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030	Analytical Method: EPA 8260								
Ethylbenzene	**0.70J**	ug/kg	2.9	0.37	1		01/27/10 23:27	100-41-4	
Toluene	ND	ug/kg	2.9	0.30	1		01/27/10 23:27	108-88-3	
Xylene (Total)	**9.7**	ug/kg	5.8	0.72	1		01/27/10 23:27	1330-20-7	
Dibromofluoromethane (S)	91	%	80-136		1		01/27/10 23:27	1868-53-7	6n
Toluene-d8 (S)	104	%	80-120		1		01/27/10 23:27	2037-26-5	
4-Bromofluorobenzene (S)	109	%	72-122		1		01/27/10 23:27	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	80-143		1		01/27/10 23:27	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**10.1**	%	0.10	0.10	1		01/21/10 09:42		

Sample: BIN 181 (922) **Lab ID: 252856003** Collected: 01/18/10 09:00 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**412**	mg/kg	21.0	3.3	1	01/22/10 17:45	01/23/10 23:36		
Motor Oil Range SG	**895**	mg/kg	84.0	22.6	1	01/22/10 17:45	01/23/10 23:36	64742-65-0	
n-Octacosane (S) SG	122	%	50-150		1	01/22/10 17:45	01/23/10 23:36	630-02-4	
o-Terphenyl (S) SG	80	%	50-150		1	01/22/10 17:45	01/23/10 23:36	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**16.8**	mg/kg	5.7	0.23	1	01/20/10 17:00	01/25/10 23:14		Z2
a,a,a-Trifluorotoluene (S)	103	%	50-150		1	01/20/10 17:00	01/25/10 23:14	98-08-8	
4-Bromofluorobenzene (S)	103	%	50-150		1	01/20/10 17:00	01/25/10 23:14	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:48	7439-92-1	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
1-Methylnaphthalene	**0.013J**	mg/kg	0.036	0.0048	5	01/22/10 18:00	01/31/10 19:12	90-12-0	
2-Methylnaphthalene	**0.029J**	mg/kg	0.036	0.0099	5	01/22/10 18:00	01/31/10 19:12	91-57-6	
Acenaphthene	**0.024J**	mg/kg	0.036	0.0084	5	01/22/10 18:00	01/31/10 19:12	83-32-9	
Acenaphthylene	**0.013J**	mg/kg	0.036	0.0012	5	01/22/10 18:00	01/31/10 19:12	208-96-8	
Anthracene	**0.059**	mg/kg	0.036	0.0020	5	01/22/10 18:00	01/31/10 19:12	120-12-7	
Benzo(a)anthracene	**0.079**	mg/kg	0.036	0.00058	5	01/22/10 18:00	01/31/10 19:12	56-55-3	
Benzo(a)pyrene	**0.072**	mg/kg	0.036	0.00087	5	01/22/10 18:00	01/31/10 19:12	50-32-8	
Benzo(b)fluoranthene	**0.056**	mg/kg	0.036	0.0036	5	01/22/10 18:00	01/31/10 19:12	205-99-2	
Benzo(g,h,i)perylene	**0.11**	mg/kg	0.036	0.0016	5	01/22/10 18:00	01/31/10 19:12	191-24-2	
Benzo(k)fluoranthene	**0.024J**	mg/kg	0.036	0.0026	5	01/22/10 18:00	01/31/10 19:12	207-08-9	
Chrysene	**0.19**	mg/kg	0.036	0.0017	5	01/22/10 18:00	01/31/10 19:12	218-01-9	

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 181 (922) **Lab ID: 252856003** Collected: 01/18/10 09:00 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Dibenz(a,h)anthracene	**0.029J**	mg/kg	0.036	0.0015	5	01/22/10 18:00	01/31/10 19:12	53-70-3	
Fluoranthene	**0.075**	mg/kg	0.036	0.0043	5	01/22/10 18:00	01/31/10 19:12	206-44-0	
Fluorene	**0.027J**	mg/kg	0.036	0.0098	5	01/22/10 18:00	01/31/10 19:12	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.052**	mg/kg	0.036	0.0014	5	01/22/10 18:00	01/31/10 19:12	193-39-5	
Naphthalene	**0.022J**	mg/kg	0.036	0.0097	5	01/22/10 18:00	01/31/10 19:12	91-20-3	3n
Phenanthrene	**0.058**	mg/kg	0.036	0.017	5	01/22/10 18:00	01/31/10 19:12	85-01-8	
Pyrene	**0.26**	mg/kg	0.036	0.0016	5	01/22/10 18:00	01/31/10 19:12	129-00-0	
Nitrobenzene-d5 (S)	67	%	63-138		5	01/22/10 18:00	01/31/10 19:12	4165-60-0	
2-Fluorobiphenyl (S)	98	%	55-136		5	01/22/10 18:00	01/31/10 19:12	321-60-8	
Terphenyl-d14 (S)	105	%	60-144		5	01/22/10 18:00	01/31/10 19:12	1718-51-0	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 05:24	71-43-2	
1,2-Dichloroethane-d4 (S)	105	%	81-121		1		02/01/10 05:24	17060-07-0	
Toluene-d8 (S)	100	%	89-111		1		02/01/10 05:24	2037-26-5	
4-Bromofluorobenzene (S)	103	%	87-115		1		02/01/10 05:24	460-00-4	
Dibromofluoromethane (S)	98	%	87-113		1		02/01/10 05:24	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.2	0.16	1		01/27/10 23:47	71-43-2	
Ethylbenzene	**0.58J**	ug/kg	3.2	0.41	1		01/27/10 23:47	100-41-4	M0
Toluene	**0.43J**	ug/kg	3.2	0.33	1		01/27/10 23:47	108-88-3	M0,Z2
Xylene (Total)	**7.6**	ug/kg	6.4	0.80	1		01/27/10 23:47	1330-20-7	M0
Dibromofluoromethane (S)	92	%	80-136		1		01/27/10 23:47	1868-53-7	6n
Toluene-d8 (S)	102	%	80-120		1		01/27/10 23:47	2037-26-5	
4-Bromofluorobenzene (S)	110	%	72-122		1		01/27/10 23:47	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	80-143		1		01/27/10 23:47	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**9.6**	%	0.10	0.10	1		01/21/10 09:49		

Sample: BIN 193 (922) **Lab ID: 252856004** Collected: 01/18/10 09:10 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3546								
Diesel Range SG	**31.8**	mg/kg	21.5	3.4	1	01/22/10 17:45	01/23/10 23:52		
Motor Oil Range SG	**119**	mg/kg	85.8	23.1	1	01/22/10 17:45	01/23/10 23:52	64742-65-0	
n-Octacosane (S) SG	108	%	50-150		1	01/22/10 17:45	01/23/10 23:52	630-02-4	
o-Terphenyl (S) SG	108	%	50-150		1	01/22/10 17:45	01/23/10 23:52	84-15-1	

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 193 (922) **Lab ID: 252856004** Collected: 01/18/10 09:10 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Preparation Method: NWTPH-Gx								
Gasoline Range Organics	**3.8J**	mg/kg	6.0	0.24	1	01/20/10 17:00	01/26/10 00:03		5n,Z2
a,a,a-Trifluorotoluene (S)	83	%	50-150		1	01/20/10 17:00	01/26/10 00:03	98-08-8	
4-Bromofluorobenzene (S)	78	%	50-150		1	01/20/10 17:00	01/26/10 00:03	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 01/21/10 15:29								
Lead	ND	mg/L	1.0	1.0	1	01/22/10 08:52	01/22/10 15:51	7439-92-1	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
1-Methylnaphthalene	**0.016**	mg/kg	0.0075	0.00099	1	01/22/10 18:00	01/31/10 18:55	90-12-0	
2-Methylnaphthalene	**0.030**	mg/kg	0.0075	0.0020	1	01/22/10 18:00	01/31/10 18:55	91-57-6	
Acenaphthene	ND	mg/kg	0.0075	0.0017	1	01/22/10 18:00	01/31/10 18:55	83-32-9	
Acenaphthylene	**0.0020J**	mg/kg	0.0075	0.00025	1	01/22/10 18:00	01/31/10 18:55	208-96-8	
Anthracene	**0.0050J**	mg/kg	0.0075	0.00042	1	01/22/10 18:00	01/31/10 18:55	120-12-7	
Benzo(a)anthracene	**0.016**	mg/kg	0.0075	0.00012	1	01/22/10 18:00	01/31/10 18:55	56-55-3	
Benzo(a)pyrene	**0.015**	mg/kg	0.0075	0.00018	1	01/22/10 18:00	01/31/10 18:55	50-32-8	
Benzo(b)fluoranthene	**0.011**	mg/kg	0.0075	0.00075	1	01/22/10 18:00	01/31/10 18:55	205-99-2	
Benzo(g,h,i)perylene	**0.019**	mg/kg	0.0075	0.00033	1	01/22/10 18:00	01/31/10 18:55	191-24-2	
Benzo(k)fluoranthene	**0.0086**	mg/kg	0.0075	0.00054	1	01/22/10 18:00	01/31/10 18:55	207-08-9	
Chrysene	**0.021**	mg/kg	0.0075	0.00035	1	01/22/10 18:00	01/31/10 18:55	218-01-9	
Dibenz(a,h)anthracene	**0.0036J**	mg/kg	0.0075	0.00031	1	01/22/10 18:00	01/31/10 18:55	53-70-3	
Fluoranthene	**0.015**	mg/kg	0.0075	0.00087	1	01/22/10 18:00	01/31/10 18:55	206-44-0	
Fluorene	**0.0021J**	mg/kg	0.0075	0.0020	1	01/22/10 18:00	01/31/10 18:55	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.010**	mg/kg	0.0075	0.00028	1	01/22/10 18:00	01/31/10 18:55	193-39-5	
Naphthalene	**0.017**	mg/kg	0.0075	0.0020	1	01/22/10 18:00	01/31/10 18:55	91-20-3	
Phenanthrene	**0.011**	mg/kg	0.0075	0.0035	1	01/22/10 18:00	01/31/10 18:55	85-01-8	
Pyrene	**0.030**	mg/kg	0.0075	0.00033	1	01/22/10 18:00	01/31/10 18:55	129-00-0	
Nitrobenzene-d5 (S)	65	%	63-138		1	01/22/10 18:00	01/31/10 18:55	4165-60-0	
2-Fluorobiphenyl (S)	73	%	55-136		1	01/22/10 18:00	01/31/10 18:55	321-60-8	
Terphenyl-d14 (S)	83	%	60-144		1	01/22/10 18:00	01/31/10 18:55	1718-51-0	
8260 MSV TCLP	Analytical Method: EPA 8260								
Benzene	ND	ug/L	50.0	2.9	1		02/01/10 05:41	71-43-2	
1,2-Dichloroethane-d4 (S)	106	%	81-121		1		02/01/10 05:41	17060-07-0	
Toluene-d8 (S)	100	%	89-111		1		02/01/10 05:41	2037-26-5	
4-Bromofluorobenzene (S)	98	%	87-115		1		02/01/10 05:41	460-00-4	
Dibromofluoromethane (S)	97	%	87-113		1		02/01/10 05:41	1868-53-7	
8260 MSV 5030	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	3.2	0.16	1		01/28/10 00:08	71-43-2	
Ethylbenzene	**0.42J**	ug/kg	3.2	0.40	1		01/28/10 00:08	100-41-4	
Toluene	ND	ug/kg	3.2	0.33	1		01/28/10 00:08	108-88-3	
Xylene (Total)	**7.4**	ug/kg	6.4	0.80	1		01/28/10 00:08	1330-20-7	
Dibromofluoromethane (S)	91	%	80-136		1		01/28/10 00:08	1868-53-7	6n

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ANALYTICAL RESULTS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Sample: BIN 193 (922) **Lab ID: 252856004** Collected: 01/18/10 09:10 Received: 01/20/10 08:00 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030	Analytical Method: EPA 8260								
Toluene-d8 (S)	104	%	80-120		1		01/28/10 00:08	2037-26-5	
4-Bromofluorobenzene (S)	107	%	72-122		1		01/28/10 00:08	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	80-143		1		01/28/10 00:08	17060-07-0	
	Analytical Method: ASTM D2974-87								
Percent Moisture	**11.7**	%	0.10	0.10	1		01/21/10 09:53		

Sample: TB-1 (922) **Lab ID: 252856005** Collected: 01/18/10 00:00 Received: 01/20/10 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx								
Gasoline Range Organics	ND	ug/L	50.0	13.4	1		01/25/10 20:23		5n
a,a,a-Trifluorotoluene (S)	112	%	50-150		1		01/25/10 20:23	98-08-8	
4-Bromofluorobenzene (S)	114	%	50-150		1		01/25/10 20:23	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	ND	ug/L	1.0	0.12	1		01/26/10 20:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		01/26/10 20:47	100-41-4	
Toluene	ND	ug/L	1.0	0.21	1		01/26/10 20:47	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		01/26/10 20:47	1330-20-7	
4-Bromofluorobenzene (S)	102	%	80-120		1		01/26/10 20:47	460-00-4	5n
Dibromofluoromethane (S)	90	%	80-122		1		01/26/10 20:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	94	%	80-124		1		01/26/10 20:47	17060-07-0	
Toluene-d8 (S)	104	%	80-123		1		01/26/10 20:47	2037-26-5	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: OEXT/1804 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3546 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19484 Matrix: Solid
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range SG	mg/kg	ND	20.0	01/23/10 22:14	4n
Motor Oil Range SG	mg/kg	ND	80.0	01/23/10 22:14	
n-Octacosane (S) SG	%	111	50-150	01/23/10 22:14	
o-Terphenyl (S) SG	%	107	50-150	01/23/10 22:14	

LABORATORY CONTROL SAMPLE: 19485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range SG	mg/kg	500	434	87	56-124	
Motor Oil Range SG	mg/kg	500	485	97	50-150	
n-Octacosane (S) SG	%			87	50-150	
o-Terphenyl (S) SG	%			67	50-150	

SAMPLE DUPLICATE: 19486

Parameter	Units	252856001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range SG	mg/kg	13.0J	10.3J		50	
Motor Oil Range SG	mg/kg	52.7J	34.0J		50	
n-Octacosane (S) SG	%	108	114	5		
o-Terphenyl (S) SG	%	104	111	6		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: GCV/1420 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Solid GCV
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19685 Matrix: Solid
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	0.62J	5.0	01/25/10 21:36	5n
4-Bromofluorobenzene (S)	%	65	50-150	01/25/10 21:36	
a,a,a-Trifluorotoluene (S)	%	69	50-150	01/25/10 21:36	

LABORATORY CONTROL SAMPLE: 19686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	12.5	13.1	105	54-156	
4-Bromofluorobenzene (S)	%			95	50-150	
a,a,a-Trifluorotoluene (S)	%			101	50-150	

SAMPLE DUPLICATE: 19786

Parameter	Units	252856003 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	16.8	13.9	19	50	
4-Bromofluorobenzene (S)	%	103	89	14		
a,a,a-Trifluorotoluene (S)	%	103	93	9		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: GCV/1421
QC Batch Method: NWTPH-Gx
Analysis Method: NWTPH-Gx
Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 252856005

METHOD BLANK: 19687 Matrix: Water
Associated Lab Samples: 252856005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	14.6J	50.0	01/25/10 07:07	5n
4-Bromofluorobenzene (S)	%	106	50-150	01/25/10 07:07	
a,a,a-Trifluorotoluene (S)	%	116	50-150	01/25/10 07:07	

LABORATORY CONTROL SAMPLE: 19688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	300	120	50-163	
4-Bromofluorobenzene (S)	%			108	50-150	
a,a,a-Trifluorotoluene (S)	%			113	50-150	

SAMPLE DUPLICATE: 19756

Parameter	Units	252868001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		30	
4-Bromofluorobenzene (S)	%	104	120	14		
a,a,a-Trifluorotoluene (S)	%	111	122	9		

SAMPLE DUPLICATE: 19757

Parameter	Units	252883001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		30	
4-Bromofluorobenzene (S)	%	121	121	.2		
a,a,a-Trifluorotoluene (S)	%	118	118	.7		

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MPRP/1430 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19573 Matrix: Water
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/L	ND	1.0	01/22/10 15:21	

LABORATORY CONTROL SAMPLE: 19574

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	.5	0.46	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19575 19576

Parameter	Units	252856001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	5	5	4.7	4.5	93	90	75-125	3	20	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: OEXT/1805 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3546 Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 252856002, 252856003, 252856004

METHOD BLANK: 19487 Matrix: Solid
Associated Lab Samples: 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	mg/kg	ND	0.0067	01/23/10 22:04	
2-Methylnaphthalene	mg/kg	ND	0.0067	01/23/10 22:04	
Acenaphthene	mg/kg	ND	0.0067	01/23/10 22:04	
Acenaphthylene	mg/kg	ND	0.0067	01/23/10 22:04	
Anthracene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(a)anthracene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(a)pyrene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(b)fluoranthene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(g,h,i)perylene	mg/kg	ND	0.0067	01/23/10 22:04	
Benzo(k)fluoranthene	mg/kg	ND	0.0067	01/23/10 22:04	
Chrysene	mg/kg	ND	0.0067	01/23/10 22:04	
Dibenz(a,h)anthracene	mg/kg	ND	0.0067	01/23/10 22:04	
Fluoranthene	mg/kg	ND	0.0067	01/23/10 22:04	
Fluorene	mg/kg	ND	0.0067	01/23/10 22:04	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.0067	01/23/10 22:04	
Naphthalene	mg/kg	ND	0.0067	01/23/10 22:04	
Phenanthrene	mg/kg	ND	0.0067	01/23/10 22:04	
Pyrene	mg/kg	ND	0.0067	01/23/10 22:04	
2-Fluorobiphenyl (S)	%	86	55-136	01/23/10 22:04	
Nitrobenzene-d5 (S)	%	87	63-138	01/23/10 22:04	
Terphenyl-d14 (S)	%	100	60-144	01/23/10 22:04	

LABORATORY CONTROL SAMPLE: 19488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	mg/kg	.083	0.077	92	61-132	
2-Methylnaphthalene	mg/kg	.083	0.080	96	56-153	
Acenaphthene	mg/kg	.083	0.074	88	49-141	
Acenaphthylene	mg/kg	.083	0.064	77	53-139	
Anthracene	mg/kg	.083	0.080	96	53-148	
Benzo(a)anthracene	mg/kg	.083	0.076	91	42-146	
Benzo(a)pyrene	mg/kg	.083	0.079	95	34-147	
Benzo(b)fluoranthene	mg/kg	.083	0.081	97	33-154	
Benzo(g,h,i)perylene	mg/kg	.083	0.084	101	47-148	
Benzo(k)fluoranthene	mg/kg	.083	0.086	104	61-152	
Chrysene	mg/kg	.083	0.083	100	57-145	
Dibenz(a,h)anthracene	mg/kg	.083	0.085	102	55-154	
Fluoranthene	mg/kg	.083	0.082	98	32-150	
Fluorene	mg/kg	.083	0.070	84	45-152	
Indeno(1,2,3-cd)pyrene	mg/kg	.083	0.084	101	35-151	
Naphthalene	mg/kg	.083	0.079	94	44-140	

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Seattle, WA 98108
(206)767-5060

QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

LABORATORY CONTROL SAMPLE: 19488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	mg/kg	.083	0.082	99	38-155	
Pyrene	mg/kg	.083	0.079	95	51-153	
2-Fluorobiphenyl (S)	%			82	55-136	
Nitrobenzene-d5 (S)	%			79	63-138	
Terphenyl-d14 (S)	%			90	60-144	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 19489 19490

Parameter	Units	252856002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	mg/kg	0.031J	.091	.092	0.097	0.098	72	73	61-132	1	30	
2-Methylnaphthalene	mg/kg	0.073J	.091	.092	0.14	0.14	70	72	56-153	1	30	
Acenaphthene	mg/kg	ND	.091	.092	0.077	0.071J	84	78	49-141		30	
Acenaphthylene	mg/kg	0.0039J	.091	.092	0.082	0.084	85	87	53-139	2	30	
Anthracene	mg/kg	0.020J	.091	.092	0.075	0.072J	60	57	53-148		30	
Benzo(a)anthracene	mg/kg	0.040J	.091	.092	0.13	0.11	93	77	42-146	13	30	
Benzo(a)pyrene	mg/kg	0.059J	.091	.092	0.12	0.11	61	57	34-147	3	30	
Benzo(b)fluoranthene	mg/kg	0.044J	.091	.092	0.12	0.11	85	75	33-154	8	30	
Benzo(g,h,i)perylene	mg/kg	0.082	.091	.092	0.13	0.11	52	36	47-148	12	30	M0
Benzo(k)fluoranthene	mg/kg	0.029J	.091	.092	0.087	0.082	63	57	61-152	7	30	M0
Chrysene	mg/kg	0.13	.091	.092	0.17	0.17	41	38	57-145	2	30	M0
Dibenz(a,h)anthracene	mg/kg	0.027J	.091	.092	0.090	0.083	69	61	55-154	9	30	
Fluoranthene	mg/kg	0.043J	.091	.092	0.12	0.10	81	62	32-150	16	30	
Fluorene	mg/kg	ND	.091	.092	0.083	0.081	76	74	45-152	2	30	
Indeno(1,2,3-cd)pyrene	mg/kg	0.024J	.091	.092	0.089	0.081	72	62	35-151	10	30	
Naphthalene	mg/kg	0.029J	.091	.092	0.097	0.10	74	79	44-140	5	30	2n,P3
Phenanthrene	mg/kg	0.046J	.091	.092	0.11	0.098	71	56	38-155	13	30	
Pyrene	mg/kg	0.18	.091	.092	0.16	0.15	-25	-31	51-153	4	30	M0
2-Fluorobiphenyl (S)	%						76	74	55-136			
Nitrobenzene-d5 (S)	%						55	49	63-138			S0
Terphenyl-d14 (S)	%						76	71	60-144			

REPORT OF LABORATORY ANALYSIS

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(206)767-5060

QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MSV/26495 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 597277 Matrix: Water
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	50.0	02/01/10 04:16	
1,2-Dichloroethane-d4 (S)	%	102	81-121	02/01/10 04:16	
4-Bromofluorobenzene (S)	%	99	87-115	02/01/10 04:16	
Dibromofluoromethane (S)	%	95	87-113	02/01/10 04:16	
Toluene-d8 (S)	%	102	89-111	02/01/10 04:16	

LABORATORY CONTROL SAMPLE: 597278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	500	472	94	81-114	
1,2-Dichloroethane-d4 (S)	%			99	81-121	
4-Bromofluorobenzene (S)	%			100	87-115	
Dibromofluoromethane (S)	%			100	87-113	
Toluene-d8 (S)	%			99	89-111	

MATRIX SPIKE SAMPLE: 597279

Parameter	Units	252856001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	ND	500	225	45	65-140	M0
1,2-Dichloroethane-d4 (S)	%				102	81-121	
4-Bromofluorobenzene (S)	%				102	87-115	
Dibromofluoromethane (S)	%				99	87-113	
Toluene-d8 (S)	%				101	89-111	

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MSV/1940
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 252856005

METHOD BLANK: 19790 Matrix: Water
Associated Lab Samples: 252856005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/26/10 17:46	
Ethylbenzene	ug/L	ND	1.0	01/26/10 17:46	
Toluene	ug/L	ND	1.0	01/26/10 17:46	
Xylene (Total)	ug/L	ND	3.0	01/26/10 17:46	
1,2-Dichloroethane-d4 (S)	%	94	80-124	01/26/10 17:46	
4-Bromofluorobenzene (S)	%	103	80-120	01/26/10 17:46	5n
Dibromofluoromethane (S)	%	92	80-122	01/26/10 17:46	
Toluene-d8 (S)	%	103	80-123	01/26/10 17:46	

LABORATORY CONTROL SAMPLE & LCSD: 19791 19792

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	20.5	19.8	103	99	75-124	3	30	
Ethylbenzene	ug/L	20	17.3	16.5	87	82	76-124	5	30	
Toluene	ug/L	20	18.6	17.8	93	89	75-124	4	30	
Xylene (Total)	ug/L	60	50.3	48.2	84	80	76-123	4	30	
1,2-Dichloroethane-d4 (S)	%				99	98	80-124			
4-Bromofluorobenzene (S)	%				100	100	80-120			
Dibromofluoromethane (S)	%				99	101	80-122			
Toluene-d8 (S)	%				95	95	80-123			

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: MSV/1944 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5030 Volatile Organics
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

METHOD BLANK: 19876 Matrix: Solid
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	3.0	01/27/10 18:03	
Ethylbenzene	ug/kg	ND	3.0	01/27/10 18:03	
Toluene	ug/kg	0.37J	3.0	01/27/10 18:03	
Xylene (Total)	ug/kg	ND	6.0	01/27/10 18:03	
1,2-Dichloroethane-d4 (S)	%	96	80-143	01/27/10 18:03	
4-Bromofluorobenzene (S)	%	105	72-122	01/27/10 18:03	
Dibromofluoromethane (S)	%	96	80-136	01/27/10 18:03	6n
Toluene-d8 (S)	%	109	80-120	01/27/10 18:03	

LABORATORY CONTROL SAMPLE: 19877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	40	51.2	128	68-124	L3
Ethylbenzene	ug/kg	40	51.1	128	63-131	
Toluene	ug/kg	40	46.4	116	61-126	
Xylene (Total)	ug/kg	120	135	113	68-129	
1,2-Dichloroethane-d4 (S)	%			101	80-143	
4-Bromofluorobenzene (S)	%			99	72-122	
Dibromofluoromethane (S)	%			105	80-136	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20009 20010

Parameter	Units	252856003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	ND	43.5	40.7	31.7	32.3	73	79	68-124	2	30	
Ethylbenzene	ug/kg	0.58J	43.5	40.7	19.8	21.9	44	52	63-131	10	30	M0
Toluene	ug/kg	0.43J	43.5	40.7	24.7	26.3	56	64	61-126	6	30	M0
Xylene (Total)	ug/kg	7.6	131	122	57.0	62.8	38	45	68-129	10	30	M0
1,2-Dichloroethane-d4 (S)	%						102	102	80-143			
4-Bromofluorobenzene (S)	%						109	107	72-122			
Dibromofluoromethane (S)	%						103	105	80-136			
Toluene-d8 (S)	%						103	102	80-120			

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QUALITY CONTROL DATA

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

QC Batch: PMST/1152 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 252856001, 252856002, 252856003, 252856004

SAMPLE DUPLICATE: 19491

Parameter	Units	252856001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.1	13.6	11	30	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

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LABORATORIES

PASI-K	Pace Analytical Services - Kansas City
PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

1n	Low surrogate recovery confirmed by the matrix spike/duplicate sample performed.
2n	Matrix spike sample does not provide reliable recovery data due to sample matrix; sample unable to be concentrated to routine final volume.
3n	Sample evaluated at dilution due to matrix interference and chromatographic interference.
4n	Sample evaluated to the mdl for all compounds.
5n	Sample was evaluated to the MDL.
6n	Sample was reported to the MDL.
J	Analyte detected below reporting limit, therefore result is an estimate.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
S0	Surrogate recovery outside laboratory control limits.
Z2	Analyte present in the associated method blank above the detection limit.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 00922-Asphalt Work Area 2 PDX
Pace Project No.: 252856

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
252856001	**BIN 178 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856002	**BIN 158 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856003	**BIN 181 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856004	**BIN 193 (922)**	EPA 3546	OEXT/1804	NWTPH-Dx	GCSV/1428
252856001	**BIN 178 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856002	**BIN 158 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856003	**BIN 181 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856004	**BIN 193 (922)**	NWTPH-Gx	GCV/1420	NWTPH-Gx	GCV/1422
252856005	**TB-1 (922)**	NWTPH-Gx	GCV/1421		
252856001	**BIN 178 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856002	**BIN 158 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856003	**BIN 181 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856004	**BIN 193 (922)**	EPA 3010	MPRP/1430	EPA 6010	ICP/1355
252856002	**BIN 158 (922)**	EPA 3546	OEXT/1805	EPA 8270 by SIM	MSSV/1199
252856003	**BIN 181 (922)**	EPA 3546	OEXT/1805	EPA 8270 by SIM	MSSV/1199
252856004	**BIN 193 (922)**	EPA 3546	OEXT/1805	EPA 8270 by SIM	MSSV/1199
252856001	**BIN 178 (922)**	EPA 8260	MSV/26495		
252856002	**BIN 158 (922)**	EPA 8260	MSV/26495		
252856003	**BIN 181 (922)**	EPA 8260	MSV/26495		
252856004	**BIN 193 (922)**	EPA 8260	MSV/26495		
252856005	**TB-1 (922)**	EPA 5030B/8260	MSV/1940		
252856001	**BIN 178 (922)**	EPA 8260	MSV/1944		
252856002	**BIN 158 (922)**	EPA 8260	MSV/1944		
252856003	**BIN 181 (922)**	EPA 8260	MSV/1944		
252856004	**BIN 193 (922)**	EPA 8260	MSV/1944		

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C. USTODY / Analytical Request Document

The Chain-o. LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: / of

1306113

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Stantec	Report To: bill.edmund@stantec.com	Attention: ConocoPhillips
Address: 7730 SW Mohawk St. Tualatin, OR 97062	Copy To: chris.carltonfranco@stantec.com	Company Name:
Email To: Bill Edmund	Purchase Order No.: 4512826035	Address:
Phone: (503) 691-2030 Fax: (503)-692-7074	Project Name: Asphalt work Area 2, PDX Terminal	Pace Quote Reference:
Requested Due Date/TAT: STD	Project Number: 212302313	Pace Project Manager:
		Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: OR

Section D Required Client Information

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	NWTPH-Dx	NWTPH-Dx w/ silica gel cleanup	8270 SIM if diesel detected	BTEX	TCLP Benzene	TCLP Lead	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Bin #178 (922)	SL	G	18 Jan 10	0840				2	2								X	X		X	X	X	X		252856-001
2	Bin 158 (922)	SL	G	18 Jan 10	0850				2	2								X	X		X	X	X	X		002
3	Bin 181 (922)	SL	G	18 Jan 10	0900				2	2								X	X		X	X	X	X		003
4	Bin 193 (922)	SL	G	19 Jan 10	0910				2	2								X	X		X	X	X	X		004
5	TB-1	WT	-	18 Jan 10					2									X			X					005
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	CCF / Stantec	19 Jan 10	1200	Andy By Pace	1/20/10	0800	2.4	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chris Carlton-Franco

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 18 Jan 10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Stantec Project # 252856

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other PCS

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used Horiba 132013 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: _____

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☐Yes	☑No	☐N/A
Short Hold Time Analysis (<72hr):	☑Yes	☐No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A
Sufficient Volume:	☑Yes	☐No	☐N/A
Correct Containers Used:	☑Yes	☐No	☐N/A
-Pace Containers Used:	☑Yes	☐No	☐N/A
Containers Intact:	☑Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A
Sample Labels match COC:	☑Yes	☐No	☐N/A
-Includes date/time/ID/Analysis Matrix: Soil			
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No	
Samples checked for dechlorination:	☐Yes	☐No	☑N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A
Trip Blank Present:	☑Yes	☐No	☐N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☐N/A
Pace Trip Blank Lot # (if purchased): _____			

1.
2.
3.
4.
5. Samples recieved outside of 48 hr. extraction
6. Analyze requirement by COP
7.
8.
9. Water trip blanks recieved for Soil Samples.
10.
11.
12.
13.

Initial when completed	Lot # of added preservative

14.
15.
16. See number 9.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: JENNI GROSS Date: 1/20/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003rev.3, 11September2006

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From: Jessica Eckart
Sent: Wednesday, February 10, 2010 11:31 PM
To: ROMERO Mike; thiessen.kenneth@deq.state.or.us
CC: Tim Browning (Delta); Sprick, Grant; Edmund, Bill; Rob Truedinger (KinderMorgan); Hunter, Brett (BLHU); Smith, Myron - Environmental:
Subject: WTG Project Schedule
Attachments: Revised 1-25-10 Start-Finish WTG FS Data Gap Evaluation Schedule - Gantt.pdf

Please find attached an updated WTG project schedule.

Jessica Eckart, RG | Project Manager | North American Operations
Delta Consultants, an Oranjewoud N.V. Company
4640 SW Macadam Avenue, Suite 110, Portland, OR 97239
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jeckart@deltaenv.com <mailto:jeckart@deltaenv.com> | www.deltaenv.com <http://www.deltaenv.com/>

SUSTAINABLE STRATEGIES FOR GLOBAL LEADERS

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WILLBRIDGE TERMINAL GROUP SCHEDULE

ID	Task Name	Start	Finish
1	**2010 DEQ MEETINGS**	**3/25/2010**	**12/16/2010**
2	First Quarter 2010	3/25/2010	3/25/2010
3	Second Quarter 2010	6/17/2010	6/17/2010
4	Third Quarter 2010	9/23/2010	9/23/2010
5	Fourth Quarter 2010	12/16/2010	12/16/2010
6	**GROUNDWATER PATHWAY EVALUATION**	**1/5/2010**	**3/1/2010**
7	**Paramount Well Assessment**	**1/5/2010**	**3/1/2010**
8	Letter Report Addendum	1/5/2010	3/1/2010
9	**STORM WATER PATHWAY EVALUATION**	**3/31/2010**	**11/4/2010**
10	**ConocoPhillips Storm Water**	**10/4/2010**	**11/4/2010**
11	Storm Water Source Control Report	10/4/2010	10/4/2010
12	DEQ Review and Approval	10/4/2010	11/4/2010
13	**Kinder Morgan Storm Water**	**10/4/2010**	**11/4/2010**
14	Storm Water Source Control Report Submittal	10/4/2010	10/4/2010
15	DEQ Review and Approval	10/4/2010	11/4/2010
16	**Chevron Storm Water**	**3/31/2010**	**4/30/2010**
17	Storm Water Source Control Report Submittal	3/31/2010	3/31/2010
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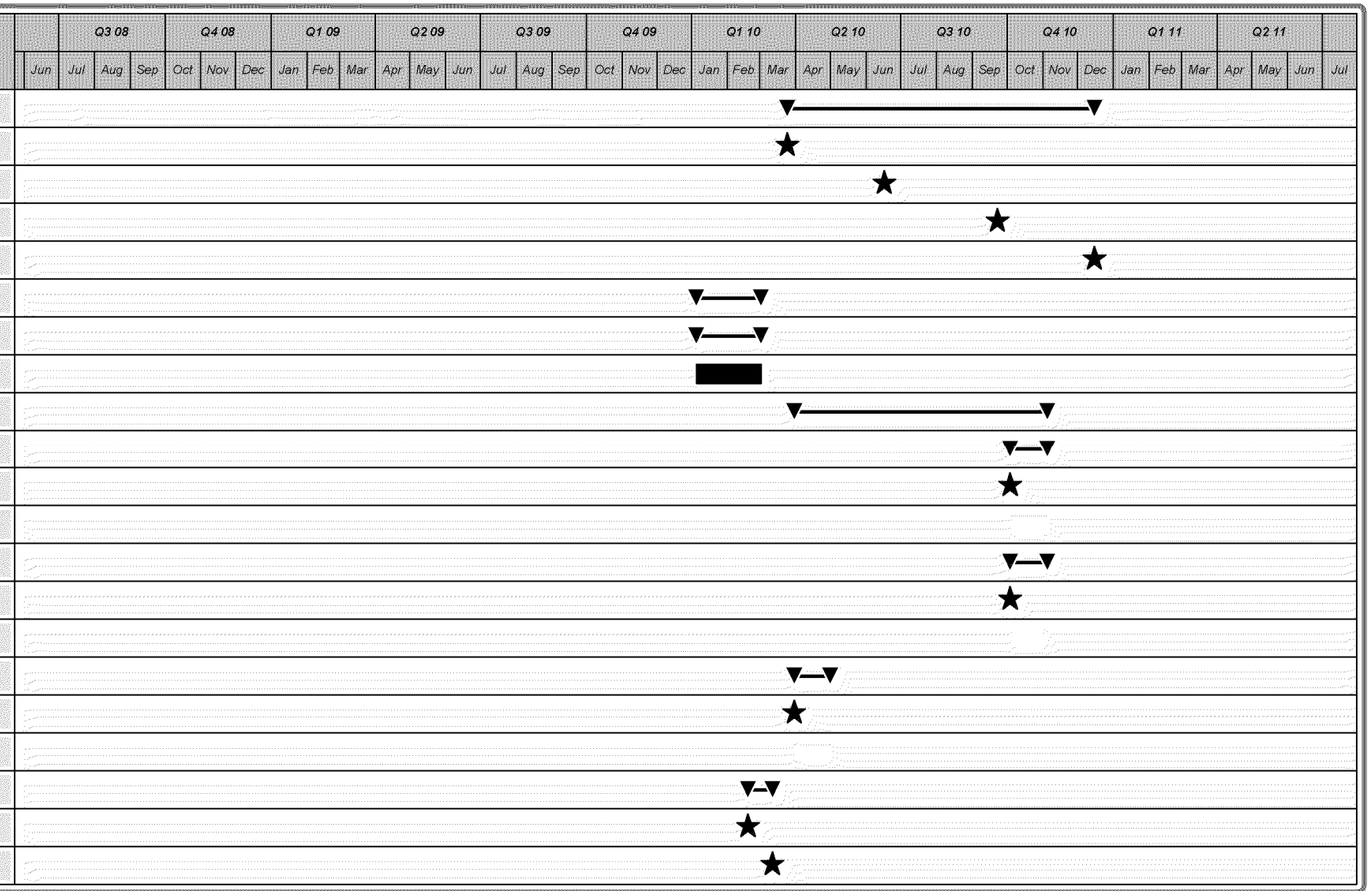
19	**WTG FEASIBILITY STUDY**	**2/19/2010**	**3/12/2010**
20	Updated FS Scoping Document Response	2/19/2010	2/19/2010
21	Risk Assessment Update Scoping Memo	3/12/2010	3/12/2010

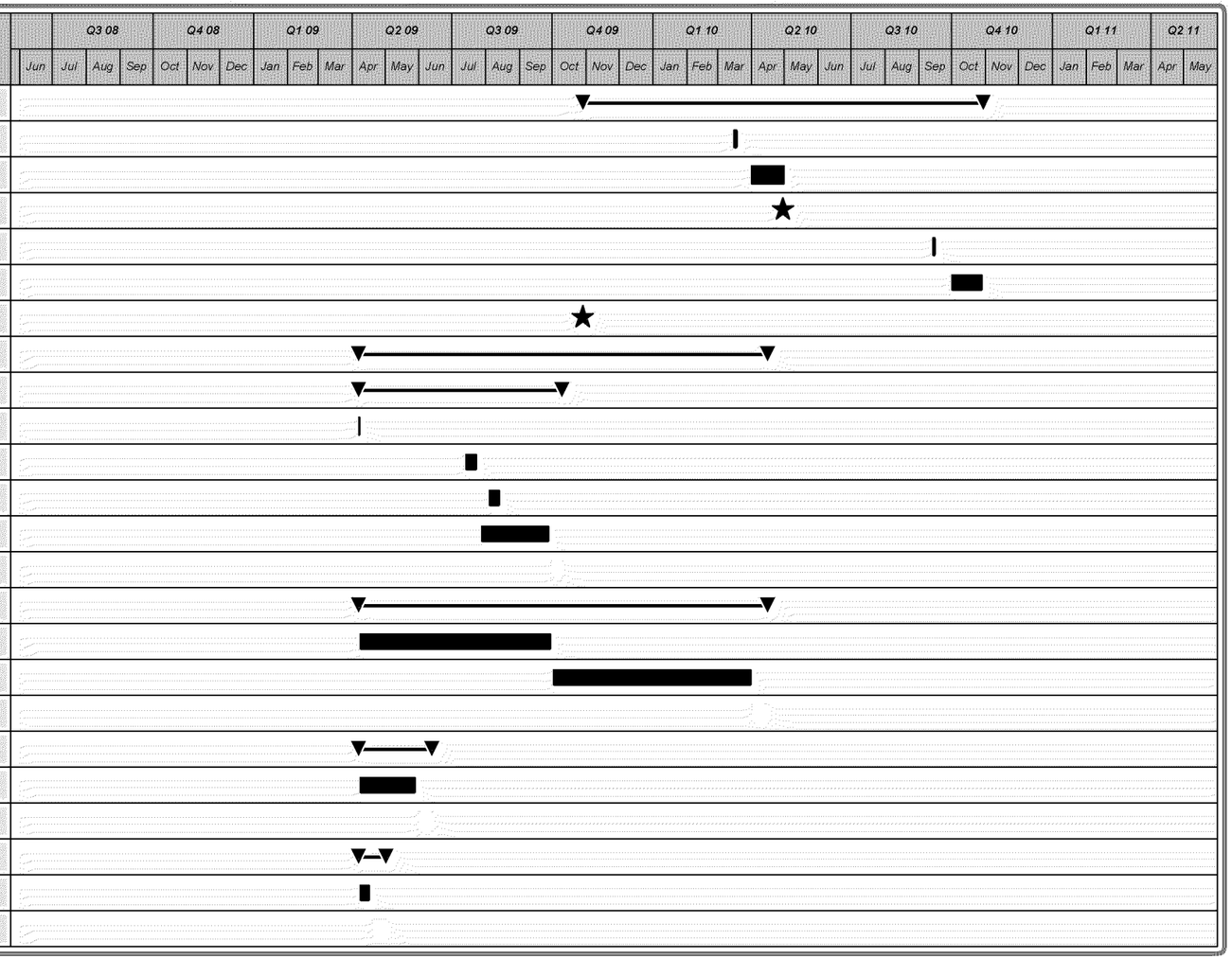


DELTA

COP0019834

WILLBRIDGE TERMINAL GROUP SCHEDULE

ID	Task Name	Start	Finish
1	**WTG GROUNDWATER MONITORING**	**10/29/2009**	**10/29/2010**
2	First Quarter 2010	3/16/2010	3/18/2010
3	First Quarter 2010 Report	4/1/2010	4/30/2010
4	DEQ Submittal	4/30/2010	4/30/2010
5	Third Quarter 2010	9/14/2010	9/15/2010
6	Third Quarter 2010 Report	9/30/2010	10/29/2010
7	DEQ Submittal	10/29/2009	10/29/2009
8	**CHEVRON TERMINAL**	**4/7/2009**	**4/15/2010**
9	**60-inch Lining**	**4/7/2009**	**10/9/2009**
10	Planning/Coordination	4/7/2009	4/7/2009
11	Vault Modification	7/13/2009	7/24/2009
12	60-inch Lining	8/3/2009	8/14/2009
13	Preparation of Summary Report	7/27/2009	9/28/2009
14	DEQ Summary Report Review	9/30/2009	10/9/2009
15	**48-inch Repair**	**4/7/2009**	**4/15/2010**
16	Planning/Coordination	4/7/2009	9/30/2009
17	Preparation of 48-inch Repair Work Plan	10/1/2009	4/1/2010
18	DEQ Work Plan Review	4/2/2010	4/15/2010
19	**Terminal Expansion Project**	**4/7/2009**	**6/12/2009**
20	Submittal of IRAM Report	4/7/2009	5/29/2009
21	DEQ IRAM Report Review	6/1/2009	6/12/2009
22	**Tank 75 Investigation**	**4/7/2009**	**5/1/2009**
23	Preparation of Technical Memo	4/7/2009	4/17/2009
24	DEQ Technical Memo Review	4/20/2009	5/1/2009



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COP0019835

WILLBRIDGE TERMINAL GROUP SCHEDULE

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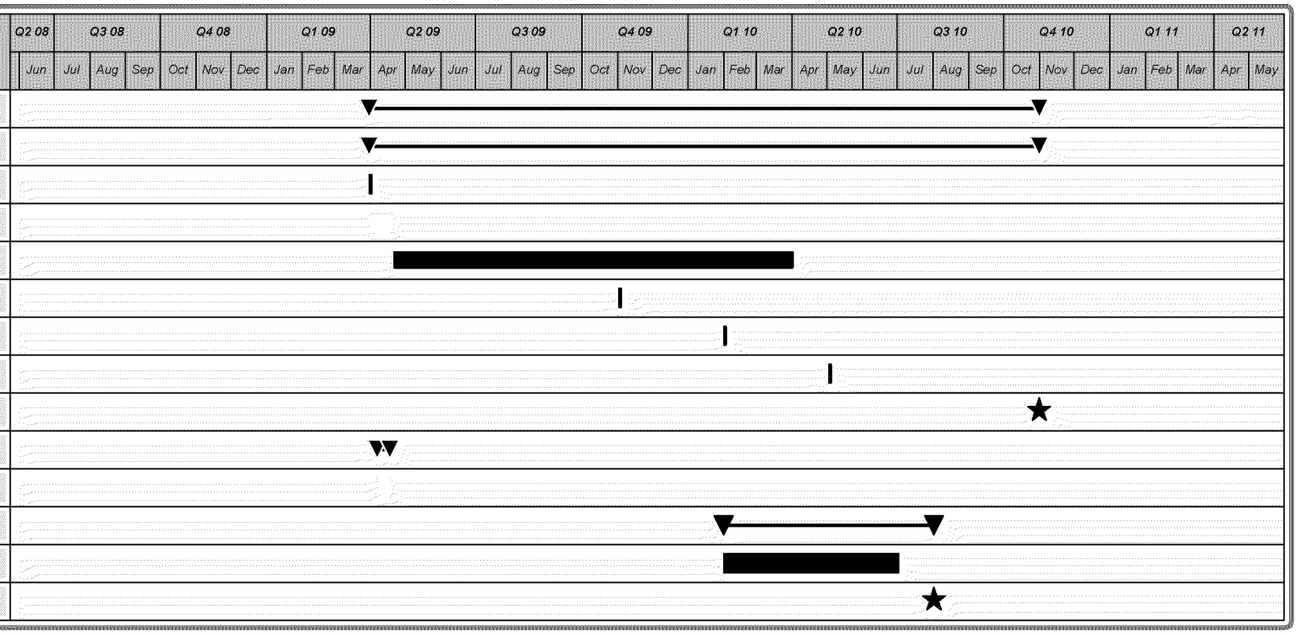
2	**Ethanol Spill Area**	**3/31/2009**	**11/1/2010**
3	Preparation of Work Plan	3/31/2009	4/1/2009
4	DEQ Work Plan Review	4/1/2009	4/17/2009
5	Implementation	4/20/2009	4/2/2010
6	Fourth Quarter Monitoring 2009	11/2/2009	11/3/2009
7	First Quarter Monitoring 2010	2/1/2010	2/2/2010
8	Second Quarter Monitoring 2010	5/3/2010	5/4/2010
9	Report	11/1/2010	11/1/2010
10	**Pre-1973 Trench**	**4/7/2009**	**4/17/2009**
11	DEQ Technical Memo Review	4/7/2009	4/17/2009
12	**KINDER MORGAN SALTZMAN CREEK EVALUATION**	**2/1/2010**	**8/2/2010**
13	Evaluation	2/1/2010	7/1/2010
14	Report	8/2/2010	8/2/2010



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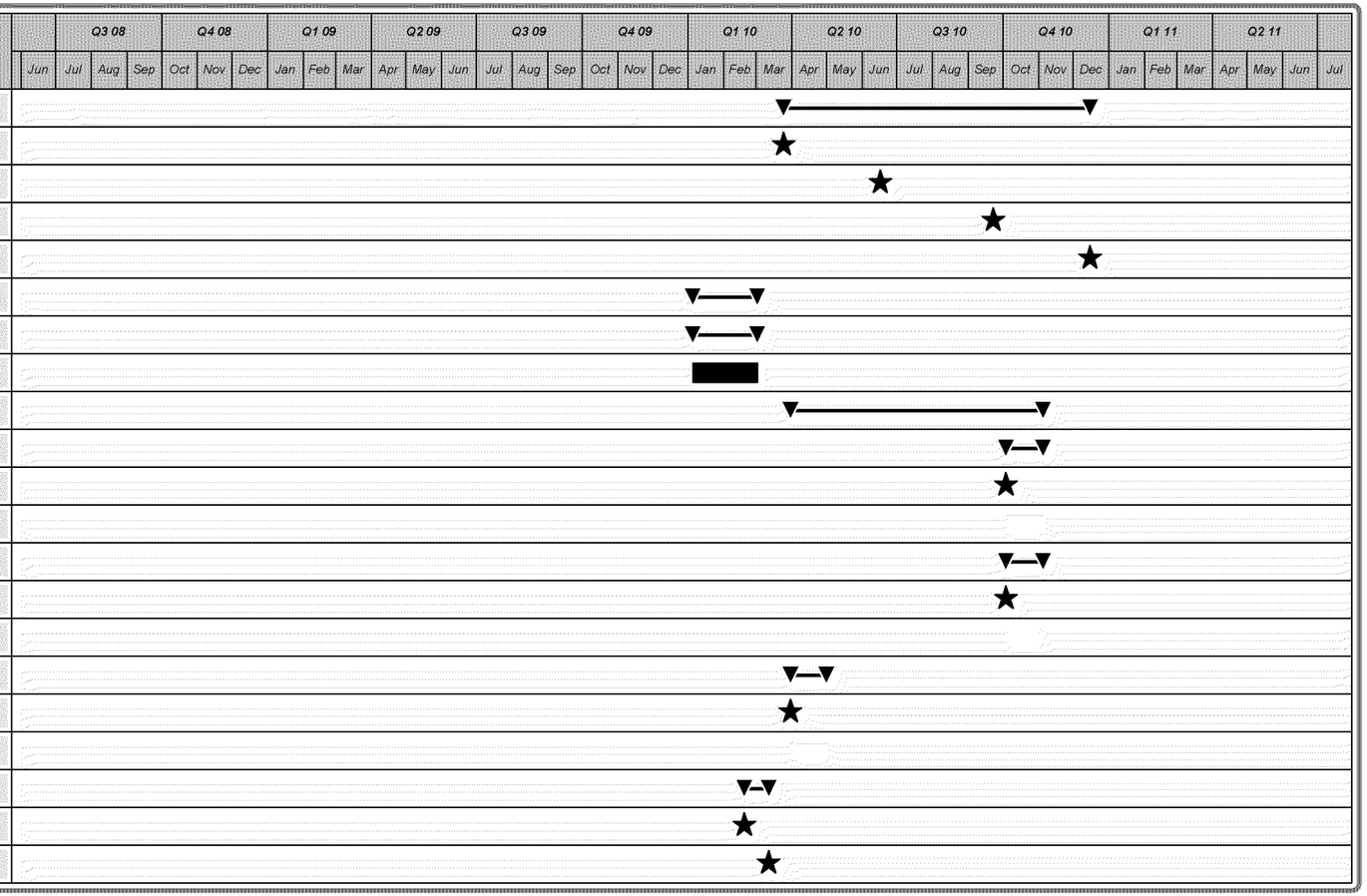

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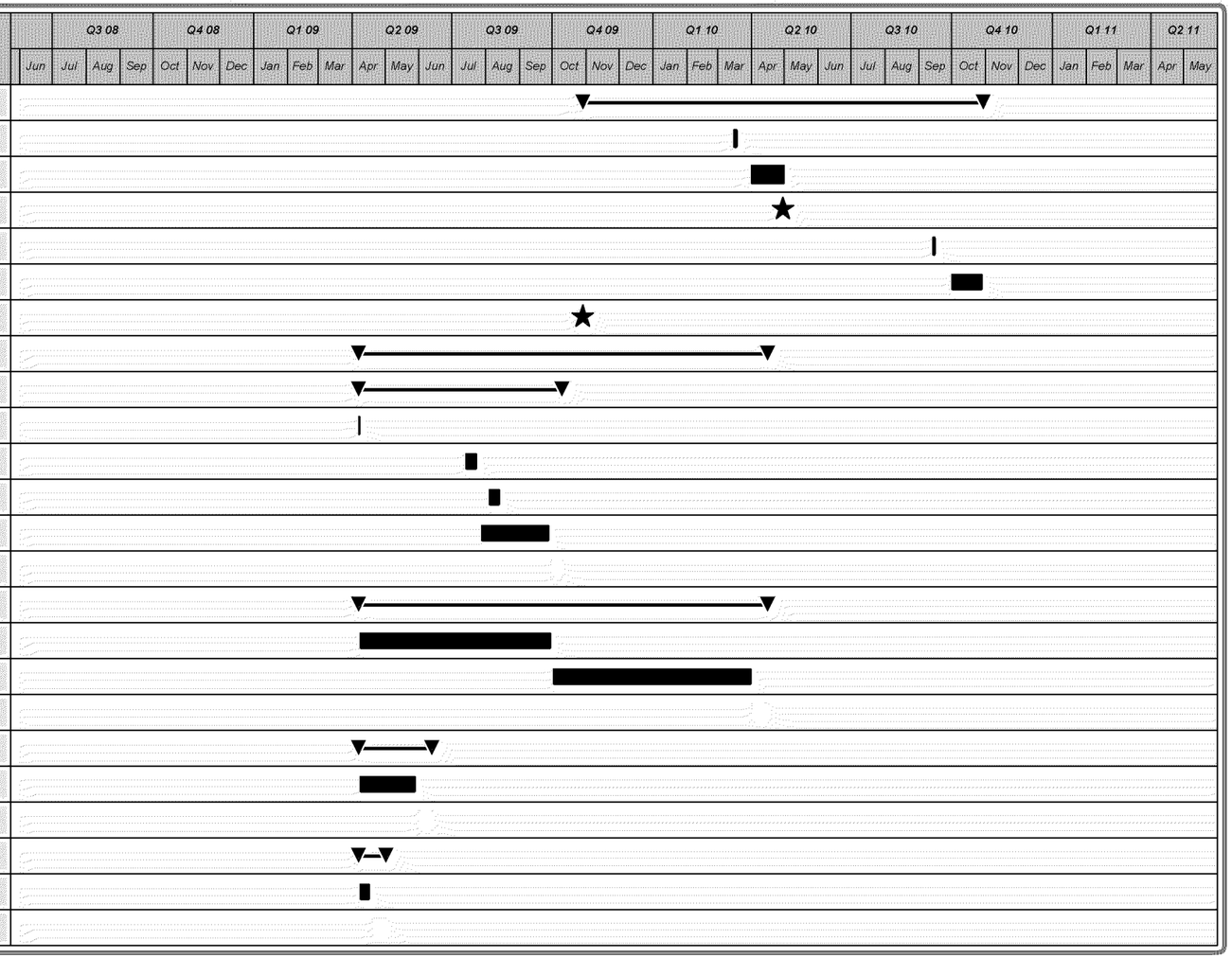

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COP0019838

WILLBRIDGE TERMINAL GROUP SCHEDULE

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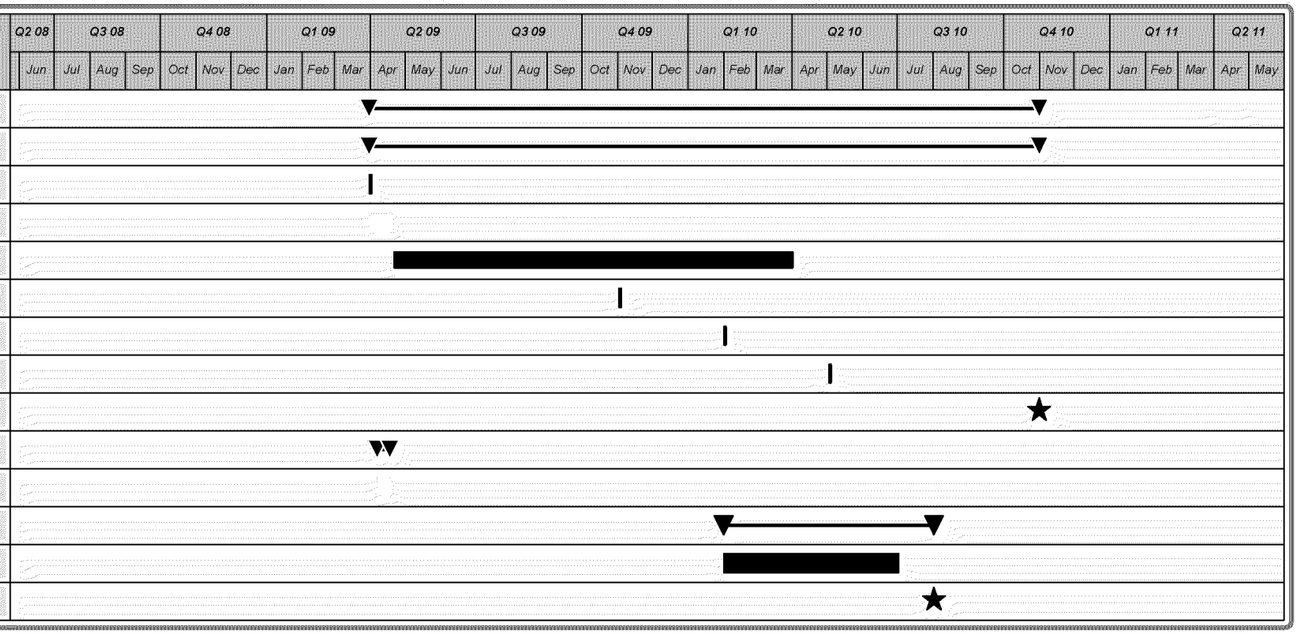

DELTA

COP0019839

From: Lund, Robert
Sent: Monday, March 01, 2010 06:40 PM
To: romero.mike@deq.state.or.us
CC: Trewartha, Mark; McIlroy, Sarah; Smith, Myron - Environmental:; Benkosky, Rusty; Larsen, Alice
Subject: ConocoPhillips SCE Meeting - Wednesday March 3 at 10 am
Attachments: 03_03_2010 Agenda ConocoPhillips Terminal SCE.doc

Mike,

See the attached agenda for the Wednesday ConocoPhillips SCE meeting.

Please reply back with the conference room telephone # for Myron Smith to call in on.

Regards,

Robert Lund, P.E.
Associate Engineer
Stantec
Ph: (503) 691-2030 Ext. 132
Fx: (503) 692-7074
Cell: (503) 550-7251
robert.lund@stantec.com
stantec.com <http://www.stantec.com/>

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Memo

Stantec

To:	Mike Romero Oregon Department of Environmental Quality	From:	Robert Lund Stantec Consulting Corporation
File:	ConocoPhillips Portland Terminal SCE	Date:	autodate

Reference: Agenda for ConocoPhillips Portland Terminal Source Control Evaluation Meeting 10 AM Wednesday March 3, 2010 – 2020 SW 4th Avenue, Portland, OR (4th Floor)

1. Introductions;
2. Purpose and goals of meeting;
3. Stormwater sampling data gaps and sampling protocol for 2010 sampling events;
4. Tank Farm #3 and vicinity stormwater sampling locations;
5. Tank Farm #2 stormwater sampling location;
6. Deep groundwater pathway;
7. Due date and formatting of SCE report;
8. Terminal best management practices;
9. Open discussion; and
10. Closing.

Robert Lund, P.E.
Associate Engineer
robert.lund@stantec.com

Attachment: none

c. Myron Smith, Rusty Benkosky, Sarah McIlroy, Alice Larsen, and Mark Trewartha

One Team. Infinite Solutions.

s autopath

Memo

Stantec

To:	Mike Romero Oregon Department of Environmental Quality	From:	Robert Lund Stantec Consulting Corporation
File:	ConocoPhillips Portland Terminal SCE	Date:	autodate

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7. Due date and formatting of SCE report;
8. Terminal best management practices;
9. Open discussion; and
10. Closing.

Robert Lund, P.E.
Associate Engineer
robert.lund@stantec.com

Attachment: none

c. Myron Smith, Rusty Benkosky, Sarah McIlroy, Alice Larsen, and Mark Trewartha

One Team. Infinite Solutions.
a autopath

From: Lund, Robert
Sent: Wednesday, March 03, 2010 11:23 PM
To: Smith, Myron - Environmental:
CC: Trewartha, Mark; Benkosky, Rusty; Larsen, Alice; McIlroy, Sarah
Subject: March 3, 2010 Portland Terminal SCE Meeting
Attachments: not_portland_terminal_030310.doc

Myron,

The attached are notes from the SCE meeting today. The plan was to give it to you for review, discuss, following that we would send the synopsis to DEQ for a nod of approval.

Note that Mike Romero w/ DEQ may contact you because he is concerned that if there was lack of cooperation between Stantec and the Terminal operators during follow up SCE sampling; that it would be detrimental to completing this SCE on time.

Regards,

Robert Lund, P.E.
Associate Engineer
Stantec
Ph: (503) 691-2030 Ext. 132
Fx: (503) 692-7074
Cell: (503) 550-7251
robert.lund@stantec.com
stantec.com <http://www.stantec.com/>

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Meeting Notes

ConocoPhillips Portland Terminal

Source Control Evaluation Meeting

Stantec

Date/Time:	March 3, 3010 10:00 AM
Place:	Oregon Department of Environmental Quality
Next Meeting:	N/A
Attendees:	Mike Romero, DEQ
	Karen Tarnow, DEQ
	Mark Trewartha, Stantec
	Robert Lund, Stantec
	Sarah McIlroy, Stantec
Absentees:	Myron Smith
Distribution:	Above
	Rusty Benkosky, Stantec

Item:

Introductions

Mike Romero is the Project Manager for the three terminals.

Karen Tarnow is the Portland Harbor Stormwater Coordinator.

Mark Trewartha is the Stantec Project Manager for the project.

Robert Lund is the project engineer for the project.

Sarah McIlroy is a stormwater specialist who will provide oversite and guidance for the project.

Purpose and Goal of the Meeting

The goal of the meeting is to discuss the data gaps and identify a strategy for filling the gaps and completing the Source Control Evaluation Report.

Data Gaps

Dock Area. There are no gaps for the dock area. This data has been collected at the following three locations: WR-368, WR-370, WR-012 (metals only because it's roof runoff). It was also noted that no additional sampling is required for the City's Outfall # 22.

Manhole 3. MH 3 collects runoff from Tank Farm # 2. There have been no samples at MH 3 to date because it only receives water from Separator 004 which may not be opened following qualifying rainfall events due to lack of runoff. It was determined that 4

samples need to be taken when the Separator is discharged; each sample can be collected between qualifying rainfall events; however samples times may occur out of qualifying time frame after a rainfall event to allow for a separator discharge event to be authorized and conducted by the terminal under NPDES permit. Coordination with the terminal will be required to notify Stantec of the release of water so that sampling can be scheduled during a qualifying discharge event.

Manhole 12. MH 12 collects runoff from Tank Farms #s 1 and 2 and has three pipes that enter into it, a 4" from CB 17 in the asphalt area, a 12" from Separator 002, and a 6" from the truck scale area. The 4" and 12" lines have been sampled for 1 and 2 storm events, respectively, so each will have to be sampled until at a total of 4 samples are reached for each line (counting 2008 and 2009 samples). The plan is to inspect the manhole to determine if there is a 6" line coming into the manhole and to obtain 4 sample events for that line if possible. Coordination with the terminal will be required to allow for sampling during terminal conducted discharge of Separator 002 under the NPDES permit.

Manhole X. MH X collects runoff from warehouse area west of Tank Farm # 1. Three events have been collected for MH X. One additional event is needed at this location, but there is no need to isolate roof drainage further upstream.

Manhole 9. MH 9 collects runoff from Tank Farm # 3. No samples have been obtained at this location due to access restrictions; MH 9 is located on Burlington Northern Railroad property. MH 11 (downstream from MH 9) has been paved over and is no longer accessible. MH 9 receives runoff from two general locations, Separator 001 and the Lube Cell drainage. A final decision was not made for this sampling point, but the action items/alternatives include:

1. Mike Romero will contact Shawn Rapp (DEQ PM for the Willbridge Railroad evaluation) regarding physical structure of MH 9 and MH 11 and points of contact for pursuing access agreements to sample MH 9. If access is granted to MH 9; then sample MH 9.

2. If access to MH 9 is not granted, there is a four part solution, with each location needing four sample events:

    a. Sample the discharge from Separator 001 between qualifying rainfall events. Coordination with the terminal will be required to allow for sampling during terminal conducted discharge of Separator 001 under the NPDES permit.

    b. Sample the clean out located due north of MH 9 in the rail loading area.

    c. It may be necessary to video the 12" storm drain pipe between the clean out and MH 9 to look for I/I issues. This would need to be done during high spring groundwater if the well/soil boring data show contamination in this area.

    d. It may be necessary to video the line between Separator 001 and MH 9

to look for I/I issues. This would need to be done during high spring groundwater if the well/soil boring data show contamination in this area.

It was noted that there are no other discharges from the property further to the east, toward the City's Outfall #19 (Kittridge Outfall).

Deep Groundwater Pathway

It was stated that the deep groundwater pathway investigation had been shifted to Chevron. The SCE report is only to cover stormwater, but needs to include preferential pathways such as shallow groundwater moving through storm drain conveyance backfill material.

Due Date and Formatting

The SCE Report will follow the guidelines included in the JSCS and Guidance for Evaluating the Stormwater Pathways at Upland Sites. The schedule notes that the SCE is due October 2010.

Other

Mike Romero wants to be sure that we include the Terminal's NPDES permit BMPs in the SCE Report.

Dry weather flow in storm drains should be evaluated as part of the SCE.

With prior permission from Mike Romero future documents should be submitted to BES and DEQ simultaneously

There is a Willbridge meeting on March 16th.

The meeting adjourned at 11:45 AM.
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

STANTEC CONSULTING SERVICES INC.

Robert Lund
robert.lund@stantec.com

Meeting Notes

ConocoPhillips Portland Terminal

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Stantec

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STANTEC CONSULTING SERVICES INC.

Robert Lund
robert.lund@stantec.com

From: Lund, Robert
Sent: Wednesday, March 10, 2010 09:28 PM
To: Smith, Myron - Environmental:; Lyons, Thomas
CC: Trewartha, Mark; Larsen, Alice
Subject: March 10, Stantec/Terminal Call Agenda
Attachments: March 10 - Meeting to Discuss Coordination of Discharge and Sampling.doc

Myron -

The attached is an agenda for today's call. It delineates the storm water sampling/separator discharge coordination needed at the Terminal.

Regards,

<<March 10 - Meeting to Discuss Coordination of Discharge and Sampling.doc>>

Robert Lund, P.E.
Associate Engineer
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 132
Fx: (503) 692-7074
Cell: (503) 550-7251
robert.lund@stantec.com
stantec.com

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* Please consider the environment before printing this email.

Memo

Stantec

To:	Myron Smith ConocoPhillips RM&R	From:	Robert Lund Tualatin OR Office
File:	ConocoPhillips Portland Terminal	Date:	autodate

Re: March 10, 2010 Call – Coordination of Sampling Activities with Terminal

Stantec has identified numerous sample points that require collection of stormwater samples. Most of the sample locations will NOT require coordination with the Terminal except the normal procedures (following Terminal protocol for site visitors etc).

Three sample points will require close coordination between Stantec and the Terminal because the sample points are attributed to stormwater discharge through the Separators.

Proposed Coordination Procedure (per storm event – 0.2 inches of rain in 24 hours):

1. Stantec will be monitoring weather daily for forecasts and rainfall;

2. Stantec will identify storm events that meet criteria and contact the Terminal notifying them of the event and request a sampling event for specific Separators. Discharge/sampling only needs to occur between storm events, there is not a specific window of time following a storm event where it must occur;

3. Following notification the Terminal will monitor Separator levels and advise Stantec if/when the Separators identified can be discharged and sampling will be scheduled concurrently. Stantec requests that the Terminal initiate discharge events even if the Separators were not completely filled by a particular storm.

   If the Terminal must discharge water at a time when it is not possible to coordinate sampling with Stantec (for a variety of foreseeable reasons or for convenience) the Terminal should monitor unscheduled discharges and leave sufficient volume in the Separator in question so that remaining water can be discharged and sampled concurrently at the next available opportunity.

4. Following notification from the Terminal Stantec will mobilize a sampler. While onsite the Stantec sampler and the Terminal will coordinate opening the separators at a time that the sampler is prepared to collect a sample.

Three Coordinated Sample Locations:

Separator #004 Tank Farm 2 -

Discharge from #004 must be sampled at MH-3. Stantec needs to collect 4 separate sample events.

Separator #001 Tank Farm 3 -

Discharge from #001 must be sampled at #001 effluent basin. Stantec needs to collect 4 separate sample events associated with 4 separate storm events.

And/or

Pending access with BNSF, discharge from #003 may be sampled at MH-9 on what is apparently BNSF property. Stantec needs to collect 4 separate sample events associated with 4 separate storm events.

Separator #002 Tank Farm 1 -

Discharge from #002 must be sampled at MH-12. Stantec needs to collect 2 separate sample events associated with 2 separate storm events.

Additional Items:

- Stantec scheduled a site visit for March 11, 2010 around 9:30 AM; and
- Request for AMEC to provide Autocad files of the maps used in the November 2009 SWPCP and forward the files to Stantec. Terminal to make request.

STANTEC CONSULTING CORPORATION

Robert Lund, P.E.
Associate Engineer
robert.lund@stantec.com

c. Tom Lyons; Mark Trewartha

Memo

Stantec

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File:	ConocoPhillips Portland Terminal	Date:	autodate

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STANTEC CONSULTING CORPORATION

Robert Lund, P.E.
Associate Engineer
robert.lund@stantec.com

c. Tom Lyons; Mark Trewartha

From: Lund, Robert
Sent: Wednesday, March 10, 2010 05:35 PM
To: romero.mike@deq.state.or.us
CC: Trewartha, Mark; McIlroy, Sarah; Smith, Myron - Environmental:
Subject: ConocoPhillips Terminal - March 3 Meeting Notes
Attachments: not_portland_terminal_030310.doc

Mike,

Re: ConocoPhillips Terminal - March 3 Meeting Notes - Stantec and DEQ

The attached are our notes from the March 3 meeting; please review and let us know if they are in general accordance with your recollection of our discussion. Also, if you have an FTP link we can send you photographs and other documentation (SWPCP) you requested copies of during the meeting.

Regards,
<<not_portland_terminal_030310.doc>>

Robert Lund, P.E.
Associate Engineer
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
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Meeting Notes

ConocoPhillips Portland Terminal

Source Control Evaluation Meeting

Stantec

Date/Time:	March 3, 3010 10:00 AM
Place:	Oregon Department of Environmental Quality
Next Meeting:	N/A
Attendees:	Mike Romero, DEQ
	Karen Tarnow, DEQ
	Mark Trewartha, Stantec
	Robert Lund, Stantec
	Sarah McIlroy, Stantec
Absentees:	Myron Smith
Distribution:	Above
	Rusty Benkosky, Stantec

Item:

Introductions

Mike Romero is the Project Manager for the three terminals.

Karen Tarnow is the Portland Harbor Stormwater Coordinator.

Mark Trewartha is the Stantec Project Manager for the project.

Robert Lund is the project engineer for the project.

Sarah McIlroy is a stormwater specialist who will provide oversite and guidance for the project.

Purpose and Goal of the Meeting

The goal of the meeting is to discuss the data gaps and identify a strategy for filling the gaps and completing the Source Control Evaluation Report.

Data Gaps

Dock Area. There are no gaps for the dock area. This data has been collected at the following three locations: WR-368, WR-370, WR-012 (metals only because it's roof runoff). It was also noted that no additional sampling is required for the City's Outfall # 22.

Manhole 3. MH 3 collects runoff from Tank Farm # 2. There have been no samples at MH 3 to date because it only receives water from Separator 004 which may not be opened following qualifying rainfall events due to lack of runoff. It was determined that 4

samples need to be taken when the Separator is discharged; each sample can be collected between qualifying rainfall events; however samples times may occur out of qualifying time frame after a rainfall event to allow for a separator discharge event to be authorized and conducted by the terminal under NPDES permit. Coordination with the terminal will be required to notify Stantec of the release of water so that sampling can be scheduled during a qualifying discharge event.

Manhole 12. MH 12 collects runoff from Tank Farms #s 1 and 2 and has three pipes that enter into it, a 4" from CB 17 in the asphalt area, a 12" from Separator 002, and a 6" from the truck scale area. The 4" and 12" lines have been sampled for 1 and 2 storm events, respectively, so each will have to be sampled until at a total of 4 samples are reached for each line (counting 2008 and 2009 samples). The plan is to inspect the manhole to determine if there is a 6" line coming into the manhole and to obtain 4 sample events for that line if possible. Coordination with the terminal will be required to allow for sampling during terminal conducted discharge of Separator 002 under the NPDES permit.

Manhole X. MH X collects runoff from warehouse area west of Tank Farm # 1. Three events have been collected for MH X. One additional event is needed at this location, but there is no need to isolate roof drainage further upstream.

Manhole 9. MH 9 collects runoff from Tank Farm # 3. No samples have been obtained at this location due to access restrictions; MH 9 is located on Burlington Northern Railroad property. MH 11 (downstream from MH 9) has been paved over and is no longer accessible. MH 9 receives runoff from two general locations, Separator 001 and the Lube Cell drainage. A final decision was not made for this sampling point, but the action items/alternatives include:

1. Mike Romero will contact Shawn Rapp (DEQ PM for the Willbridge Railroad evaluation) regarding physical structure of MH 9 and MH 11 and points of contact for pursuing access agreements to sample MH 9. If access is granted to MH 9; then sample MH 9.

2. If access to MH 9 is not granted, there is a four part solution, with each location needing four sample events:

    a. Sample the discharge from Separator 001 between qualifying rainfall events. Coordination with the terminal will be required to allow for sampling during terminal conducted discharge of Separator 001 under the NPDES permit.

    b. Sample the clean out located due north of MH 9 in the rail loading area.

    c. It may be necessary to video the 12" storm drain pipe between the clean out and MH 9 to look for I/I issues. This would need to be done during high spring groundwater if the well/soil boring data show contamination in this area.

    d. It may be necessary to video the line between Separator 001 and MH 9

to look for I/I issues. This would need to be done during high spring groundwater if the well/soil boring data show contamination in this area.

It was noted that there are no other discharges from the property further to the east, toward the City's Outfall #19 (Kittridge Outfall).

Deep Groundwater Pathway

It was stated that the deep groundwater pathway investigation had been shifted to Chevron. The SCE report is only to cover stormwater, but needs to include preferential pathways such as shallow groundwater moving through storm drain conveyance backfill material.

Due Date and Formatting

The SCE Report will follow the guidelines included in the JSCS and Guidance for Evaluating the Stormwater Pathways at Upland Sites. The schedule notes that the SCE is due October 2010.

Other

Mike Romero wants to be sure that we include the Terminal's NPDES permit BMPs in the SCE Report.

Dry weather flow in storm drains should be evaluated as part of the SCE.

With prior permission from Mike Romero future documents should be submitted to BES and DEQ simultaneously

There is a Willbridge meeting on March 16th.

The meeting adjourned at 11:45 AM.
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

STANTEC CONSULTING SERVICES INC.

Robert Lund
robert.lund@stantec.com

From: Trewartha, Mark
Sent: Thursday, March 18, 2010 10:18 PM
To: Smith, Myron - Environmental:
CC: Bare, Mark; Larsen, Alice
Subject: FW: WTG Meeting - draft minutes
Attachments: WTG Meeting 20100316 Minutes.doc

Myron,

I had only one minor edit on the meeting minutes. Please review and get back to me when you can.

Mark Trewartha, R.G.
Senior Hydrogeologist
Stantec
7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 120
Fx: (503) 692-7074
Cell: (503) 807-8568
Mark.Trewartha@stantec.com
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From: Sprick, Grant [mailto:Grant.Sprick@arcadis-us.com]
Sent: Wednesday, March 17, 2010 4:57 PM
To: Hunter, Brett (BLHU); Smith, Myron - Environmental:; Rob Truedinger (KinderMorgan)
Cc: Timothy Browning; Trewartha, Mark
Subject: WTG Meeting - draft minutes

All, please see the attached draft meeting minutes for your review. Please insert your track changes comments and provide to be by close of business March 23. I will submit this to the DEQ on March 24.

-Grant

Grant V. Sprick | Certified Project Manager I |
grant.sprick@arcadis-us.com <mailto:firstname.lastname@arcadis-us.com>

ARCADIS U.S., Inc. | 111 SW Columbia St., Suite 725 | Portland, OR 97201
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First Quarter 2010 WTG Meeting

Meeting Minutes

Date: March 16, 2010

Time: 1:00 pm (Pacific Standard Time)

Location: **10th Floor** Conference Room; 111 SW Columbia Street

Red font indicates action items due by the next WTG meeting during the second quarter

---

Attendees

Michael Romero, DEQ
Ken Thiessen, DEQ
Brett Hunter, Chevron
Myron Smith, ConocoPhillips (via phone)
Grant V. Sprick, ARCADIS
Mark Trewartha, Stantec
Tim Browning, Delta

1. **Safety Moment –** ARCADIS
    - **Carbon Monoxide safety at home – case study**
2. **Introductions –** All
    - **New Stantec Contact – Mark Trewartha**
3. **Coordinator Role Discussion –** All
    - DEQ will review the Order and previous documents to identify why/how the coordinator role was created
    - The WTG proposed to abolish the coordinator role and instead rotate coordination responsibilities between WTG party representatives.
    - Quarterly meetings with DEQ would be an opportunity for clarification and coordination for the group

COP0019861

- WTG will prepare an email summarizing the proposed rotating coordinator strategy

4. **Source Control Timing and DEQ Expectations –** DEQ

   - The draft in-water RI has been submitted
   - The in-water FS will be completed by 1Q11
   - Record of Decision will be in place by late 2012
   - Memorandum of Understanding between DEQ and EPA states that high priority sites must have a clear plan for source control decisions and source control measures in place by the ROD (late 2012)
   - Performance monitoring may be a component of source control depending on the significance of the implemented measure

5. **Terminal-Specific Spill Contingency Plans –** DEQ

   - DEQ encouraged WTG parties to coordinate more with Terminal personnel regarding the preparation and submittal of various spill and storm water control documents
   - Take advantage of documenting current or future BMPs in these documents to meet source control requirements

6. **Human Health Risk Assessment Update –** ALL

   - DEQ will assign a risk assessor to the project to help guide the risk assessment update process.
   - The WTG parties will work together to develop a draft risk assessment update work plan
   - Once the draft work plan is developed and a DEQ risk assessor is assigned, a meeting will be conducted to agree on a path forward
   - Each party should use the same CSM to avoid varying interpretations of risk

7. **Paramount Industrial Well –** ARCADIS

   - Letter from Paramount Petroleum was provided to DEQ indicating that the beneficial reuse has not been impacted
   - DEQ will review this issue internally to confirm that the right level of effort is being applied
   - ARCADIS will prepare a short letter summarizing semi-confined conditions in the CRB, well construction details, and CRB properties following internal review

8. **Storm Water Source Control Evaluation Update**

   - **ConocoPhillips –** Stantec

     - ConocoPhillips currently working through access agreement issues with the rail road
     - Pending access, the storm water source control evaluation is on schedule for October submittal

COP0019862

- **Chevron –** ARCADIS

    - Last dry weather flow inspection and sampling event scheduled for the week of March 15
    - Storm Water Source Control Report schedule for submittal during 2Q10

- **Kinder Morgan –** Delta

    - Storm water sampling work plan in review for submittal during the week of April 5

9. **Groundwater Source Control Evaluation Update**

    - **ConocoPhillips/Chevron –** ARCADIS

        - Field work has been completed and data is currently being evaluated
        - Anticipating a 4Q10 submittal of Groundwater Source Control Report

    - **Kinder Morgan –** Delta

        - DEQ and Delta will schedule a scoping meeting to plan out the groundwater source control evaluation

10. **NW Doane Avenue Storm Sewer Update –** ARCADIS

    - Evaluation work plan currently being prepared
    - Majority of the work will be completed during the 2010/2011 wet weather window
    - Anticipate April submittal of the NW Doane Avenue Work Plan

11. **Redesign of the GWET System –** ARCADIS

    - ARCADIS will prepare a work plan for system redesign following review of various process alternatives
    - Anticipate submittal of the GWET System Redesign Work Plan during 3Q10

12. **ConocoPhillips Terminal Projects Update –** Stantec

    - **Fire Building Construction – Soil excavation sampling results**

    - **Asphalt Maintenance and Soil Sampling Work Plan**

13. **Chevron Terminal Projects Update -** ARCADIS

    - **Ethanol Spill Evaluation**

COP0019863

- Soil vapor extraction system restarted based on methane concentrations observed in soil vapor probes
- Currently working on a proposed plan forward

- **Enhanced Bio Pilot Study**

  - Injection work plan will be submitted during the week of March 15
  - Injection currently scheduled for the week of April 5
  - ARCADIS will prepare a letter to the DEQ that evaluates use of treated water from the groundwater treatment system for injection purposes

14. Kinder Morgan Terminal Projects Update - Delta

- **Schedule Scoping Meeting Saltzman, Certain Teed**

  - DEQ and Delta will schedule a meeting to discuss path forward

15. DEQ Saltzman Creek Project

- DEQ will be implementing a sampling plan with the Saltzman Creek concrete channel and delta
- DEQ encourages active participation from neighboring properties that discharge to Saltzman Creek

16. Closing Thoughts – All

- Delta will coordinate the next meeting for 2Q10

COP0019864

First Quarter 2010 WTG Meeting

Meeting Minutes

Date: March 16, 2010

Time: 1:00 pm (Pacific Standard Time)

Location: **10th Floor** Conference Room; 111 SW Columbia Street

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Brett Hunter, Chevron
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Grant V. Sprick, ARCADIS
Mark Trewartha, Stantec
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COP0019865

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COP0019866

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COP0019867

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COP0019868

From: Trewartha, Mark
Sent: Thursday, May 20, 2010 08:28 PM
To: Smith, Myron - Environmental:
CC: McIlroy, Sarah; Larsen, Alice
Subject: Follow-up on PDX and BNSF

Myron,

Just an update on our follow-up items for BNSF:

* I talked with Marc Peterson about the survey for the stormwater lines between the two properties. We talked about looking at either a video survey or smoke test. Marc suggested that a smoke test is probably sufficient. Marc also said given the limited amount of access required, that he doesn't seem to think access will be an issue.

* I talked with Sarah McIlroy and she concurs that a smoke test is probably sufficient. We will get some numbers together and I will get back to you on costs.

Let me know if you have any questions.

Mark Trewartha, R.G.
Senior Hydrogeologist
Stantec

7730 Southwest Mohawk Street
Tualatin OR 97062
Ph: (503) 691-2030 Ext. 120
Fx: (503) 692-7074
Cell: (503) 807-8568
Mark.Trewartha@stantec.com

stantec.com <http://www.stantec.com>

We are relocating. Beginning May 24, my contact information will be:

9400 SW Barnes Rd., Suite 200

Portland, OR 97225

Ph: (503) 297-1631 Ext. 207

Fx: (503) 297-5429

Cell: (503) 807-8568

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From: Trewartha, Mark
Sent: Thursday, June 17, 2010 07:25 PM
To: ROMERO Mike
CC: Smith, Myron - Environmental:
Subject: ODOT information

Mike,

According to Marc Peterson, MH-9 is property of ODOT. The contact for ODOT that Marc gave me is Jeff Moore (503-731-8289).

As discussed in yesterday's meeting, let me know when you have contacted Jeff and given him the "heads up" that he will be getting a call from me regarding access to MH-9.

Thanks for your assistance.

Mark Trewartha, R.G.
Senior Hydrogeologist
Stantec
9400 SW Barnes Road Suite 200
Portland OR 97225-6690
Ph: (503) 297-1631 Ext. 207
Fx: (503) 297-5429
Cell: (503) 807-8568
Mark.Trewartha@stantec.com
stantec.com

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* Please consider the environment before printing this email.

From: Chad Porfily
Sent: Wednesday, June 23, 2010 04:17 PM
To: Smith, Myron - Environmental:
Subject: Drawings in PDF
Attachments: 0608-C-7022-G Model (1).pdf; 0608-C-7021-G Model (1).pdf; 0608-C-7020-F Model (1).pdf; 0608-C-7000-6 Model (1).pdf; 0608-C-1000-D Model (1).pdf; 0608-C-7010-F Model (1).pdf; 0608-C-7023-G Model (1).pdf

Here are the drawings you requested in PDF form.

Thank You

Chad Porfily

PLAN

SCALE 1"=90' (22"x34")

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Tank Farm 1						
36	Slop Oil	14'-6"	16'	Riveted Steel	20,496	1907
1471	Hydraulic Tractor Fluid	10'-9"	28'-8½"	Riveted Steel	17,300	1921
2561	Marine Fuel Oil	78'-0"	46'-7"	Riveted Steel	1,569,582	1929
2579	Hydraulic Tractor Fluid	10'-9"	29'-8"	Welded Steel	18,000	1929
2669	Marine Diesel	48'-0"	35'-3"	Riveted Steel	449,694	1931
2713	Unax AW 46	24'-0"	35'-0"	Welded Steel	109,000	1937
2714	Guardol 15W/40	24'-0"	35'-0"	Welded Steel	109,000	1937
2783	Decant Oil	60'-0"	46'-7"	Riveted Steel	948,066	1937
2784	Diesel #2	78'-0"	40'-10"	Riveted Steel	1,439,130	1937
2917	RLOP 220 N	48'-0"	48'-0"	Welded Steel	612,000	1938
3623	HiTec 6576	10'-9"	30'-0"	Welded Steel	18,228	1950
3639	SUP SYN BL 5W/30	25'-0"	36'-0"	Welded Steel	120,000	1951
4369	RLOP 220N	10'-9"	30'-0"	Welded Steel	17,500	1979
4441	Octel 9056	10'-9"	30'-0"	Welded Steel	18,648	1993
Tank Farm 2						
2915*	Unleaded Gasoline	120'-0"	42'-0"	Welded Steel	3,262,056	1938
2916	Diesel #2	78'-0"	48'-0"	Welded Steel	1,652,196	1938
2982	Diesel #1	48'-0"	36'-0"	Welded Steel	416,262	1941
2983	RLOP 220 N	36'-0"	42'-0"	Welded Steel	304,000	1941
3407	Unleaded Gasoline	120'-0"	40'-0"	Welded Steel	2,955,540	1949
3408*	Unleaded Gasoline	90'-0"	40'-0"	Welded Steel	1,639,680	1949
3409	Unleaded Gasoline	70'-0"	40'-0"	Welded Steel	948,654	1949
3410	Ethanol	35'-0"	42'-0"	Welded Steel	278,964	1949
3411	Unleaded Gasoline	35'-0"	42'-0"	Welded Steel	259,350	1949
3412	Diesel #1	35'-0"	42'-0"	Welded Steel	279,426	1949
3413	Unleaded Gasoline	35'-0"	42'-0"	Welded Steel	259,560	1949
4223	Slop Oil	10'-9"	30'-0"	Welded Steel	18,690	1968
4259	Transmix	35'-0"	32'-0"	Welded Steel	205,506	1968
4327	Gasoline Slops	8'-6"	24'-0"	Welded Steel	10,080	1974

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Lube Blending Warehouse						
4338	Conoco AN 801	3'-6"	14'-0"	Welded Steel	1000	1974
4339	Ethyl HITEC 534	3'-6"	14'-0"	Welded Steel	1000	1974
4340	Ethyl HITEC 385	3'-6"	14'-0"	Welded Steel	1000	1974
4341	Utility	3'-6"	14'-0"	Welded Steel	1000	1974
4342	HITEC 008	3'-6"	14'-0"	Welded Steel	1000	1974
4343	Viscoplex 1-302	3'-6"	14'-0"	Welded Steel	1000	1974
4344	Oleic Acid/Emersol 213	3'-6"	14'-0"	Welded Steel	1000	1974
4345	Lubrizol 8790	3'-6"	14'-0"	Welded Steel	1000	1974
4346	Utility	3'-6"	14'-0"	Welded Steel	1000	1974
4347	Utility	3'-6"	14'-0"	Welded Steel	1000	1974
F-14	Flush - Under Lab	5'-3"	30'-0"	Welded Steel	5000	1981
F-8	Utility			Welded Steel	1000	1968
F-9	Line Clippings			Welded Steel	2200	1954
F-13	Slops - Under Lab	5'-3"	30'-0"	Welded Steel	5000	1981

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Tank Farm 3						
3414	RLOP 220 N	30'-0"	42'-0"	Welded Steel	200,000	1949
3415	SUN 525	30'-0"	42'-0"	Welded Steel	200,000	1949
3416	RLOP 100N	30'-0"	42'-0"	Welded Steel	200,000	1949
3417	ULTRA S-4	30'-0"	42'-0"	Welded Steel	200,000	1949
3579	Industrial Fuel Oil	120'-0"	40'-0"	Welded Steel	3,307,668	1950
3739	SUN 150 B/S	30'-0"	42'-0"	Welded Steel	200,000	1954
3740	RLOP 600 N	35'-0"	42'-0"	Welded Steel	277,000	1954
3761	Diesel #2	120'-0"	40'-0"	Welded Steel	3,240,342	1954
4244	Mohawk 450	10'-9"	30'-0"	Welded Steel	17,500	1968
4245	SUN 525	10'-9"	30'-0"	Welded Steel	17,500	1968
4252	Residual Fuel Oil	50'-0"	32'-0"	Welded Steel	458,640	1968
4253	Residual Fuel Oil	50'-0"	32'-0"	Welded Steel	451,290	1968
4254	PS 300	50'-0"	32'-0"	Welded Steel	459,312	1968
4255	Out of Service	50'-0"	32'-0"	Welded Steel	404,250	1968
4256	Out of Service	35'-0"	32'-0"	Welded Steel	195,408	1968
4257	Out of Service	25'-0"	16'-0"	Welded Steel	38,367	1968
4258	Line Clippings	10'-9"	30'-0"	Welded Steel	18,000	1968
4266	Flush	10'-9"	30'-0"	Welded Steel	17,500	1968
4302	RLOP 600N	10'-9"	30'-0"	Welded Steel	17,500	1971
4303	RLOP 100N	10'-9"	30'-0"	Welded Steel	17,500	1971
4305	Out of Service	8'-6"	24'-0"	Welded Steel	8,900	1971
4306	RLOP 100N	30'-0"	42'-2½"	Welded Steel	200,000	1971
4318	Diesel #2	80'-0"	43'-3"	Welded Steel	1,422,456	1973
4320	Sup Syn BL 10W/30	15'-0"	32'-2½"	Welded Steel	35,000	1973
4321	Uniguide II 100	15'-0"	32'-2½"	Welded Steel	35,000	1973
4322	T5X HD 15W/40	15'-0"	32'-2½"	Welded Steel	35,000	1973
4323	Super ATF	15'-0"	32'-2½"	Welded Steel	35,000	1973
F103	UTRA58	12'-6"	32'-0"	Welded Steel	25,500	1973
F104	UTRA58	10'-9"	32'-0"	Welded Steel	17,500	1973
F-Tank Farm						
4335	Utility	10'-9"	30'-0"	Welded Steel	17,500	1973
4336	Utility	10'-9"	30'-0"	Welded Steel	17,500	1973
4337	Utility	10'-9"	30'-0"	Welded Steel	17,500	1973
4436	Unax AW 32	10'-9"	30'-0"	Welded Steel	17,500	1990
4437	Unax AW WR 32	10'-9"	30'-0"	Welded Steel	17,500	1990
F10	Utility	10'-9"	10'-0"	Welded Steel	5,200	1954
F11	Utility	10'-9"	10'-0"	Welded Steel	5,200	1954
F12	Utility	10'-9"	10'-0"	Welded Steel	5,200	1954

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Upper Lube Cell						
3741	Ramar CLF 17E	10'-9"	30'-0"	Welded Steel	17,500	1954
3742	MP Gear Lube 80/90	10'-9"	30'-0"	Welded Steel	17,500	1954
3743	Utility	10'-9"	30'-0"	Welded Steel	18,600	1954
3744	HYNAP N100	10'-9"	30'-0"	Welded Steel	17,500	1954
3745	HITEC 5751	10'-9"	30'-0"	Welded Steel	17,500	1954
3746	Lubrizol 4998C	10'-9"	30'-0"	Welded Steel	17,500	1954
3747	Lubrizol 4990CH	10'-9"	30'-0"	Welded Steel	17,500	1954
3757	HITEC 1193	10'-9"	30'-0"	Welded Steel	17,500	1954
3760	Raffene 750L	10'-9"	30'-0"	Welded Steel	17,500	1954
4191	Lubrizol 48254	10'-9"	30'-0"	Welded Steel	17,500	1964
4192	Lubrizol 7075F	10'-9"	30'-0"	Welded Steel	17,500	1964
4241	UNAX AW 68	10'-9"	30'-0"	Welded Steel	17,500	1968
4242	UNAX AW 68	10'-9"	30'-0"	Welded Steel	17,500	1968
4243	HT4/10W	10'-9"	30'-0"	Welded Steel	17,500	1968
4281	Versa Tran ATF	10'-9"	30'-0"	Welded Steel	17,500	1969
4332	Super ATF	10'-9"	30'-0"	Welded Steel	17,500	1973
4333	Point Premier 10W/30	10'-9"	30'-0"	Welded Steel	17,500	1973
4334	Super 5W/20	10'-9"	30'-0"	Welded Steel	17,500	1973
Lower Lube Cell						
4300	Ramar CLF 17E	12'-6"	32'-0"	Welded Steel	25,500	1969
4331	Ethyl HITEC 6888E	12'-6"	32'-0"	Welded Steel	25,500	1973
4388	Utility	9'-4"	23'-9"	Welded Steel	13,500	1984
4389	Utility	9'-4"	23'-9"	Welded Steel	13,500	1984
4390	Bar & Chain 150	9'-4"	23'-9"	Welded Steel	13,500	1985
4391	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4392	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4393	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4394	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4395	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4397	Lubrizol 9692A	9'-4"	23'-9"	Welded Steel	13,500	1985
4398	HITEC 1193A	9'-4"	23'-9"	Welded Steel	13,500	1985
4399	Firebird 15W/40	9'-4"	23'-9"	Welded Steel	13,500	1985
4400	Guardol 30	9'-4"	23'-9"	Welded Steel	13,500	1985
4401	Mohawk 150	9'-4"	23'-9"	Welded Steel	13,500	1985
4402	TSX HD10	9'-4"	23'-9"	Welded Steel	13,500	1985
4403	HT4/30W	9'-4"	23'-9"	Welded Steel	13,500	1985
4404	Fleet Sup EC 15W/40	9'-4"	23'-9"	Welded Steel	13,500	1985
4405	HITEC 3472	9'-4"	23'-9"	Welded Steel	13,500	1987
4406	Lubrizol 9990A	9'-4"	23'-9"	Welded Steel	13,500	1987
4407	Ethyl HITEC 388	9'-4"	23'-9"	Welded Steel	13,500	1987
4408	Ethyl HITEC 5756	9'-4"	23'-9"	Welded Steel	13,500	1987

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AECI PROJECT NUMBER: 25-31

DRAWING NO.	REFERENCE DRAWING	NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE	NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
		A	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98						
		B	REVISE BARRELS ON TANK DATA AND LOGO	QKB	WHB	WHB	03/10/03						
		C	ADD LUBE OIL CANOPY AND WASTE STORAGE	QKB	WHB	WHB	11/22/04						
		D	GENERAL REVISION	CEW	WHB	WHB	12/08/06						

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ConocoPhillips Pipe Line Company
5528 N.W. DOANE AVE
PORTLAND OREGON

DR. D.A.BYNUM	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. MK / AP. KJP	DWG. SCALE AS SHOWN
DATE 02/12/98	PLOT SCALE

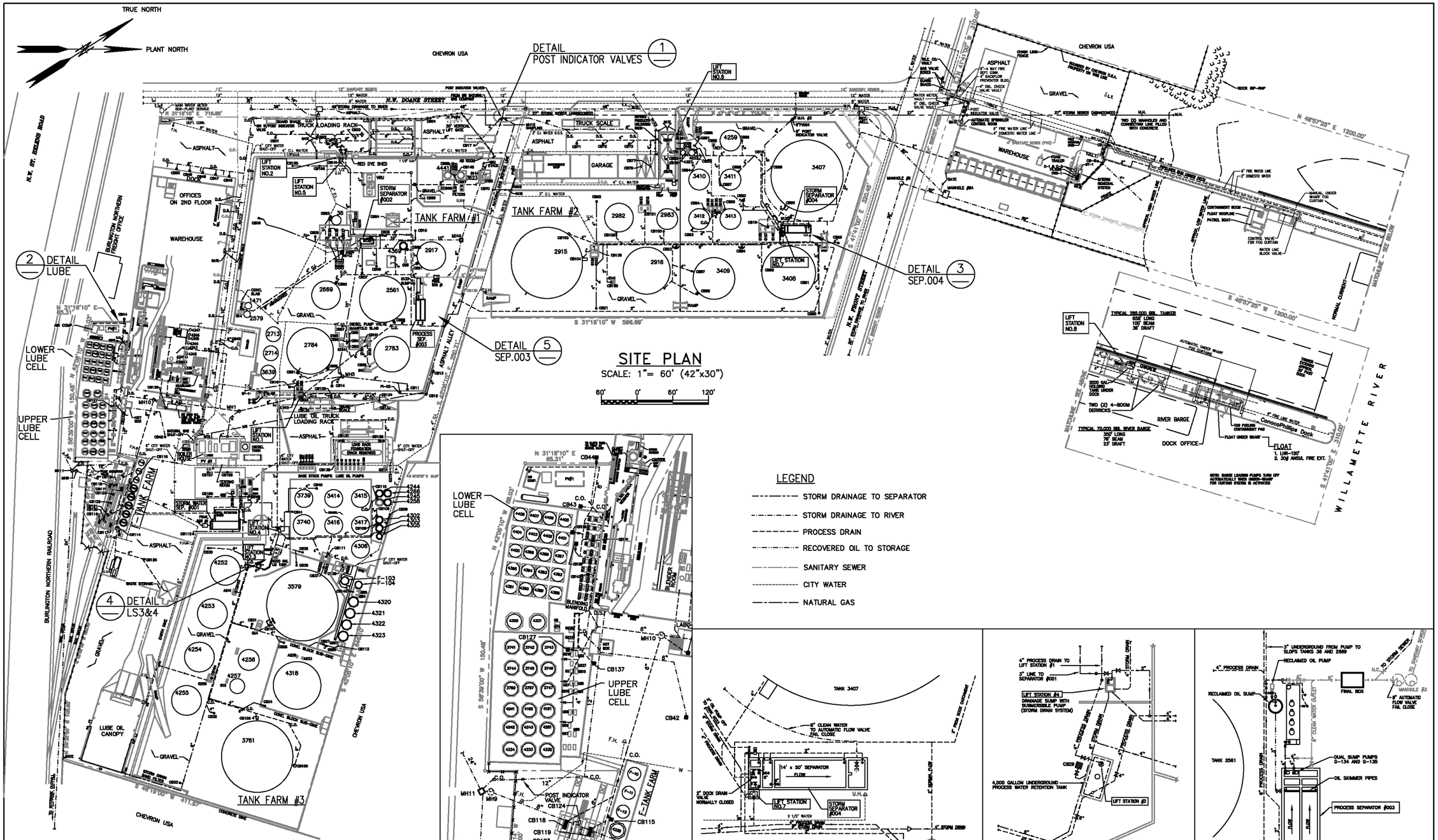
0608-C-1000-D.dwg <CPD: 12/8/2006 [Time: 4:12:40 PM]>

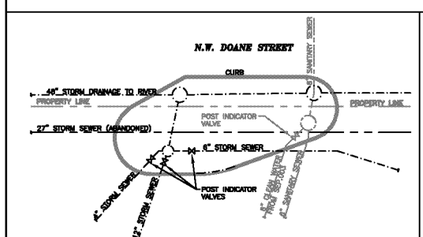
PORTLAND TERMINAL

TITLE: SITE PLAN

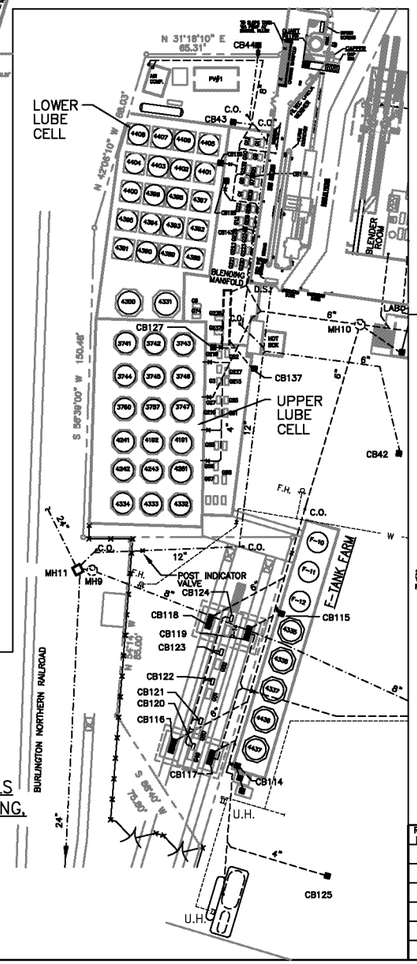
DWG. No. 0608-C-1000 SHEET 1 OF 1 REV. No. D

COP0019872

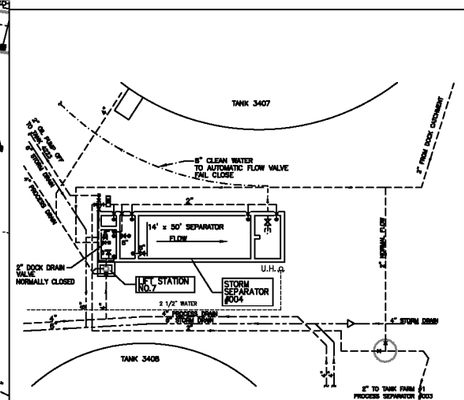




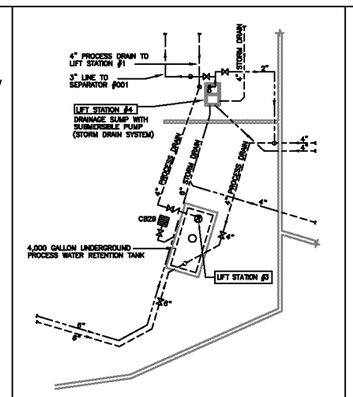
ISLAND AT DOANE STREET
DETAIL 1
NTS



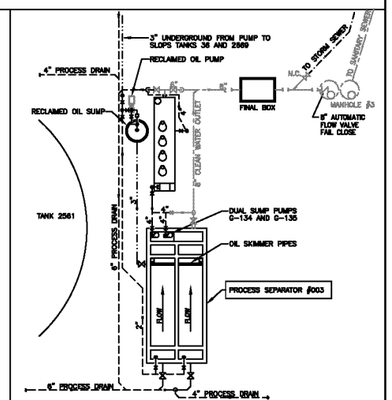
LOWER & UPPER LUBE CELLS RAIL CAR LOADING/OFFLOADING, AND TANK FARM F
DETAIL 2
NTS



OIL/WATER SEPARATOR #004 FOR STORM AND PROCESS DRAINS – TANK FARM 2
DETAIL 3
NTS



PROCESS WATER RETENTION TANK AND STORM DRAIN SUMP – TANK FARM 3
DETAIL 4
NTS



A.P.I SEPARATOR #003 AND HYDROCLEANER – TANK FARM 1
DETAIL 5
NTS

REV. NO.	DATE	REVISED	DRAWN BY	CKD. BY
0	10/15/96	UPDATED PER COAST GUARD REQUIREMENTS	DAB	WHB
1	03/04/97	GENERAL REVISION TO CURRENT STATUS	DAB	KJP
2	07/24/97	UPDATED TO REFLECT STORM DRAINAGE TO RIVER	DAB	MK
3	06/23/99	ADDED VRU, RELOCATE TK3623, G141 TO PROCESS	DAB	WHB
4	01/23/02	ADDED RETAINING WALL AT DOCK WH	DAB	WHB
5	08/13/03	GENERAL REVISION TO CURRENT STATUS	QKB	DAB

ConocoPhillips
5528 N.W. DOANE ST.
PORTLAND, OREGON 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

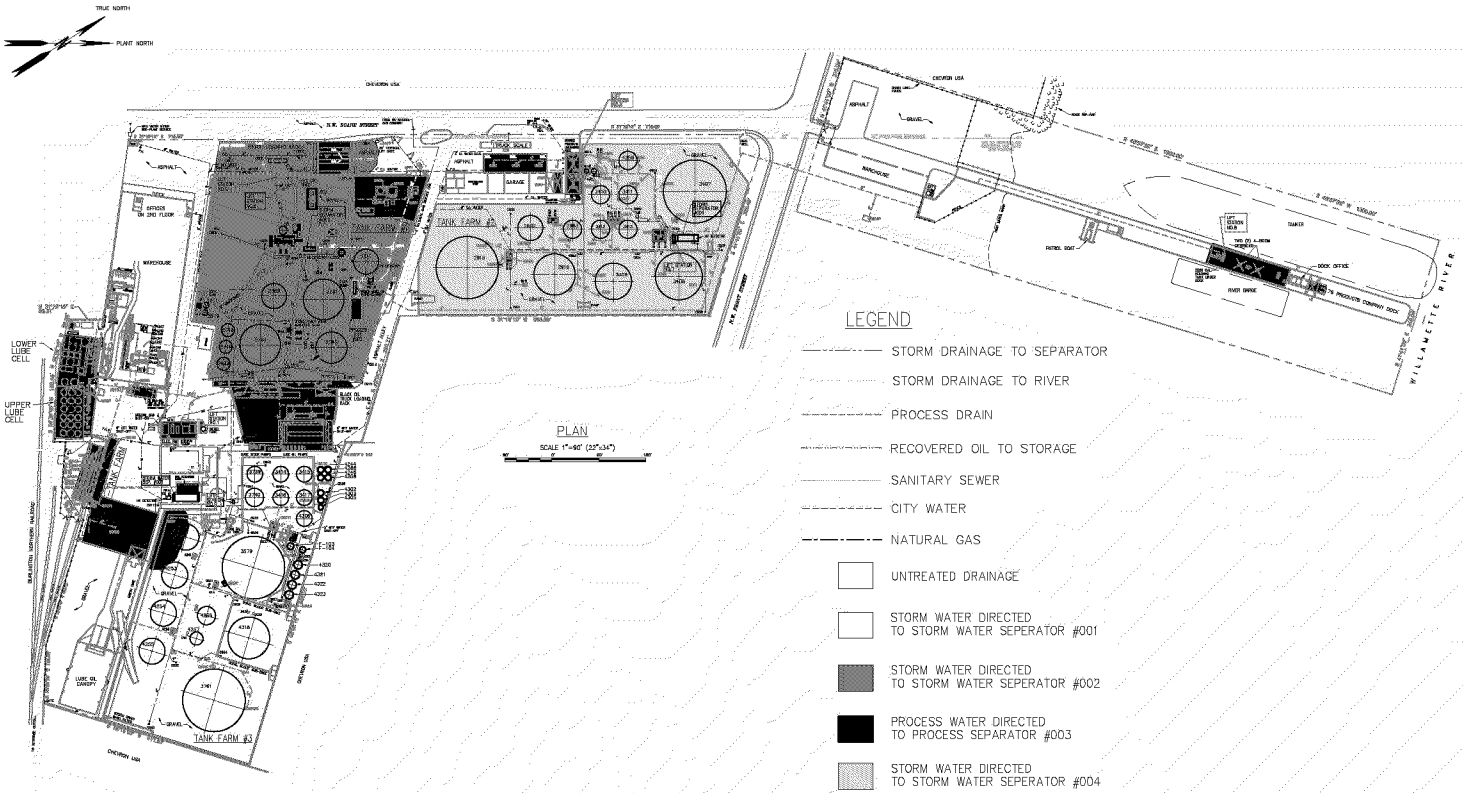
DRAWN BY	D.A.BYNUM
CHKD BY	WHB
APPD BY	KJP
SCALE	1"=60'
DATE	10/15/96

PORTLAND TERMINAL
PORTLAND, OREGON
PLOT PLAN
PROCESS, STORM, AND SANITARY DRAINAGE

DRAWING NO.	SHEET	REV.
0608-C-7000	1 OF 1	5

68c70005.dwg <CPD: 09/18/03 [TIME: 09:52 AM] >

COP0019873



ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE., PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AEC PROJECT NUMBER 25-31

DRAWING NO.	REFERENCE DRAWING
0608-C-7020	DOCK FACILITIES GENERAL ARRANGEMENT
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT
0608-C-7022	TANK FARM NO.2 GENERAL ARRANGEMENT
0608-C-7023	TANK FARM NO.3 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	MHB	03/06/97
B	GENERAL UPDATE	DAB	MK	MHB	03/25/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	MHB	07/24/97
D	REMOVED FIGURE NUMBER AND REVISED LOGO	CKB	WHB	MHB	03/14/03
E	ADD LUBE OIL CANOPY AND WASTE STORAGE	CKB	WHB	MHB	11/22/04
F	UPDATED DRAWING	CEW	DAB	MHB	12/08/06

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ConocoPhillips Pipe Line Company
5528 N.W. DOANE AVE
PORTLAND OREGON

DR. D.A.BYNUM | CONTRACTOR No.
DSGN. D.A.BYNUM | PROJECT NO. 25-31
CK. MK | AP. KJP | DWG. SCALE AS SHOWN
DATE 03/16/97 | PLOT SCALE
0608-C-7010-F.dwg <DPln 12/11/2006 [Time: 6:44:39 AM]>

PORTLAND TERMINAL

TITLE: SITE PLAN
DRAINAGE AREAS

DWG. No. 0608-C-7010 | SHEET 1 OF 1 | REV. No. F

COP0019874

TRUE NORTH

PLANT NORTH

MATCHLINE SEE DWG. 0608-C-7021

NORTH FRONT STEET

PROPERTY LINE N 41°41'00" W 310.00'

8" WATER

CYCLONE FENCE

BOUNDED BY CHEVRON U.S.A. PROPERTY ON THIS LINE

ROCK RIP-RAP

RIVER

PROPERTY LINE N 48°57'25" E 1200.00'

ASPHALT PAVED PARKING AREA

L.T.

M.H.

27" STORM SEWER (ABANDONED)

TWO (2) MANHOLES AND CONNECTING LINE FILLED WITH CONCRETE

TELE. CO. VAULT

GAS VALVE BOXES

4-2 1/2" FIRE DEPT. CONN.

BACKFLOW PREVENTER VALVE

WATER METER VAULT

POWER POLE W/ TRANSFORMERS

SOLENOID VALVES

4" DOMESTIC WATER LINE

6" FIRE WATER LINE

DBL. CHECK VALVE VAULT

20' GATE

NW DOANE STREET

M.H.

ASPHALT PAVED DRIVEWAY

PUSH BUTTON STATION FOR FIRE SYSTEM

F.A.

Y.D.L.T.

CB

PIPLINES RUN UNDER DECK

2" DRAIN

WINCH

CAMEL LOGS

MANUAL, UNDER WHARF FOG CURTAIN

6" FIRE WATER LINE

2" DOMESTIC WATER

LIFT STATION NO.8

1500# DERRICK & WINCH

TYPICAL 285,000 BBL. TANKER
658' LONG
100' BEAM
36' DRAFT

TANKER EXTENDS APPROX. 30' PAST DOCK

AUTOMATIC, UNDER WHARF FOG CURTAINS

WOOD DECK

MVLT

L.R.

LHR-150'

A-20

CONCRETE

U.O.C.O. LIGHTED SIGN

LT (RED)

HATCH

4" FIRE LINE WATER

WOOD DECK

WINCH

LT (GRN)

PROPERTY LINE S 41°41'00" E 310.00'

AUTOMATIC SPRINKLER CONTROL ROOM

WAREHOUSE
40' X 200'

FOAM TRAILER

GATE

CB-A

APPROX. HIGH WATER LINE

APPROX. LOW WATER LINE

CONTAINMENT BOOM

FLOAT ROOFLINE

PATROL BOAT

CONTROL VALVE FOR FOG CURTAIN

WATER LINE BLOCK VALVE

MERCURY VAPOR LIGHT & ON-OFF PUSH BUTTON STATION FOR M.V. LIGHTS

MOORING BITT (TYP)

2000 GAL. HOLDING TANK UNDER DOCK

TUG FUELING CONTAINMENT PAD

FLOAT UNDER WHARF

OFFICE & WAREHOUSE BLDG.

TYPICAL 70,000 BBL RIVER BARGE
350' LONG
76' BEAM
23' DRAFT

FLOAT
1. LHR-150'
2. 30# ANSUL FIRE EXT.

WILLAMETTE
NORMAL CURRENT

AOV CONTROLS

M.H. #8A

M.H. #8

CB147

60"

30"

2"

4"

PROPERTY LINE S 48°57'25" W 1200.00'

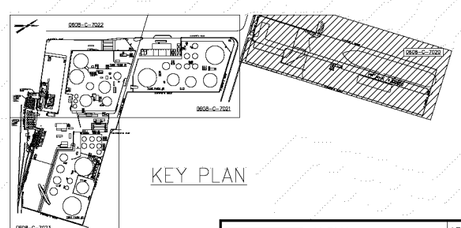
PLAN

SCALE 1"=40' (22"x34")

40' 0' 40' 80'

LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2905 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AECI PROJECT NUMBER 25-31

DRAWING NO.	REFERENCE DRAWING
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98
E	ADDED AOV CONTROLS,	QKB	WHB	WHB	03/14/03
E	REMOVED BARGE LOADING NOTE				
F	UPDATED TITLEBLOCK	CEW	WHB	WHB	12/08/06

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ConocoPhillips Pipe Line Company
5228 SW DOANE. AVE.
PORTLAND OR 97210

DR. C.W.PORFILY	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. WHB AP.	DWG. SCALE AS SHOWN
DATE 03/16/97	PLOT SCALE

PORTLAND TERMINAL

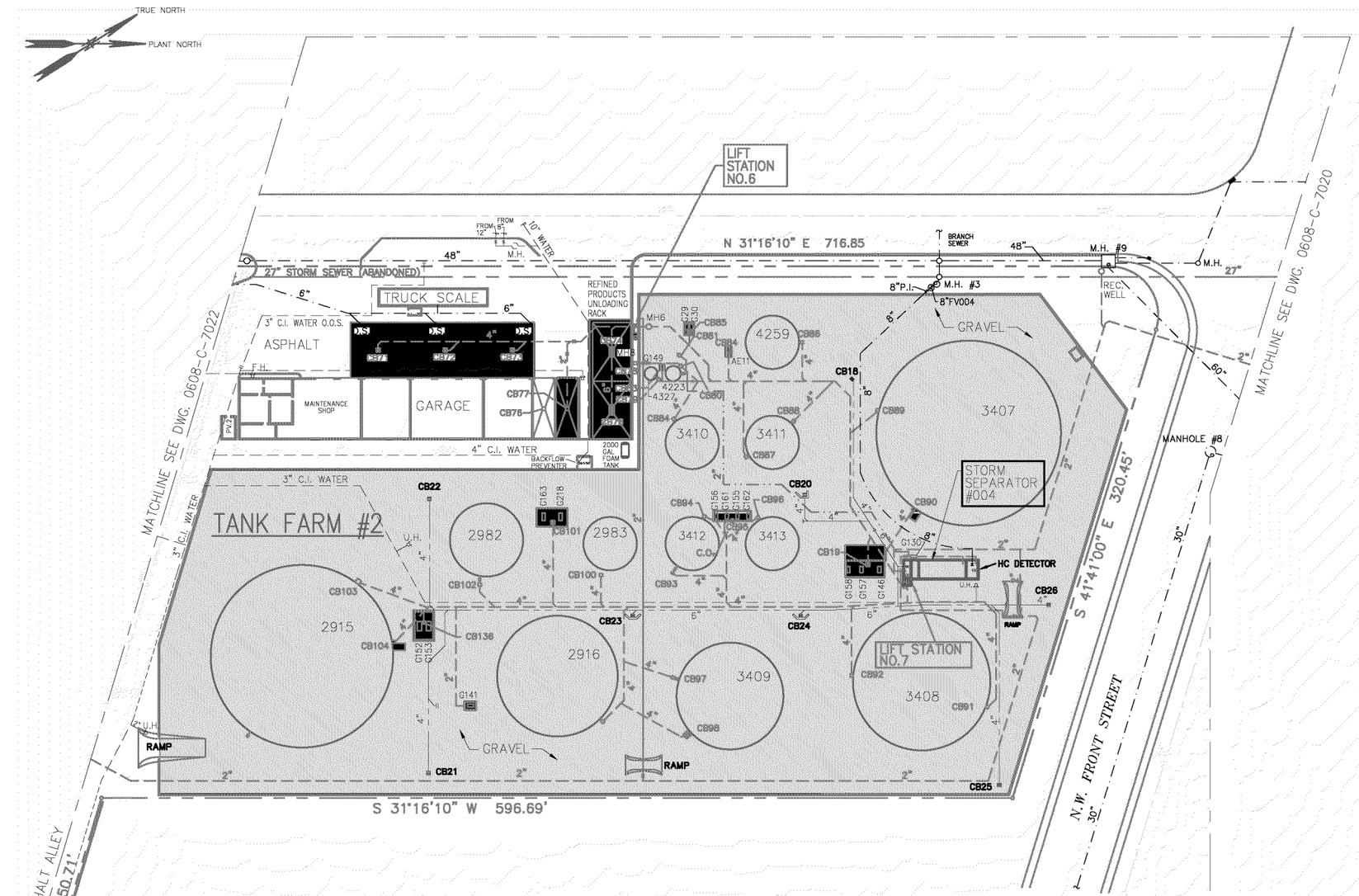
TITLE: DOCK FACILITIES
SITE DRAINAGE PLAN

DWG. No. 0608-C-7020-F

SHEET 1 OF 1

REV. No. F

COP0019875

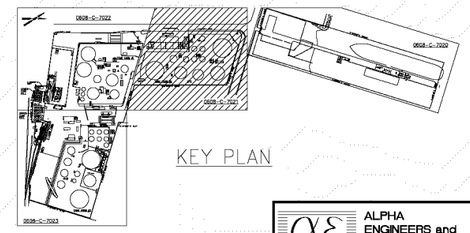


PLAN

SCALE 1"=40' (22"x34")

LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- RECOVERED OIL TO STORAGE
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- STORM WATER DIRECTED TO STORM WATER SEPERATOR #004
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

DRAWING NO.	REFERENCE DRAWING
0608-C-7020	DOCK FACILITIES GENERAL ARRANGEMENT
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98
E	UPDATE FOR CHANGES ON 0608-C-7000	DAB	SM	WHB	09/10/99
F	REMOVE FIGURE NO. AND REVISED LOGO	QKB	WHB	WHB	03/14/03
G	UPDATED TITLEBLOCK	CEW	WHB	WHB	12/08/06

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ConocoPhillips Pipe Line Company
5228 SW DOANE. AVE.
PORTLAND OR 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3717/Fax:(503)227-3244

AEI PROJECT NUMBER 25-31

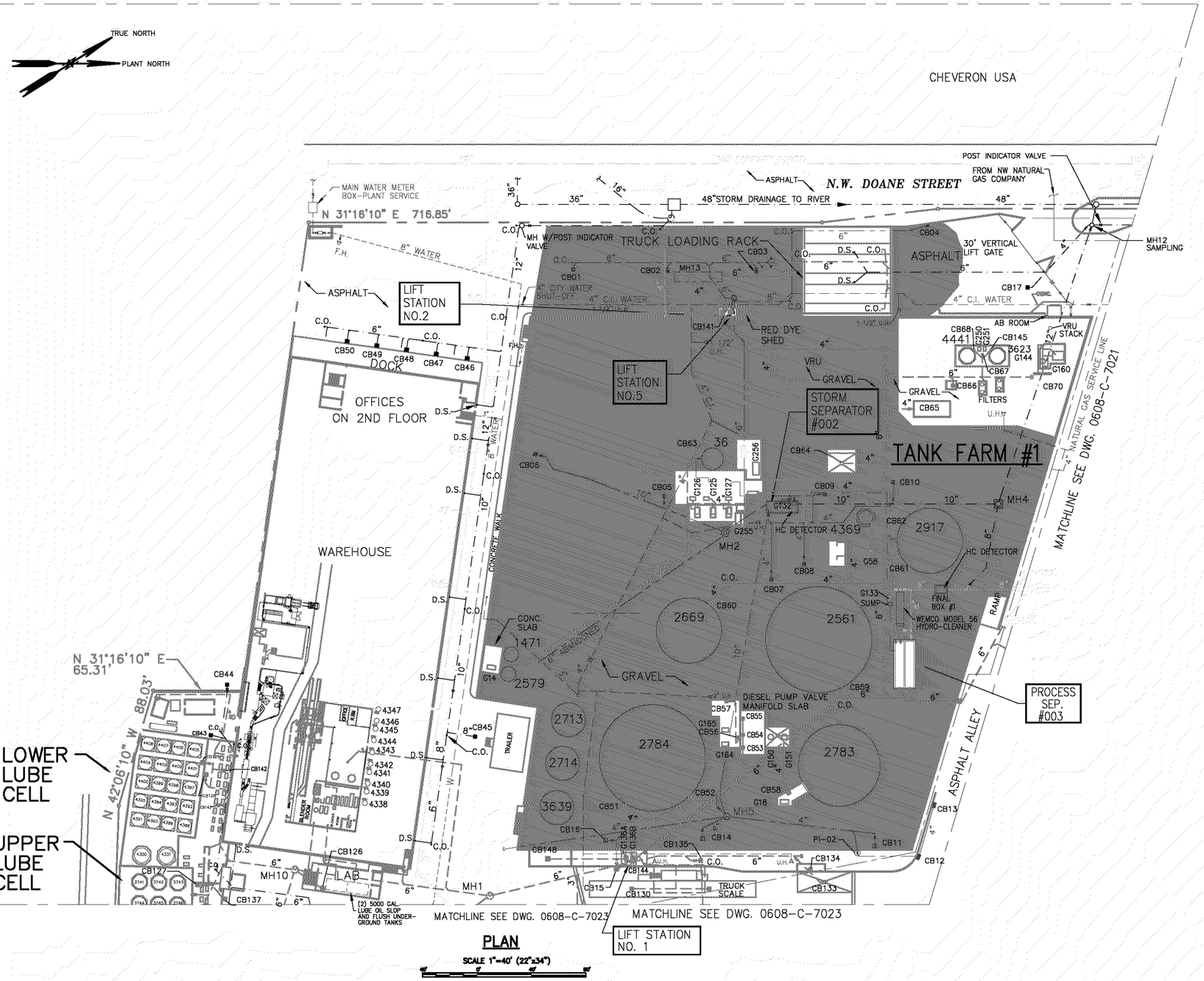
DR. C.W.PORFILY	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. WHB AP.	DWG. SCALE AS SHOWN
DATE 03/16/97	PLOT SCALE

PORTLAND TERMINAL

TITLE: TANK FARM 2
SITE DRAINAGE PLAN

DWG. No. 0608-C-7021-G | SHEET 1 OF 1 | REV. No. G

COP0019876

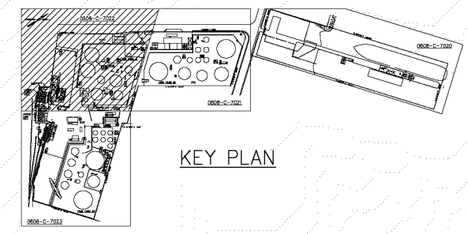


PLAN

SCALE 1"=40' (22"x34")

LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- RECOVERED OIL TO STORAGE
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- STORM WATER DIRECTED TO STORM WATER SEPERATOR #002
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

DRAWING NO.	REFERENCE DRAWING
0608–C–7021	TANK FARM NO.2 GENERAL ARRANGEMENT
0608–C–7023	TANK FARM NO.3 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98
E	UPDATE TO REFLECT CHANGES OM 0608–C–7000	DAB	SM	WHB	09/10/99
F	REMOVE FIGURE NO. AND REVISE LOGO	QKB	WHB	WHB	03/04/03
G	UPDATE TITEBLOCK	CEW	WHB	WHB	12/08/06

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE

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ConocoPhillips Pipe Line Company
5228 SW DOANE. AVE.
PORTLAND OR 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227–3317/Fax:(503)227–3244

AECI PROJECT NUMBER 25–86

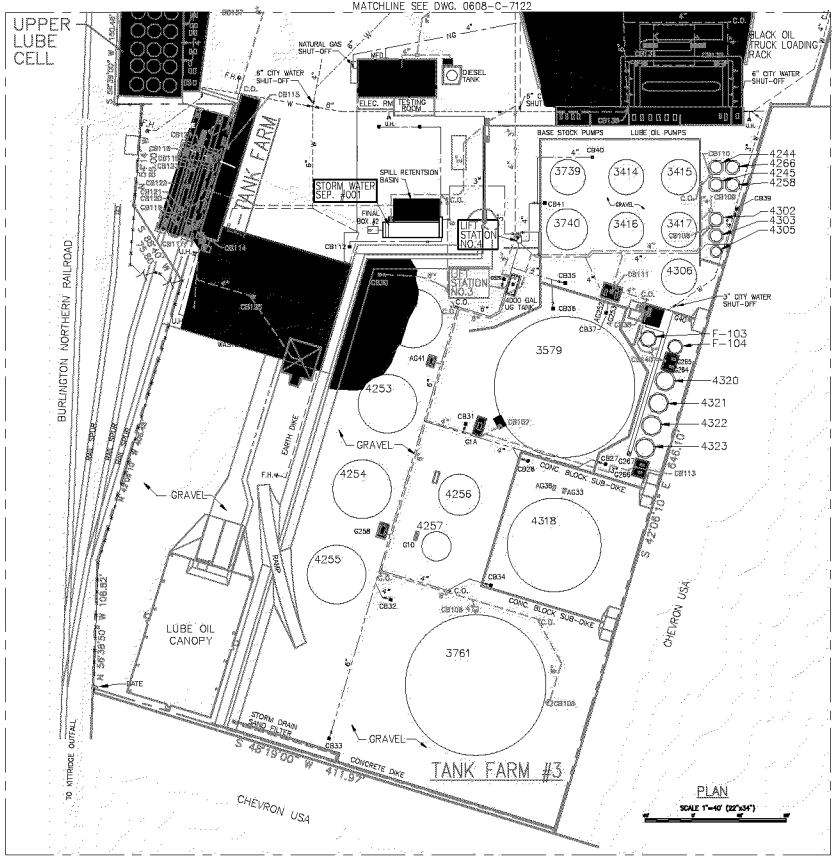
DR. C.W.PORFILY	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25–31
CK. WHB AP.	DWG. SCALE AS SHOWN
DATE 03/16/97	PLOT SCALE

PORTLAND TERMINAL

TITLE: TANK FARM 1
SITE DRAINAGE PLAN

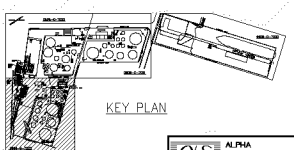
DWG. No. 0608–C–7022–G | SHEET 1 OF 1 | REV. No. G

COP0019877



LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- STORM WATER DIRECTED TO STORM WATER SEPERATOR #001
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

ALPHA ENGINEERS and CONSULTORS, INC.

AEC PROJECT NUMBER 25-31

DRAWING NO.	REFERENCE DRAWING
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SW	WHB	09/12/98
E	UPDATE FOR CHANGES ON 0608-C-7000	DAB	SW	WHB	09/18/98
F	REMOVE FIGURE NO. AND REVISED LOGO	CKB	WHB	WHB	03/14/03
G	UPDATED TITLEBLOCK	CDW	WHB	WHB	12/08/06

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE

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ConocoPhillips Pipe Line Company
5228 SW DOANE AVE.
PORTLAND OR 97210

DR. D.A.BYNUM		CONTRACTOR No.	
DSGN. D.A.BYNUM		PROJECT NO. 25-31	
CK. MK	AP. KJP	DWG. SCALE AS SHOWN	
DATE 03/16/97		PLOT SCALE	

PORTLAND TERMINAL

TITLE: TANK FARM 3
SITE DRAINAGE PLAN

DWG. No. 0608-C-7023

SHEET 1 OF 1

REV. No. G

COP0019878

PLAN

SCALE 1"=90' (22"x34")

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Tank Farm 1						
36	Slop Oil	14'-6"	16'	Riveted Steel	20,496	1907
1471	Hydraulic Tractor Fluid	10'-9"	28'-8½"	Riveted Steel	17,300	1921
2561	Marine Fuel Oil	78'-0"	46'-7"	Riveted Steel	1,569,582	1929
2579	Hydraulic Tractor Fluid	10'-9"	29'-8"	Welded Steel	18,000	1929
2669	Marine Diesel	48'-0"	35'-3"	Riveted Steel	449,694	1931
2713	Unax AW 46	24'-0"	35'-0"	Welded Steel	109,000	1937
2714	Guardol 15W/40	24'-0"	35'-0"	Welded Steel	109,000	1937
2783	Decant Oil	60'-0"	46'-7"	Riveted Steel	948,066	1937
2784	Diesel #2	78'-0"	40'-10"	Riveted Steel	1,439,130	1937
2917	RLOP 220 N	48'-0"	48'-0"	Welded Steel	612,000	1938
3623	HiTec 6576	10'-9"	30'-0"	Welded Steel	18,228	1950
3639	SUP SYN BL 5W/30	25'-0"	36'-0"	Welded Steel	120,000	1951
4369	RLOP 220N	10'-9"	30'-0"	Welded Steel	17,500	1979
4441	Octel 9056	10'-9"	30'-0"	Welded Steel	18,648	1993
Tank Farm 2						
2915*	Unleaded Gasoline	120'-0"	42'-0"	Welded Steel	3,262,056	1938
2916	Diesel #2	78'-0"	48'-0"	Welded Steel	1,652,196	1938
2982	Diesel #1	48'-0"	36'-0"	Welded Steel	416,262	1941
2983	RLOP 220 N	36'-0"	42'-0"	Welded Steel	304,000	1941
3407	Unleaded Gasoline	120'-0"	40'-0"	Welded Steel	2,955,540	1949
3408*	Unleaded Gasoline	90'-0"	40'-0"	Welded Steel	1,639,680	1949
3409	Unleaded Gasoline	70'-0"	40'-0"	Welded Steel	948,654	1949
3410	Ethanol	35'-0"	42'-0"	Welded Steel	278,964	1949
3411	Unleaded Gasoline	35'-0"	42'-0"	Welded Steel	259,350	1949
3412	Diesel #1	35'-0"	42'-0"	Welded Steel	279,426	1949
3413	Unleaded Gasoline	35'-0"	42'-0"	Welded Steel	259,560	1949
4223	Slop Oil	10'-9"	30'-0"	Welded Steel	18,690	1968
4259	Transmix	35'-0"	32'-0"	Welded Steel	205,506	1968
4327	Gasoline Slops	8'-6"	24'-0"	Welded Steel	10,080	1974

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Lube Blending Warehouse						
4338	Conoco AN 801	3'-6"	14'-0"	Welded Steel	1000	1974
4339	Ethyl HITEC 534	3'-6"	14'-0"	Welded Steel	1000	1974
4340	Ethyl HITEC 385	3'-6"	14'-0"	Welded Steel	1000	1974
4341	Utility	3'-6"	14'-0"	Welded Steel	1000	1974
4342	HITEC 008	3'-6"	14'-0"	Welded Steel	1000	1974
4343	Viscoplex 1-302	3'-6"	14'-0"	Welded Steel	1000	1974
4344	Oleic Acid/Emersol 213	3'-6"	14'-0"	Welded Steel	1000	1974
4345	Lubrizol 8790	3'-6"	14'-0"	Welded Steel	1000	1974
4346	Utility	3'-6"	14'-0"	Welded Steel	1000	1974
4347	Utility	3'-6"	14'-0"	Welded Steel	1000	1974
F-14	Flush - Under Lab	5'-3"	30'-0"	Welded Steel	5000	1981
F-8	Utility			Welded Steel	1000	1968
F-9	Line Clippings			Welded Steel	2200	1954
F-13	Slops - Under Lab	5'-3"	30'-0"	Welded Steel	5000	1981

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Tank Farm 3						
3414	RLOP 220 N	30'-0"	42'-0"	Welded Steel	200,000	1949
3415	SUN 525	30'-0"	42'-0"	Welded Steel	200,000	1949
3416	RLOP 100N	30'-0"	42'-0"	Welded Steel	200,000	1949
3417	ULTRA S-4	30'-0"	42'-0"	Welded Steel	200,000	1949
3579	Industrial Fuel Oil	120'-0"	40'-0"	Welded Steel	3,307,668	1950
3739	SUN 150 B/S	30'-0"	42'-0"	Welded Steel	200,000	1954
3740	RLOP 600 N	35'-0"	42'-0"	Welded Steel	277,000	1954
3761	Diesel #2	120'-0"	40'-0"	Welded Steel	3,240,342	1954
4244	Mohawk 450	10'-9"	30'-0"	Welded Steel	17,500	1968
4245	SUN 525	10'-9"	30'-0"	Welded Steel	17,500	1968
4252	Residual Fuel Oil	50'-0"	32'-0"	Welded Steel	458,640	1968
4253	Residual Fuel Oil	50'-0"	32'-0"	Welded Steel	451,290	1968
4254	PS 300	50'-0"	32'-0"	Welded Steel	459,312	1968
4255	Out of Service	50'-0"	32'-0"	Welded Steel	404,250	1968
4256	Out of Service	35'-0"	32'-0"	Welded Steel	195,408	1968
4257	Out of Service	25'-0"	16'-0"	Welded Steel	38,367	1968
4258	Line Clippings	10'-9"	30'-0"	Welded Steel	18,000	1968
4266	Flush	10'-9"	30'-0"	Welded Steel	17,500	1968
4302	RLOP 600N	10'-9"	30'-0"	Welded Steel	17,500	1971
4303	RLOP 100N	10'-9"	30'-0"	Welded Steel	17,500	1971
4305	Out of Service	8'-6"	24'-0"	Welded Steel	8,900	1971
4306	RLOP 100N	30'-0"	42'-2½"	Welded Steel	200,000	1971
4318	Diesel #2	80'-0"	43'-3"	Welded Steel	1,422,456	1973
4320	Sup Syn BL 10W/30	15'-0"	32'-2½"	Welded Steel	35,000	1973
4321	Uniguide II 100	15'-0"	32'-2½"	Welded Steel	35,000	1973
4322	T5X HD 15W/40	15'-0"	32'-2½"	Welded Steel	35,000	1973
4323	Super ATF	15'-0"	32'-2½"	Welded Steel	35,000	1973
F103	UTRA58	12'-6"	32'-0"	Welded Steel	25,500	1973
F104	UTRA58	10'-9"	32'-0"	Welded Steel	17,500	1973
F-Tank Farm						
4335	Utility	10'-9"	30'-0"	Welded Steel	17,500	1973
4336	Utility	10'-9"	30'-0"	Welded Steel	17,500	1973
4337	Utility	10'-9"	30'-0"	Welded Steel	17,500	1973
4436	Unax AW 32	10'-9"	30'-0"	Welded Steel	17,500	1990
4437	Unax AW WR 32	10'-9"	30'-0"	Welded Steel	17,500	1990
F10	Utility	10'-9"	10'-0"	Welded Steel	5,200	1954
F11	Utility	10'-9"	10'-0"	Welded Steel	5,200	1954
F12	Utility	10'-9"	10'-0"	Welded Steel	5,200	1954

Tank Number	Product Stored	Diameter	Height	Type of Construction	Safe Fill Capacity (gal)	Year of Construction
Upper Lube Cell						
3741	Ramar CLF 17E	10'-9"	30'-0"	Welded Steel	17,500	1954
3742	MP Gear Lube 80/90	10'-9"	30'-0"	Welded Steel	17,500	1954
3743	Utility	10'-9"	30'-0"	Welded Steel	18,600	1954
3744	HYNAP N100	10'-9"	30'-0"	Welded Steel	17,500	1954
3745	HITEC 5751	10'-9"	30'-0"	Welded Steel	17,500	1954
3746	Lubrizol 4998C	10'-9"	30'-0"	Welded Steel	17,500	1954
3747	Lubrizol 4990CH	10'-9"	30'-0"	Welded Steel	17,500	1954
3757	HITEC 1193	10'-9"	30'-0"	Welded Steel	17,500	1954
3760	Raffene 750L	10'-9"	30'-0"	Welded Steel	17,500	1954
4191	Lubrizol 48254	10'-9"	30'-0"	Welded Steel	17,500	1964
4192	Lubrizol 7075F	10'-9"	30'-0"	Welded Steel	17,500	1964
4241	UNAX AW 68	10'-9"	30'-0"	Welded Steel	17,500	1968
4242	UNAX AW 68	10'-9"	30'-0"	Welded Steel	17,500	1968
4243	HT4/10W	10'-9"	30'-0"	Welded Steel	17,500	1968
4281	Versa Tran ATF	10'-9"	30'-0"	Welded Steel	17,500	1969
4332	Super ATF	10'-9"	30'-0"	Welded Steel	17,500	1973
4333	Point Premier 10W/30	10'-9"	30'-0"	Welded Steel	17,500	1973
4334	Super 5W/20	10'-9"	30'-0"	Welded Steel	17,500	1973
Lower Lube Cell						
4300	Ramar CLF 17E	12'-6"	32'-0"	Welded Steel	25,500	1969
4331	Ethyl HITEC 6888E	12'-6"	32'-0"	Welded Steel	25,500	1973
4388	Utility	9'-4"	23'-9"	Welded Steel	13,500	1984
4389	Utility	9'-4"	23'-9"	Welded Steel	13,500	1984
4390	Bar & Chain 150	9'-4"	23'-9"	Welded Steel	13,500	1985
4391	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4392	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4393	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4394	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4395	Utility	9'-4"	23'-9"	Welded Steel	13,500	1985
4397	Lubrizol 9692A	9'-4"	23'-9"	Welded Steel	13,500	1985
4398	HITEC 1193A	9'-4"	23'-9"	Welded Steel	13,500	1985
4399	Firebird 15W/40	9'-4"	23'-9"	Welded Steel	13,500	1985
4400	Guardol 30	9'-4"	23'-9"	Welded Steel	13,500	1985
4401	Mohawk 150	9'-4"	23'-9"	Welded Steel	13,500	1985
4402	TSX HD10	9'-4"	23'-9"	Welded Steel	13,500	1985
4403	HT4/30W	9'-4"	23'-9"	Welded Steel	13,500	1985
4404	Fleet Sup EC 15W/40	9'-4"	23'-9"	Welded Steel	13,500	1985
4405	HITEC 3472	9'-4"	23'-9"	Welded Steel	13,500	1987
4406	Lubrizol 9990A	9'-4"	23'-9"	Welded Steel	13,500	1987
4407	Ethyl HITEC 388	9'-4"	23'-9"	Welded Steel	13,500	1987
4408	Ethyl HITEC 5756	9'-4"	23'-9"	Welded Steel	13,500	1987

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AECI PROJECT NUMBER: 25-31

DRAWING NO.	REFERENCE DRAWING	NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE	NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
		A	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98						
		B	REVISE BARRELS ON TANK DATA AND LOGO	QKB	WHB	WHB	03/10/03						
		C	ADD LUBE OIL CANOPY AND WASTE STORAGE	QKB	WHB	WHB	11/22/04						
		D	GENERAL REVISION	CEW	WHB	WHB	12/08/06						

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ConocoPhillips Pipe Line Company
5528 N.W. DOANE AVE
PORTLAND OREGON

DR. D.A.BYNUM	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. MK / AP. KJP	DWG. SCALE AS SHOWN
DATE 02/12/98	PLOT SCALE

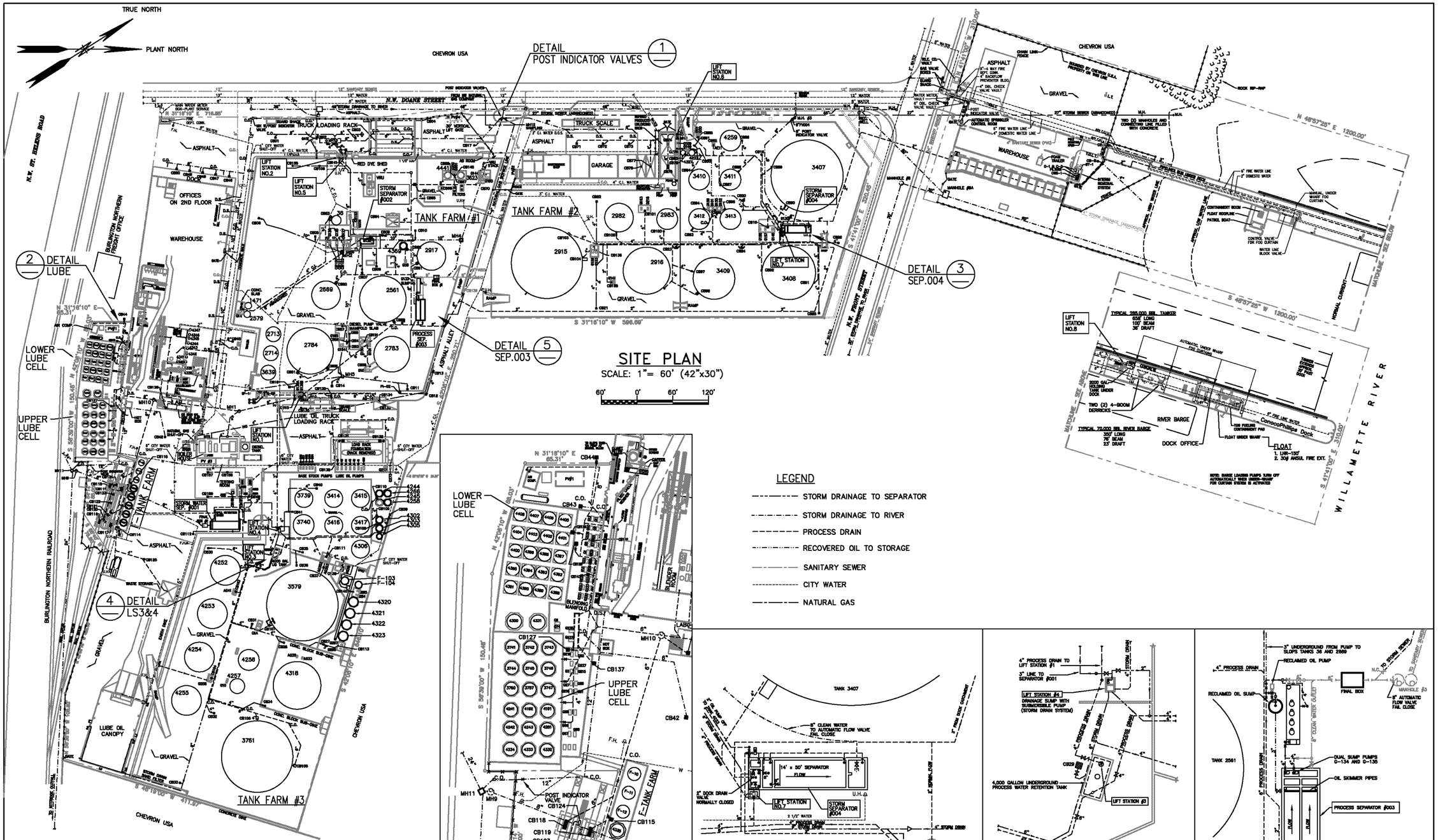
0608-C-1000-D.dwg <CPD: 12/8/2006 [Time: 4:12:40 PM]>

PORTLAND TERMINAL

TITLE: SITE PLAN

DWG. No. 0608-C-1000 SHEET 1 OF 1 REV. No. D

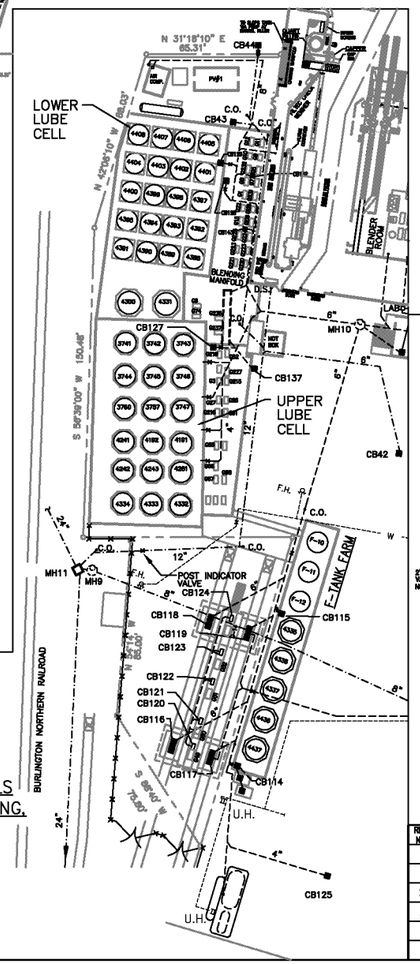
COP0019879



SITE PLAN

SCALE: 1"= 60' (42"x30")

60' 0' 60' 120'

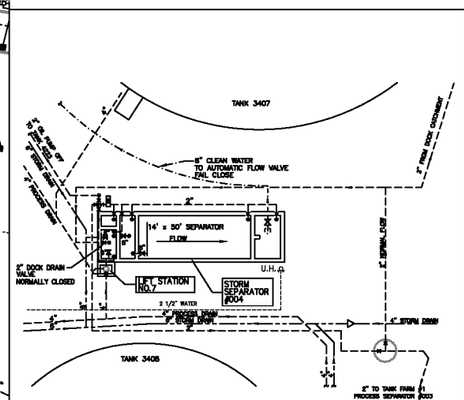


LOWER & UPPER LUBE CELLS RAIL CAR LOADING/OFFLOADING, AND TANK FARM F

DETAIL 2 NTS

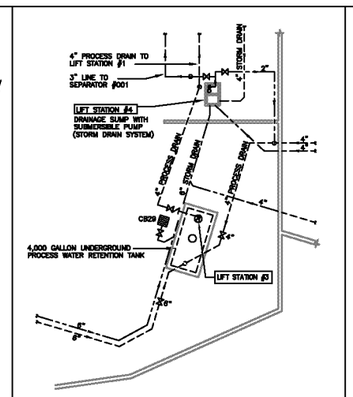
LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- RECOVERED OIL TO STORAGE
- SANITARY SEWER
- CITY WATER
- NATURAL GAS



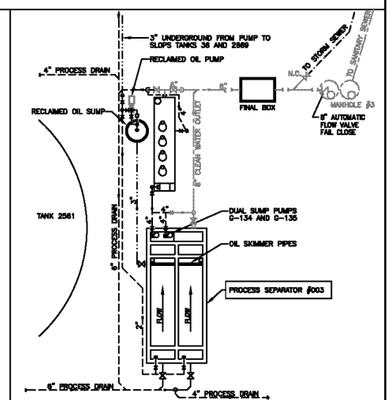
OIL/WATER SEPARATOR #004 FOR STORM AND PROCESS DRAINS – TANK FARM 2

DETAIL 3 NTS



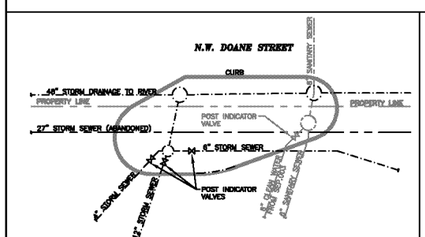
PROCESS WATER RETENTION TANK AND STORM DRAIN SUMP – TANK FARM 3

DETAIL 4 NTS



A.P.I SEPARATOR #003 AND HYDROCLEANER – TANK FARM 1

DETAIL 5 NTS



ISLAND AT DOANE STREET

DETAIL 1 NTS

REV. NO.	DATE	REVISED	DRAWN BY	CKD. BY
0	10/15/96	UPDATED PER COAST GUARD REQUIREMENTS	DAB	WHB
1	03/04/97	GENERAL REVISION TO CURRENT STATUS	DAB	KJP
2	07/24/97	UPDATED TO REFLECT STORM DRAINAGE TO RIVER	DAB	MK
3	06/23/99	ADDED VRU, RELOCATE TK3623, G141 TO PROCESS	DAB	WHB
4	01/23/02	ADDED RETAINING WALL AT DOCK WH	DAB	WHB
5	08/13/03	GENERAL REVISION TO CURRENT STATUS	QKB	DAB

ConocoPhillips
5528 N.W. DOANE ST.
PORTLAND, OREGON 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
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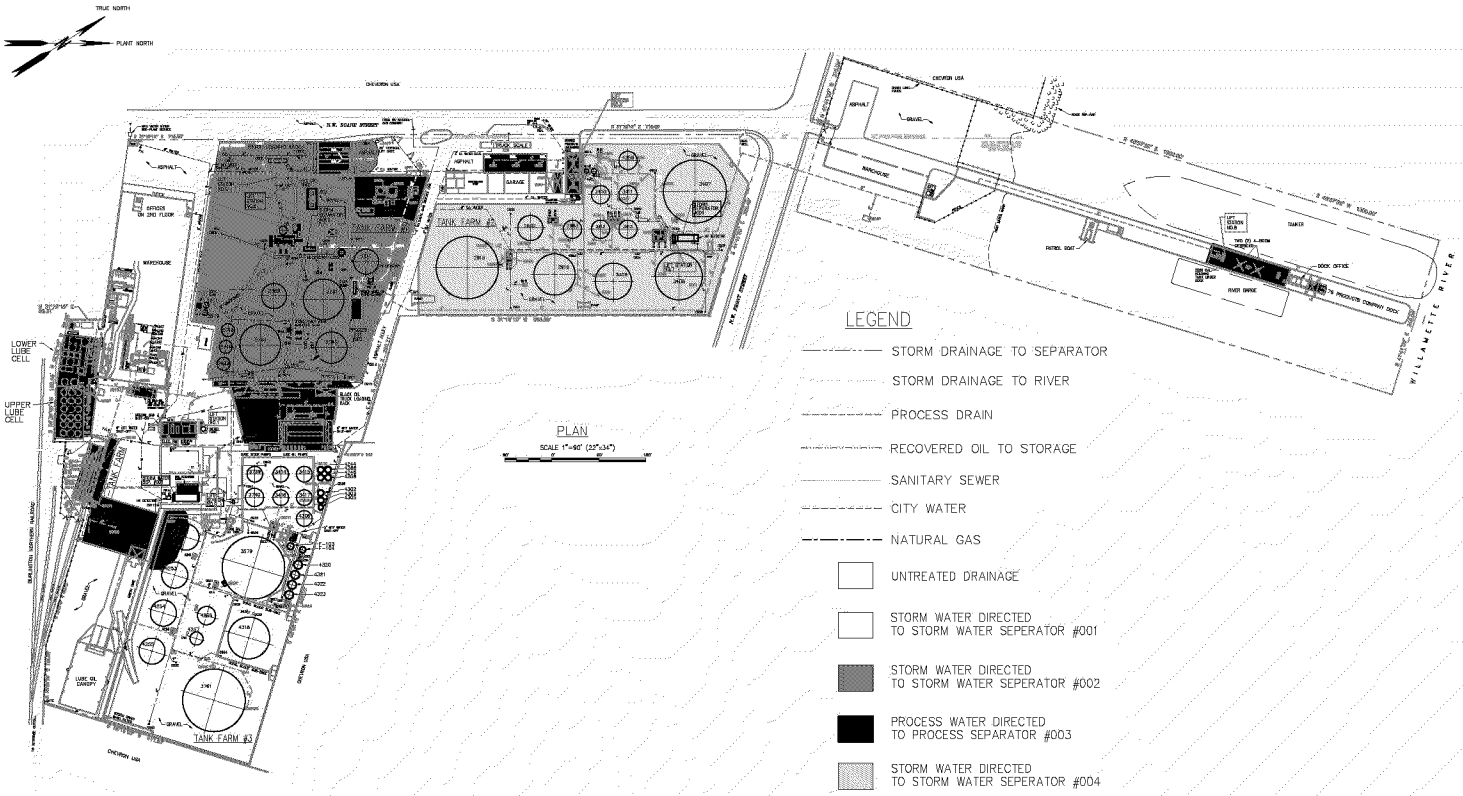
DRAWN BY	D.A.BYNUM
CHKD BY	WHB
APPD BY	KJP
SCALE	1"=60'
DATE	10/15/96

PORTLAND TERMINAL
PORTLAND, OREGON
PLOT PLAN
PROCESS, STORM, AND SANITARY DRAINAGE

DRAWING NO.	SHEET	REV.
0608-C-7000	1 OF 1	5

68c70005.dwg <CPD: 09/18/03 [TIME: 09:52 AM] >

COP0019880



ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE., PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AEC PROJECT NUMBER 25-31

DRAWING NO.	REFERENCE DRAWING
0608-C-7020	DOCK FACILITIES GENERAL ARRANGEMENT
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT
0608-C-7022	TANK FARM NO.2 GENERAL ARRANGEMENT
0608-C-7023	TANK FARM NO.3 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	MHB	03/06/97
B	GENERAL UPDATE	DAB	MK	MHB	03/25/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	MHB	07/24/97
D	REMOVED FIGURE NUMBER AND REVISED LOGO	CKB	WHB	MHB	03/14/03
E	ADD LUBE OIL CANOPY AND WASTE STORAGE	CKB	WHB	MHB	11/25/04
F	UPDATED DRAWING	CEW	DAB	MHB	12/08/06

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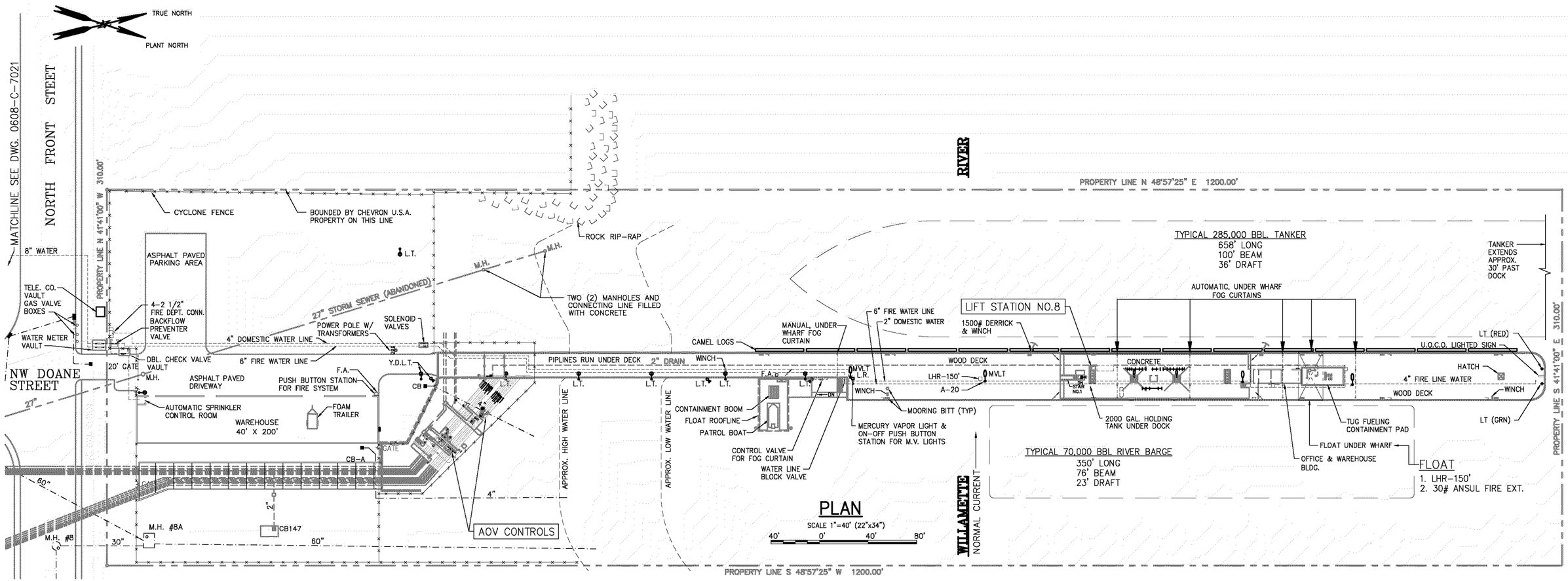
ConocoPhillips Pipe Line Company
5528 N.W. DOANE AVE
PORTLAND OREGON

DR. D.A.BYNUM | CONTRACTOR No.
DSGN. D.A.BYNUM | PROJECT NO. 25-31
CK. MK | AP. KJP | DWG. SCALE AS SHOWN
DATE 03/16/97 | PLOT SCALE
0608-C-7010-F.dwg <DPth 12/11/2006 [Time: 6:44:39 AM]>

PORTLAND TERMINAL

TITLE: SITE PLAN DRAINAGE AREAS

DWG. No. 0608-C-7010 | SHEET 1 OF 1 | REV. No. F



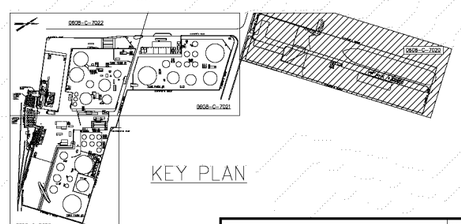
PLAN

SCALE 1"=40' (22"x34")

40' 0' 40' 80'

LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

ALPHA ENGINEERS and CONSTRUCTORS, INC.
2905 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AECI PROJECT NUMBER 25-31

DRAWING NO.	REFERENCE DRAWING
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98
E	ADDED AOV CONTROLS,	QKB	WHB	WHB	03/14/03
E	REMOVED BARGE LOADING NOTE				
F	UPDATED TITLEBLOCK	CEW	WHB	WHB	12/08/06

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ConocoPhillips Pipe Line Company
5228 SW DOANE. AVE.
PORTLAND OR 97210

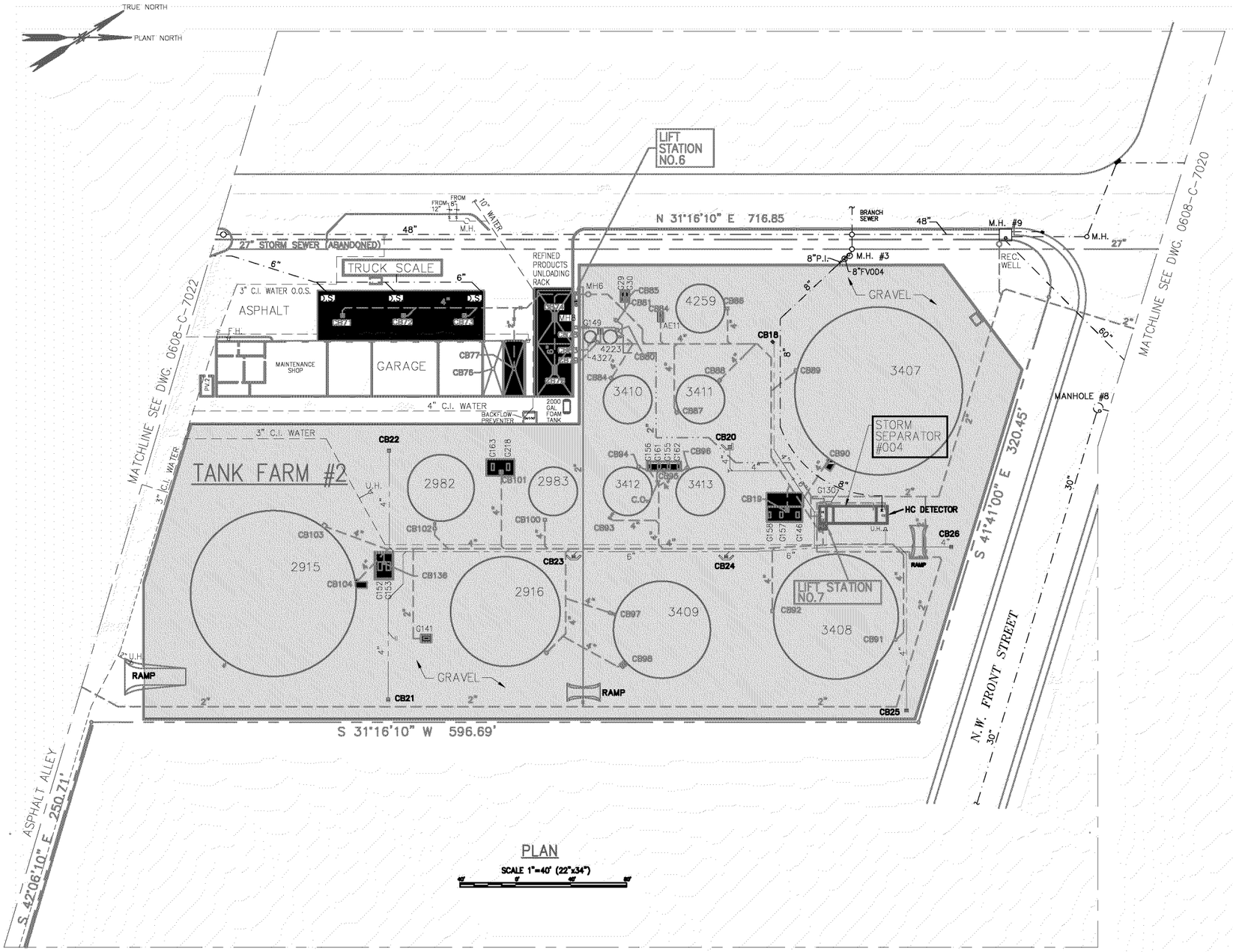
DR. C.W.PORFILY	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. WHB AP.	DWG. SCALE AS SHOWN
DATE 03/16/97	PLOT SCALE

PORTLAND TERMINAL

TITLE: DOCK FACILITIES
SITE DRAINAGE PLAN

DWG. No. 0608-C-7020-F | SHEET 1 OF 1 | REV. No. F

COP0019882

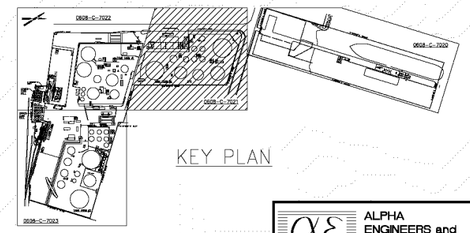


PLAN

SCALE 1"=40' (22"x34")

LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- RECOVERED OIL TO STORAGE
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- STORM WATER DIRECTED TO STORM WATER SEPERATOR #004
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

DRAWING NO.	REFERENCE DRAWING
0608-C-7020	DOCK FACILITIES GENERAL ARRANGEMENT
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98
E	UPDATE FOR CHANGES ON 0608-C-7000	DAB	SM	WHB	09/10/99
F	REMOVE FIGURE NO. AND REVISED LOGO	QKB	WHB	WHB	03/14/03
G	UPDATED TITLEBLOCK	CEW	WHB	WHB	12/08/06

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ConocoPhillips Pipe Line Company
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ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3717/Fax:(503)227-3244

DR. C.W.PORFILY	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. WHB AP.	DWG. SCALE AS SHOWN
DATE 03/16/97	PLOT SCALE

AEI PROJECT NUMBER 25-31

PORTLAND TERMINAL

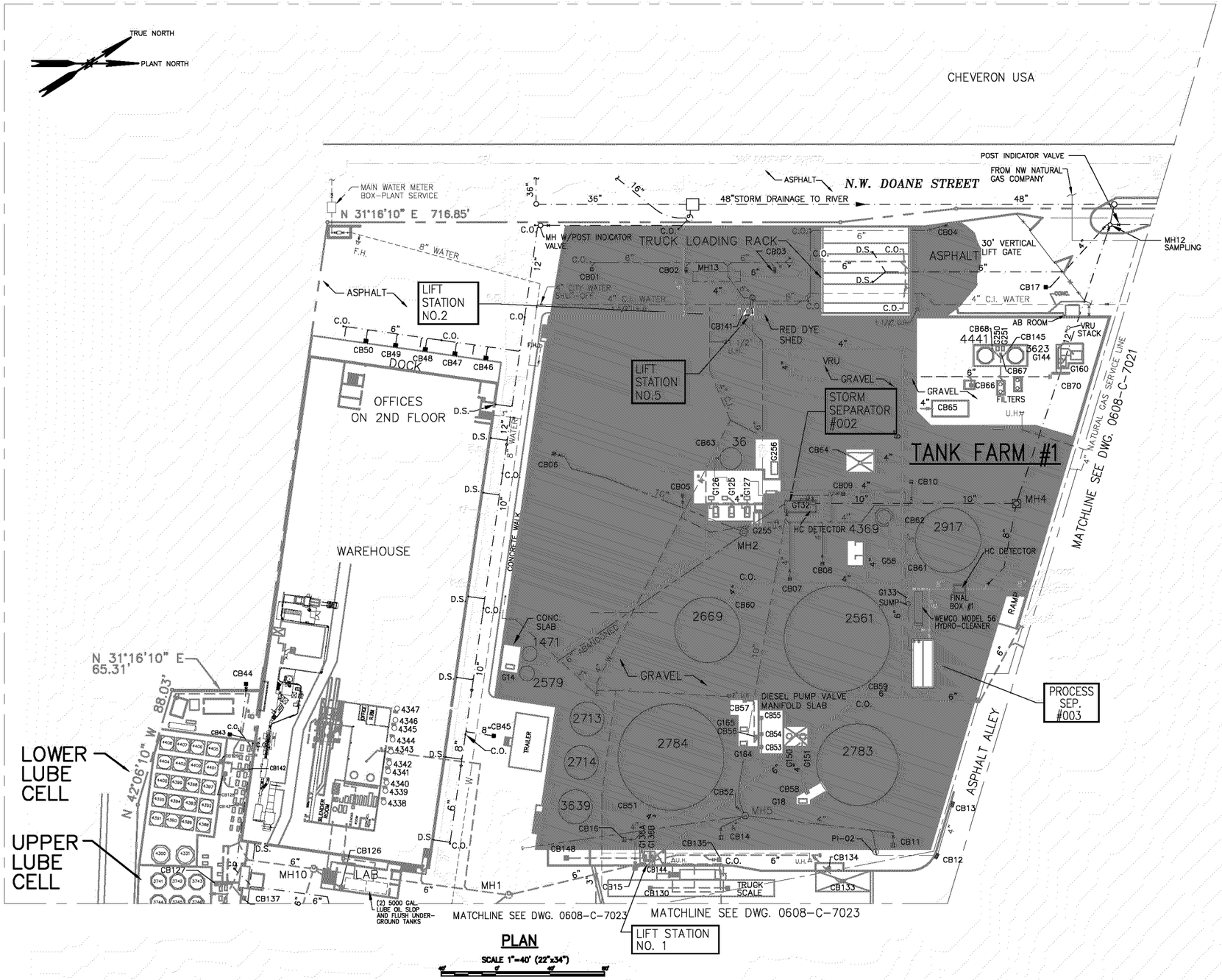
TITLE: TANK FARM 2
SITE DRAINAGE PLAN

DWG. No. 0608-C-7021-G

SHEET 1 OF 1

REV. No. G

COP0019883

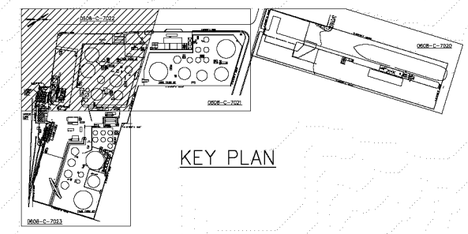


PLAN

SCALE 1"=40' (22"x34")

LEGEND

- STORM DRAINAGE TO SEPARATOR
- STORM DRAINAGE TO RIVER
- PROCESS DRAIN
- RECOVERED OIL TO STORAGE
- SANITARY SEWER
- CITY WATER
- NATURAL GAS
- UNTREATED DRAINAGE
- STORM WATER DIRECTED TO STORM WATER SEPERATOR #002
- PROCESS WATER DIRECTED TO PROCESS SEPARATOR #003



KEY PLAN

DRAWING NO.	REFERENCE DRAWING
0608-C-7021	TANK FARM NO.2 GENERAL ARRANGEMENT
0608-C-7023	TANK FARM NO.3 GENERAL ARRANGEMENT

NO.	REVISION DESCRIPTION	REV BY	CHK BY	APPR. BY	DATE
A	FOR REVIEW AND COMMENT	DAB	MK	WHB	03/06/97
B	GENERAL UPDATE	DAB	MK	WHB	03/26/97
C	REVISE STORM DRAINAGE LEGEND	DAB	MK	WHB	07/24/97
D	UPDATED FOR SWPCP	DAB	SM	WHB	02/12/98
E	UPDATE TO REFLECT CHANGES OM 0608-C-7000	DAB	SM	WHB	09/10/99
F	REMOVE FIGURE NO. AND REVISE LOGO	QKB	WHB	WHB	03/04/03
G	UPDATE TITEBLOCK	CEW	WHB	WHB	12/08/06

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ALPHA ENGINEERS and CONSTRUCTORS, INC.
2929 NW 29th AVE, PORTLAND, OR. 97210 Tel:(503)227-3317/Fax:(503)227-3244

AECI PROJECT NUMBER 25-86

DR. C.W.PORFILY	CONTRACTOR No.
DSGN. D.A.BYNUM	PROJECT NO. 25-31
CK. WHB AP.	DWG. SCALE AS SHOWN
DATE 03/16/97	PLOT SCALE

PORTLAND TERMINAL

TITLE: TANK FARM 1
SITE DRAINAGE PLAN

DWG. No. 0608-C-7022-G
SHEET 1 OF 1
REV. No. G

COP0019884