PACIFIC TITLE INSURANCE CO.
Oregon's Oldest Title Company

ACCESS EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that THE PORT OF PORTLAND, a municipal corporation of the State of Oregon, Grantor, in consideration of one and NO/100 Dollars ($1.00) and other good and valuable consideration, to it paid by ASH GROVE LIME AND PORTLAND CEMENT COMPANY, a Delaware Corporation, Grantee, does hereby grant to the said Grantee, its successors and assigns, the following access easements (including vehicular access) over and across the surface of the land bounded and described as follows, to wit:

Three parcels of land located in Section 26, Township 2 North, Range 1 West, Willamette Meridian, Multnomah County, Oregon, described as follows:

Parcel No. 1

Beginning at the Northeast corner of the T. A. Ketchum and F. C. Knapp parcel as recorded September 30, 1908, in Book 435, Page 125, Deed Records of Multnomah County, Oregon; thence due East 1526.45 feet; thence due North 40 feet to the true point of beginning; thence due North 25 feet; thence due East 48 feet, more or less, to the Westerly right-of-way line of the access road; thence due South 25 feet along said right-of-way; thence due West 48 feet, more or less, to the point of beginning.

Parcel No. 2

Beginning at the Northeast corner of the T. A. Ketchum and F. C. Knapp parcel as recorded September 30, 1908, in Book 435, Page 125, Deed Records of Multnomah County, Oregon; thence due East 1526.45 feet; thence due North 499.92 feet to the true point of beginning; thence due North 25 feet; thence due East 48 feet, more or less, to the Westerly right-of-way line of the access road; thence due South 25 feet along said right-of-way; thence due West 48 feet, more or less, to the point of beginning.

Parcel No. 3

Beginning at the Northeast corner of the T. A. Ketchum

LEGAL DESCRIPTION APPROVED

878435

and F. C. Knapp parcel as recorded September 30, 1908, in Book 435, Page 125, Deed Records of Multnomah County, Oregon; thence due East 1526.45 feet; thence due North 674.92 feet to the true point of beginning; thence due North 25 feet; thence due East 48 feet, more or less, to the Westerly right-of-way line of the access road; thence due South 25 feet along said right-of-way; thence due West 48 feet, more or less, to the point of beginning.

Said easements are shown on Exhibit Plat No. RG 63-1501, which by this reference is made a part hereof and incorporated herein.

It is the intention and agreement of the grantor to locate a road right-of-way, with a paved road located within said right-of-way, parallel to and approximately 48 feet easterly of the western boundary of the three above described access easements, which said roadway is referred to in the above described descriptions as the "access road," and which said roadway, together with said paved road thereon, shall either be dedicated to the public or shall be made freely and fully available for the use of said grantee, its successors and assigns, and shall connect to a dedicated public road, and it is the intention of the grantor by this instrument to grant to the grantee, its successors and assigns, the above described 25 foot wide access easements from the western boundary of said easements to said roadway.

The said access easements cross an area which the Grantee, its successors or assigns, may utilize for utilities or other uses including, but not limited to, water, sewer and power lines, railroad tracks and power poles, and the Grantee agrees that it, its successors or assigns, shall in no way unreasonably interfere with the use of said area by the Grantor, its successors or assigns. The Grantor, it successors and assigns, agrees

not to use said area so as to unreasonably interfere with the access easements herein granted.

IN WITNESS WHEREOF, THE PORT OF PORTLAND, pursuant to a resolution of its Board of Commissioners, duly and legally adopted, has caused these presents to be signed by its President and Assistant Secretary, and its corporate seal affixed this SECOND day of APRIL, 1963.

THE PORT OF PORTLAND

By Robert B. Wilson
President

By George M. Baldwin
Assistant Secretary

APPROVED AS TO FORM — BFB
Lyton L. Tatum
of Counsel for The Port of Portland

APPROVED
L. D. Thompson

APPROVED BY THE BOARD
ON _____ 19__

STATE OF OREGON)
) SS
County of MULTNOMAH)

On this SECOND day of APRIL, 1963, before me appeared ROBERT B. WILSON, and GEORGE M. BALDWIN, both to me personally known, who being duly sworn, did say that he, the said ROBERT B. WILSON, is the President and he, the said GEORGE M. BALDWIN, is the Assistant Secretary of the within named The Port of Portland, a municipal corporation, and that the seal to the within instrument is the corporate seal of said municipal corporation and that the said instrument was signed and sealed in behalf of said municipal corporation by authority of its Board of Commissioners, and the said ROBERT B. WILSON, and GEORGE M. BALDWIN, acknowledged said instrument to be the free act and deed of said municipal corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal, this the day and year first in this, my certificate written.

OFFICIAL L. TATUM NOTARY PUBLIC STATE OF OREGON

Lofton L. Tatum
Notary Public for Oregon
My Commission expires May 30, 1963

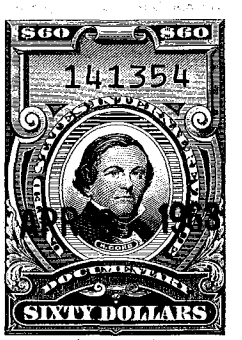
(SEAL) DOCUMENT 12804 RECORDED APR 3 1963 11:43 AM SI COHN, County Clerk

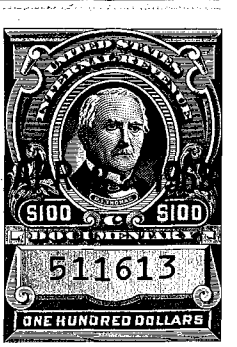
PACIFIC TITLE INSURANCE CO.
Oregon's Oldest Title Company

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that THE PORT OF PORTLAND, a municipal corporation of the State of Oregon, grantor, in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration to it paid by ASH GROVE LIME AND PORTLAND CEMENT COMPANY, a Delaware Corporation, grantee, does hereby grant, bargain, sell and convey unto said ASH GROVE LIME AND PORTLAND CEMENT COMPANY, its successors and assigns, all the following real property, with the tenements, hereditaments and appurtenances, situated in Sections 26 and 27, Township 2 North, Range 1 West, of the Willamette Meridian in the County of Multnomah, State of Oregon, bounded and described as follows:

Beginning at a point in Government lot 6, Section 27, Township 2 North, Range 1 West, Willamette Meridian, which point is the Northeast corner of that certain tract of land conveyed by S. I. Ogden and Ella Ogden, his wife, to T. A. Ketchum and F. C. Knapp, by deed recorded September 30, 1908 in book 435, page 125 deed records of Multnomah County, which point is marked by a 3 inch steel pipe and brass cap; thence continuing due East 322.59 feet to the line between sections 26 and 27, of said township, from which point the corner between sections 26, 27, 34 and 35 bears South 0° 06' 16" West 543.00 feet and the 1/4 corner between sections 26 and 27 bears North 0° 06' 16" East 2082.54 feet; continuing thence due East 1203.86 feet to a 3 inch steel pipe and brass cap from which point the South 1/4 corner of Section 26 bears South 69° 25' 18" East 1559.62 feet and the center of section 26 bears North 35° 08' 23" East 2545.24 feet; continuing thence due North 707.92 feet to a 3 inch steel pipe and brass cap; thence due West 1202.05 feet to the line between sections 26 and 27 from which point the West 1/4 corner of section 26 bears North 0° 06' 16" East 1374.54 feet; thence continuing due West 478.07 feet to a 3 inch steel pipe and brass cap; thence due West 190 feet more or less to the ordinary low water line of the Willamette River; thence Southerly along the low water line 710 feet more or less to a point due West of the point of beginning; thence due East 124 feet more or less to a 3 inch steel pipe and brass cap; thence continuing due East 165.72 feet to the point of beginning.





TO HAVE AND TO HOLD, the above-described and granted premises unto ASH GROVE LIME AND PORTLAND CEMENT COMPANY, a Delaware Corporation, its successors and assigns, forever, subject to the following covenants and restrictions which shall apply to and run with said real property herein conveyed:

1. The grantor has established the following covenants and restrictions in order to insure proper use and appropriate development and improvement in an orderly and harmonious manner, and to provide a general plan or scheme of development for the River Gate Industrial District, which term is understood to mean all that real property now owned or controlled by The Port of Portland, situated in what is commonly known as the River Gate Area, County of Multnomah, State of Oregon. Grantor does not represent that the covenants and restrictions will be applied to any other property in the industrial district; provided, however, that if any property, owned by grantor at the time of the execution of this deed, in said district, is ever sold without covenants and restrictions at least as restrictive in every respect as those applicable to the real property herein conveyed or is ever released from such restrictions to any degree (whether by agreement, waiver or operation of law) then the grantee and the real property herein conveyed shall thereafter be no longer bound by the covenants and restrictions contained herein, except to the same extent as such covenants and restrictions continue to apply to said other property.

2. The covenants and restrictions herein shall remain in force for a period of fifty (50) years from the date hereof and may be enforced by the grantor, its successors or assigns, either by action at law or suit in equity; provided, however, it is understood, declared and agreed that no provision in this Deed is intended to be, or shall operate as, a condition and that no breach or violation of any covenant, restriction or provision contained herein shall give the grantor any right of reversion, re-entry or forfeiture. The grantor reserves the right to waive any of these covenants and restrictions. Except as provided in paragraph 1 above, the grantor shall not be responsible or liable to the grantee or any third parties for enforcement of or for failure to enforce these covenants and restrictions, and invalidation of any one of these covenants and restrictions, or any part thereof, by judgment or decree of any court shall in no way affect any of the other provisions, which shall remain in full force and effect.

3. Subject to the provisions of paragraph 1 and 2 above, the grantee covenants and agrees to include all the covenants and restrictions contained in this contract in any sale, lease, or other arrangement which changes ownership, control or use of all or part of the said real property subsequent to its purchase by the grantee herein, including the requirements that any subsequent owners, controllers or users so restrict their successors in interest.

4. Subject to the provisions of paragraph 1 and 2 above, it is covenanted and agreed between the grantee and grantor that all of the covenants, restrictions and agreements hereinafter expressed shall be held to run with and bind the land hereby conveyed, and all subsequent owners and occupants thereof.

5. No trade, business or activity shall be conducted on said real property which produces unreasonable noise, vibrations, heat or glare which is discernible at the property line. Noise resulting from intermittent and occasional use of mobile diesel powered machines and noise occasioned by periodic unloading of barges or other vessels shall not be deemed unreasonable noise within the meaning of this paragraph.

6. All materials, including wastes, shall be stored and all grounds maintained in a manner which will not attract or aid the propagation of insects or rodents or create a health hazard.

7. The said real property shall not be used for any race tracks of any kind, residential purposes, amusement parks, mining or quarrying operations or any other activity or business which may be a nuisance to the Industrial District.

8. Any and all buildings, structures or improvements, or any part or projection thereof (hereinafter collectively called "buildings") at any time constructed

or maintained, and extended above the ground surface, shall conform with the following:

(a) No buildings extending above the surface of the ground shall be located closer than 100 feet to the property line which is adjacent to any public street located along the eastern boundary of said real property nor closer than 25 feet to all other property lines except the property line along the western side of said property (i.e., the river side of said property).

(b) Two-thirds of the setback from the street of the area located directly in front (i.e., to the east) of the office building of the grantee to be located on the easterly side of the above described property shall be devoted to some type of landscaping with at least 25 feet of the required landscaped portion of the setback placed adjacent to said property line, exclusive of drives, walks and railroad rights-of-way. Some type of landscaping shall be placed by grantee along the remainder of the eastern boundary of said property, exclusive of drives, walks or railroad rights-of-way. Grantee shall plant and maintain all planting and landscaping within the property boundaries. All such landscaping shall be selected and determined by the grantee in its sole discretion and may consist of trees, shrubs (of any size or height), lawn or other low organic or inorganic ground covers. Open and unused areas of the real property shall be continuously maintained in a dust-free condition by landscaping or by paving with asphalt, concrete, rock, oil, weed, grass or other organic surfacing, or by some other means.

9. The maximum area that may be covered by all principal and accessory buildings shall not exceed 35% of the area of the real property.

10. Grantee shall provide off-street parking for automobiles at the minimum rate of one parking space for each three employees on the combined major

and next largest shifts or two spaces for every three employees on the major shift. All parking areas shall be paved with a dust-free, all-weather surface and be well drained.

11. All loading and unloading of trucks, railroad cars or other vehicles shall be made upon the above described premises, with no on-street loading or unloading permitted. No loading of trucks, railroad cars or other vehicles shall be permitted on the street side of any building which is located closer than 300 feet from the property line adjacent to any public street along the eastern boundary of said real property. All maneuvering of vehicles shall be made upon the above described premises, and not in any public road, avenue or street. All rail and truck loading aprons and other loading areas shall be paved with a dust-free, all-weather surface and be well drained.

12. Uncovered and unscreened storage of bulk commodities, products or raw materials shall not be permitted closer than 300 feet from a property line which abuts any public street located along the eastern boundary of said real property nor closer than 100 feet from the eastern 300 feet of the northern and southern property lines nor closer than fifteen (15) feet from the rest (i.e., west of the eastern 300 feet) of the northern and southern property lines; provided, however, that, if such storage be reasonably screened from view from said public street by use of landscaping, or opaque fencing, approximately 8 feet in height, said uncovered, screened bulk storage shall be permitted within an area up to 200 feet from said public street, and up to 50 feet from the northern and southern property lines from a point 200 feet from the eastern boundary of the property to a point 300 feet from said eastern boundary.

13. Bulk storage of flammable liquids, liquified petroleum gases and explosives, when located above the ground, shall be in tanks located no closer than 200 feet from any property line. A surfaced roadway shall be maintained by the grantee, from the public street to this storage area in order to provide ready access

for fire trucks and fire fighting equipment.

14. Storage for any substantial period of time of:

(a) junk

(b) scrap metals or

(c) waste products of any kind

having no commercial value shall be allowed no closer than 300 feet from the property line facing any public street located along the eastern boundary of said real property nor closer than 150 feet from any other property line. No such storage shall be allowed in any event unless the area is enclosed by either:

(a) a tight fence not less than 6 feet in height surrounded by landscaping not less than 8 feet in height or

(b) a tight opaque fence not less than 8 feet in height, in order to provide reasonable screening of such storage from outside view.

15. No billboards or advertising signs shall be permitted except those identifying the name, business and products of the persons or firms occupying the premises.

16. All buildings within said real property shall be of a permanent type construction with a fire resistant roof, and shall be maintained in good condition and repair. Exterior walls of all buildings shall be of concrete, masonry, stucco, glass, terrazo, architectural metal or wood siding; provided, however, any such exterior wall more than 300 feet from the eastern boundary of said property may also be of asbestos-cement, corrugated iron siding or galvanized roofing.

17. Grantee initially will construct on the land a facility to be used for the manufacture and handling of commercial lime and lime products.

18. In the event grantee does not commence construction of the proposed facility within two (2) years after the date of this agreement, grantee hereby agrees that grantor shall have an irrevocable option to repurchase the said property hereinabove

described at the same price herein paid by grantee to grantor, upon tender of written notice of intention to repurchase by the grantor, not more than 30 days subsequent to the expiration of the two (2) year period.

THE PORT OF PORTLAND, the grantor above named, does covenant to and with the above named grantee, its successors and assigns, that it is lawfully seized in fee simple of the above granted premises, that the above granted premises are free from all encumbrances, except the covenants and restrictions set forth herein, and that THE PORT OF PORTLAND, will and its successors and assigns shall warrant and forever defend the above granted premises and every part and parcel thereof against the lawful claims and demands of all persons whomsoever.

IN WITNESS WHEREOF, The Port of Portland, pursuant to a resolution of its Board of Commissioners, duly and legally adopted, has caused these presents to be signed by its President and Assistant Secretary and its corporate seal to be affixed, this second day of April, 1963.

THE PORT OF PORTLAND

BY Robert B. Wilson
President

BY George M. Baldwin
Assistant Secretary

APPROVED AS TO FORM - BFB
Lyton L. Tatum
of Counsel for The Port of Portland

APPROVED
B. Thompson
Properties Dept.

APPROVED BY COMMISSION
ON AUGUST 13 1963

STATE OF OREGON)
) SS
County of MULTNOMAH)

On this SECOND day of April, 1963, before me appeared ROBERT B. WILSON, and GEORGE M. BALDWIN, both to me personally known, who being duly sworn, did say that he, the said ROBERT B. WILSON, is the President and he, the said GEORGE M. BALDWIN, is the Assistant Secretary of the within named The Port of Portland, a municipal corporation, and that the seal to the within instrument is the corporate seal of said municipal corporation and that the said instrument was signed and sealed in behalf of said municipal corporation by authority of its Board of Commissioners, and the said ROBERT B. WILSON, and GEORGE M. BALDWIN, acknowledged said instrument to be the free act and deed of said municipal corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal, this the day and year first in this, my certificate written.

LOFTON L. TATUM NOTARY PUBLIC STATE OF OREGON

Lofton L. Tatum
Notary Public for Oregon
My Commission expires May 30 1963

(SEAL) DOCUMENT 12803 RECORDED APR 3 1963 11:43 AM SI COHN, County Clerk

OREGON STEEL MILLS

P.O. Box 2760
Portland, Oregon 97208
Phone (503) 286-9651

February 5, 1991

VIA FEDERAL EXPRESS

Bill Cotrel
Unocal Real Estate Division
1201 W. 5th Street
P.O. Box 7600
Los Angeles, CA 90051

Dear Mr. Cotrel:

Unocal has agreed to convey two easements to Oregon Steel Mills, Inc. and Ash Grove Cement West, Inc. (OSM/AG) as described in this letter. The first easement runs along the bank of the Willamette River at the North end of Unocal's property located in the Rivergate Industrial Park in Portland, Oregon (Easement A). The legal description for Easement A is attached as Exhibit A to this letter. The second easement (Easement B) runs along the West end of Unocal's property just inland from the Willamette River from Oregon Steel Mill's property on the North to the Port of Portland's right of way known as Ramsey Boulevard on the South. The legal description for Easement B appears as Exhibit B to this letter.

This easement is granted in consideration of the mutual cooperation the companies have extended to each other in granting easements in the past and constitutes full and adequate consideration.

Unocal has agreed to grant OSM/AG access to its property to permit the construction of the natural gas pipeline that will use the easements, pending the final execution of the easement documents. OSM/AG will begin drilling the under river portion of its project on or about February 15, 1991 and will require access to Unocal's property on or about February 22, 1991.

FAX DATE 2-11 TIME 9:15 Am
Jim Post

We very much appreciate Unocal's cooperation and your patience and efforts to expedite this matter. If you agree that this letter accurately reflects our agreement, please execute one copy and return one signed copy for our files, retaining one signed copy for your files.

Sincerely,

V. Neil Fulton
Vice President, Finance

WE CONCUR:

UNOCAL CHEMICAL

By: _____

Date: _____

cc: Mr. Lucht
Mr. Hall
Unocal Chemical Division
2601 E. Imperial Highway
Brea, CA 92621

Mr. John Yanak
Unocal
Portland, OR

OREGON STEEL MILLS / ASH GROVE CEMENT WEST, INC.
NATURAL GAS PIPELINE

OSM/AG TRANSMISSION LINE EASEMENT WITH UNOCAL

Said easement being 100 feet in width, lying 50 feet on each side of the following described center line:

Beginning at the southwesterly corner of Section 26, Township 2 North, Range 1 West, of the Willamette Meridian in the County of Multnomah, State of Oregon,

thence east 1205.42 feet to the east line of Ash Grove Cement West, Inc., extended as recorded in Book 2161, page 237 of the Multnomah County Deed Records;

thence north 1675.09 feet to the southern line of Oregon Steel Mills, a division of Gilmore Steel Corporation, as recorded in Book 586, page 1355 of the Multnomah County Book of Records;

thence along a 75 degrees 45'- 20" curve to the left having a radius of 358.10 feet a distance of 473.47 feet;

thence north 75 degrees 45'- 20" west a distance of 1359.35 feet;

thence north 8 degrees 23'- 12" east a distance of 220.00 feet to the True Point of Beginning;

thence north 88 degrees 20'- 00" west a distance of 201.38 feet more or less to the Harbor Line of the Willamette River.

Easement A

OREGON STEEL MILLS / ASH GROVE CEMENT WEST, INC.
NATURAL GAS PIPELINE

ASH GROVE DISTRIBUTION LINE
EASEMENT WITH UNOCAL CHEMICAL DIVISION

Said easement being 20 feet in width, lying 10 feet on each side of the following described center line:

Beginning at the southwesterly corner of Section 26, Township 2 North, Range 1 West, of the Willamette Meridian in the County of Multnomah, State of Oregon,

thence north 1343.64 feet, thence west 430.28 feet to a point 943.50 feet west of the southeast corner of a parcel belonging to Unocal Chemical Division as recorded in Book 615, page 1400 of the Multnomah County Book of Records, and the True POINT OF BEGINNING;

thence north 6 degrees 0'- 23" east a distance of 430.30 feet;

thence north 0 degrees 53'-03" west a distance of 244.62 feet;

thence north 18 degrees 18'-09" east a distance of 332.56 feet to a point on the north line of the Unocal parcel being north 75 degrees 45'-20"west a distance of 745.74 feet from the northeast corner of said parcel.

Easement B

PERMIT AND RIGHT-OF-ENTRY

BETWEEN

THE PORT OF PORTLAND

AND

ASH GROVE CEMENT COMPANY

3225L

I N D E X

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PERMIT AND RIGHT-OF-ENTRY

THIS AGREEMENT, made and entered into on the 4th day of October, 1985, by and between THE PORT OF PORTLAND, a municipal corporation of the state of Oregon, hereinafter referred to as the "Port," and ASH GROVE CEMENT COMPANY, hereinafter referred to as the "Permittee,"

W I T N E S S E T H:

WHEREAS, the Port is the owner of certain land which is fully described in Exhibit A, attached hereto and incorporated herein by reference (hereinafter referred to as "Premises"); and

WHEREAS, Permittee desires to enter on the Premises for certain purposes which are described in Exhibit A;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other valuable consideration, the Port does hereby permit entry upon the following terms and conditions:

ARTICLE I - PREMISES

Permittee may use the Premises solely for the business or purposes set forth in Exhibit A.

ARTICLE II - TERM

The term of this Permit and Right-of-Entry shall begin on July 1, 1985, and shall terminate upon ninety (90) days written notice by the Port.

ARTICLE III - PERMITTEE'S OBLIGATIONS

Section 3.01 - Maintenance: Permittee shall insure that the Premises are not damaged or altered in any manner, and shall make all necessary repairs or take any steps necessary to restore the Premises to its original condition. Permittee shall provide proper containers for its trash or garbage and shall keep the Premises free and clear of rubbish, debris, and litter at all times.

Section 3.02 - Liens: Permittee agrees to pay, when due, all sums of money that may become due for, or purporting to be for, any labor, services, materials, supplies, utilities, furnishings, machinery or equipment which have been furnished or ordered with Permittee's consent to be furnished to or for the Permittee in, upon or about the Premises, which may be secured by any mechanics', materialmen's or other lien against the Premises or Port's interest therein, and will cause each such lien to be fully discharged and released at the time the performance of any obligation secured by any such lien matures or becomes due provided that the Permittee may in good faith contest any mechanics' or other liens filed or established, and in such event may permit the items so contested to remain undischarged and unsatisfied during the period of such contest.

Section 3.03 - Port's Right To Terminate: Notwithstanding any provision contained herein, the Port or its authorized representative may verbally terminate this Permit and Right-of-Entry upon ninety (90) days written notice.

ARTICLE IV - INDEMNITY AND INSURANCE

Section 4.01 - Indemnity: Permittee is an independent contractor and agrees to fully indemnify, save harmless and defend the Port, its commissioners, officers, and employees from and against all claims and actions and all expenses incidental to the investigation and defense thereof, based upon or arising out of damages or injuries to third persons or their property, caused by the fault or negligence in whole or in part of the Permittee, its agents, contractors, or employees in the use or occupancy of the Premises; provided that the Port shall give to the Permittee prompt and reasonable notice of any such claims or actions, and the Permittee shall have the right to investigate, compromise, and defend same, provided such claim is not the result of negligent act of the Port.

Section 4.02 - Insurance:

A. Permittee shall maintain comprehensive general and automobile liability insurance for the protection of Permittee, its directors, officers, servants, and employees, insuring Permittee against liability for damages because of personal injury, bodily injury, death, or damage to property, including loss of use thereof, and occurring on or in any way related to this Permit and Right-of-Entry caused by Permittee's use of the Premises with

insurance of not less than One Million and No/100 Dollars ($1,000,000.00) combined single limit per occurrence for bodily injury and property damage. Such insurance shall name the Port against named insureds with the stipulation that this insurance, as to the interest of the Port only therein, shall not be invalidated by any act or neglect or breach of contract by the Permittee. The coverage provided by this policy shall be primary and any other insurance carried by Port is excess.

B. Permittee shall furnish to the Port a certificate as attached evidencing the date, amount and type of insurance that has been procured pursuant to this Permit and Right-of-Entry. All policies of insurance will provide for written notice to the Port and the Permittee before such policies may be revised, nonrenewed, or cancelled.

ARTICLE V - DEFAULT

Failure of Permittee to comply with any term or condition or fulfill any obligation of this Permit and Right-of-Entry may result in immediate cancellation of this Permit and Right-of-Entry.

ARTICLE VI - GENERAL PROVISIONS

Section 6.01 - Assignment of Interest or Rights: Neither Permittee nor any assignee or other successor of Permittee shall in any manner, directly or indirectly, by operation of law or otherwise, sublease, assign, transfer or encumber any of Permittee's rights in and to this Agreement or any interest therein, nor license or permit

the use of the rights herein granted in whole or in part without the prior written consent of the Port. Any attempted assignment shall be void.

Permittee shall not assign all or any part of its rights and interests under this Agreement to any successor to its business through merger, consolidation, or voluntary sale or transfer of substantially all of its assets, without prior written approval of the Port, which will not be unreasonably withheld.

Section 6.02 - Attorney Fees: If suit or action is instituted in connection with any controversy arising out of this Agreement, the prevailing party shall be entitled to recover in addition to costs such sum as the court may adjudge reasonable as attorney fees, or in the event of appeal as allowed by the appellate court.

Section 6.03 - Warranties/Guarantees: Port makes no warranty, guarantee, or averment of any nature whatsoever concerning its title to or the physical condition of the Premises, and it is agreed that Port will not be responsible for and Permittee shall hold Port harmless from any loss, damage or costs which may be incurred by Permittee by reason of any such physical condition or defect in Port's title.

Section 6.04 - Consent of Port: Whenever consent, approval or direction by the Port is required under the terms contained herein, all such consent, approval or direction shall be received in writing from the Executive Director of The Port of Portland.

Section 6.05 - Compliance with Law: Permittee shall comply with all applicable state and federal laws including but not limited to laws, rules, regulations and policies concerning equal opportunity, nondiscrimination, Workers' Compensation, and minimum and prevailing wage requirements.

Section 6.06 - Notices: All notices required under this Agreement shall be deemed to be properly served if sent by certified mail to the last address previously furnished by the parties hereto. Until hereafter changed by the parties by notice in writing, notices shall be sent to the Port at The Port of Portland, Post Office Box 3529, Portland, Oregon 97208, and to Permittee at P.O. Box 03007, St. Johns Station, Portland, OR 97203.

IN WITNESS WHEREOF, the parties hereto have subscribed their names.

ASH GROVE CEMENT COMPANY

By _____
Senior Vice President

By _____
Secretary

THE PORT OF PORTLAND

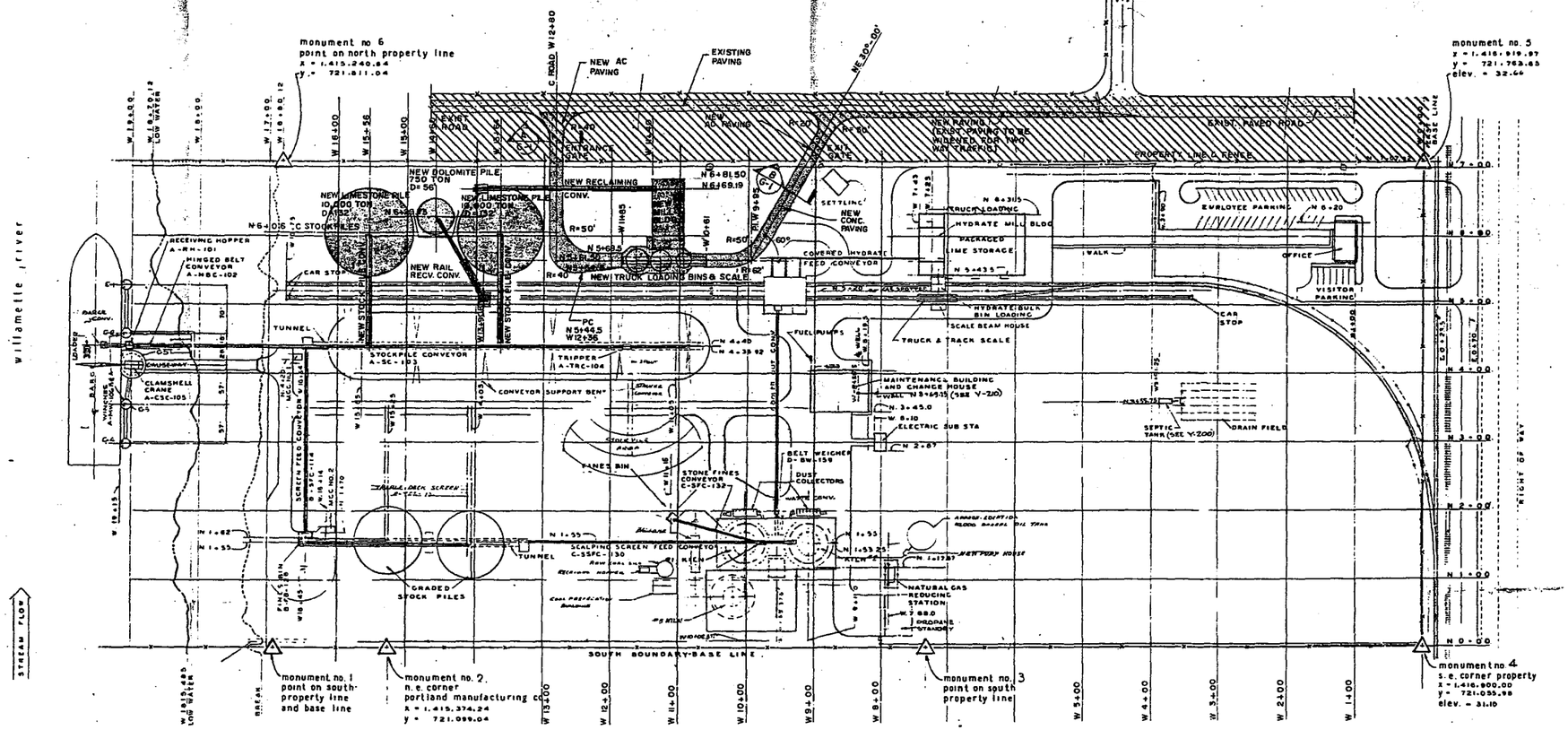
By _____
Executive Director

By _____
Assistant Secretary

APPROVED AS TO LEGAL SUFFICIENCY:

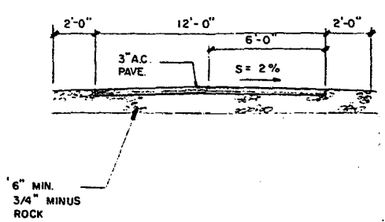
_____
Counsel for
The Port of Portland

08/02/85
12H051:3225L

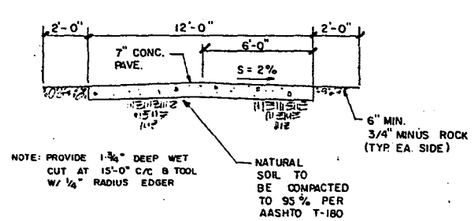


PORT OF PORTLAND

SITE PLAN
SCALE: 1"=100'



A / G-1 SECTION
NTS



B / G-1 SECTION
NTS

APR 26 1985

REVISIONS
DRAWN CHECKED DATE

PROJECT TITLE:
ASH GROVE CEMENT WEST INC AG-LIME INSTALLATION

STORCH CORPORATION
ENGINEERS PORTLAND, OREGON

DRAWING TITLE:
SITE PLAN

NORTHWEST GEOLOGICAL SERVICES, INC.
Consulting Geologists and Hydrogeologists
2505 N.E. 42nd Avenue, Portland OR 97213-1201
503-249-1093

15 June 1990

Ash Grove Cement West, Inc.
6720 S.W. Macadam Avenue, Suite 300
Portland, Oregon 97219-2312

Attention: Mr. James W. Post
Vice President - Technical

Albina River-front Site
Portland, Oregon

Dear Mr. Post:

The purpose of this report is to outline our concerns with regard to the referenced site (Figure 1). These concerns are the result of our Phase I study to date. They were briefly discussed with you by telephone on 13 June 1990.

Based on our review of aerial photographs, historical photographs and maps, and agency files, as well as a reconnaissance of the site, several conditions of concern have been identified. These are dump debris, irregular topography and uncontrolled fills, spills on adjacent property, hydrocarbon contamination on the site, previous facility foundations, and creosoted pilings.

Dump Debris

Since at least 1986, several thousand cubic yards of dump debris have been placed on the site. Most of the debris has been placed in excavated portions of the site (sand and gravel pits) but some has been placed at the general site grade as well. A site reconnaissance on 12 June 1990 revealed the debris to consist of household garbage, lawn and shrub cuttings, tires, furniture, carpets, soil, excess asphaltic concrete mix, foundry sand, crushed stone, rocks, and construction rubble (asphaltic concrete, concrete, and brick). Only a small portion of the dump debris is household garbage and related domestic waste. The majority of the waste in order of observed abundance is soil, concrete rubble, asphaltic concrete, stone, sand and gravel, and foundry sand.

It is not the intent of NGS, Inc. to provide an engineering assessment of the property. We believe, however, that such an assessment would find that this material is unsuitable for foundations or fill and would recommend removal of most, if not all, of the dump debris from the site. Depending on the planned construction layout and proposed future use, some of the

debris may be left in some areas.

Based on visual observations, it appears that only a very small fraction of the dump debris has a significant potential for site contamination. This estimate, however, could change considerably with additional data. The removal of the debris by the owner would at least reduce the need for sampling and testing of various materials for contamination (soil, foundry sand, sand and gravel).

Irregular Topography and Uncontrolled Fills

As indicated above, the site topography is irregular. The portion of the site that is immediately adjacent to the railroad tracks of the Union Pacific yard is a fairly flat roadway at the general grade of the switching yard area. With the exception of this roadway, the northerly (downstream) 1500 feet of the property is occupied by several large sand and gravel pits. These are excavated to estimated depths of between 8 and 12 feet. Exposures in the walls of these excavations reveal the soil material to be fine to coarse silty sand with an abundance of fine to medium rounded gravel. There are no indications of bedding; however, the granular materials have a definite alignment suggesting segregation on inclined surfaces (stock piles). The deposits are not dredge fill. They were very likely brought to the site by the former sand and gravel facility barges.

These large excavations will require many thousands of cubic yards of material and a very substantial effort to fill to grade and compact to engineering specifications for structural backfill.

Spills On Adjacent Property

The Albina yard was originally owned by the Oregon Rail and Navigation Company, circa 1880. On 11 April 1887, O R & N leased the Albany yards to the Union Pacific Railroad Company, (MacColl and Stein, 1988). The property has continuously served as a railroad switching yard for some 110 years. Figure 1 illustrates the numerous tracks and operations at the facility, which include offices, trucking terminal, warehouses, shops, store, oil-water separator, fueling facility with a 150,000 gal. above ground fuel tank, and store. Aerial photographs indicate that other large tanks have been located at the yard in the past.

An underground tank registration form on file with the DEQ indicates that Union Pacific had 5 UST's at the Albina facility with a total storage capacity of 29,000 gallons. Originally, four tank contained gasoline and one was used for diesel storage. All of the tanks were constructed of steel. In 1986, two of the tanks were decomissioned. DEQ reports that all of the tanks have now been decomissioned. The ages of the tanks

in 1986 were reported to be 20 years, 16 to 20 years, or unknown.

A search of the DEQ files indicated that several spills and permit violations have been recorded since 1972. No files are available prior to 1972. Documented spills and violations include:

* 10 Feb. 1972 - Oil-water separator overload from tank car washing operations with possible discharge to the Willamette River,

* 21 Jan. 1973 - Oil spill as a result of open valve on diesel storage tank; at least 21,000 gal. released (total spill not given),

* 19 Apr. 1979 - DEQ observation of engine refueling without the use of drip pans; DEQ comment that oil seeps to the river,

* 19 June 1979 - DEQ inspection revealed various locations in the Albina yard with evidence of oil entering the ground as a result of fueling diesel engines,

* 16 Jan. 1980 - Diesel Spill, 44,000 gallons lost from locomotive fuel pump station; estimated 2,000 gal. went into the river; the oil saturated a large area of the yard,

* 12 Dec. 1980 - Notice of permit violation; excess BOD-5 contamination,

* 20 June 1983 - Organo Phosporus Pesticide Spill; no quantities given,

* 10 Aug. 1983 - Notice of permit violation; excess BOD-5 and oil & grease contamination, and

* 20 Mar. 1984 - Notice of permit violation; excess BOD-5 contamination.

It seems very likely that spills similar to those listed above may have occurred from time to time prior to 1972. It is likely that switchyard operations in the very early years were less environmentally conscious than at the present time.

Much of the soil materials under the Albina yard are fills that are likely to be quite permeable. Available data suggest that the yard is upgradient of the subject site, consequently we expect relatively rapid vertical and horizontal migration of potential contaminants from the yard to the ground water and eventually beneath the site and to the Willamette River. The assessment of ground water contamination will be

required in a Phase II study.

Hydrocarbon Contamination

Numerous areas of hydrocarbon spotting were noted during the site reconnaissance on 12 June 1990. In most cases, the hydrocarbon appeared to be the result of vehicle oil changes where the oil was allowed to flow on the ground. One relatively large area (50′ X 50′) was noted where the surficial soils appeared to be saturated with hydrocarbons. In addition one 5 to 10 cu ft pile of dump debris (sand and crushed stone) appeared to be contaminated with hydrocarbons. These observations, along with the spill record on the adjacent property combine to suggest a high probability that the underlying soils and ground water of at least portions of the site are contaminated with hydrocarbons. The oil change spots are probably not highly significant but the large surface contaminated area may be indicative of more severe subsurface contamination. An assessment of this concern will require a Phase II site study.

Previous Facility Foundations

A 1936 aerial photograph shows most of the site being used for sand and gravel operations. The material was received by barge, unloaded, and stored on-site for local distribution and use. Based on the size of the operation, it probably included unloading facilities, aggregate sorting, washing, crushing, and concrete batching, some of which required substantial foundations. The sand and gravel operations continued through at least 1986.

A site reconnaissance on 12 June 1990 revealed the former sand and gravel facility to be removed. Only foundations and remnants of a concrete waterfront structure remain. In at least one location, the foundation exposed near the top of the river bank was undermined by erosion and a small cave had formed under the concrete. Based on this observation, it is possible that much of the foundation material may have to be removed. The potential for future use or removal costs of the foundations should be assessed by a qualified soils/foundation engineer.

Creosoted Pilings

In 1890, the site was occupied by two large structures that were owned by Pacific Coast Elevator Company (grain warehouse) and Oregon Railway and Navigation Company (warehouse), (1890 Sanborn Map, Oregon Historical Society). The buildings were gone by 1936 but remains of piling supports are still evident on 1936 and 1940 aerial photographs of the area. These and subsequent aerial photographs of the area show site fill

(sand and gravel) being placed over the pilings. The aerial distribution (size) of the old warehouses is estimated to be approximately 220,000 sq ft. Assuming one piling for every 25 sq ft, there was an estimated 8,800 pilings remaining in the site. These are assumed to be cut off a few feet above ground or river level.

While pilings are in use, they are a structural material. When the structures are abandoned and the piles buried, they become a waste. Creosote treated pilings at the density that are estimated to underlie all of the site may have a potential for contamination. Creosote and related chemical indicators should be included in the list of test parameters during a Phase II assessment.

Recommendations

A Phase II study is recommended to assess the types and levels of contaminants that are suspected at the site. Both soil and ground water should be sampled and tested. Test parameters based on our knowledge of the area to date should include fuel and petroleum hydrocarbons, creosote, solvents, PCBs, and pesticides.

We recommend an engineering assessment of the site by a qualified soils/foundation engineer in conjunction with the above recommended Phase II study. Specific engineering items should include:

* the suitability of the on-site dump debris for use as fill and the cost for removal, if required,

* the degree of compaction for the existing sand and gravel fill soils of the site and their suitability for foundation support,

* the estimated quantities of site fill required to bring the site to the grade of adjacent properties, the recommended source of the material, and the cost of placement and compaction; and

* the suitability for future construction of the existing foundation and river front structures that remain on-site from the previous sand and gravel facility and the cost of their removal, if required.

It is recommended that the site be surveyed to provide a basis from which to estimate fill and dump debris quantities and to provide a detailed topographic map of the site.

We thank you for the opportunity to be of assistance. Please contact us if we can be of further service, or if you have any questions.

Very Truly yours,
Northwest Geological Services, Inc.

James E. Pyne
Vice President

Clive F. Kienle Jr.
Vice President

Molly L. Hamill
President

REFERENCES

Maps and Surveys

U.S.G.S. Portland, Quadrangle, Oregon-Washington, 7.5 minute (Topographic), 1961, photo revised 1970 and 1977

Sanborn Fire Insurance Maps, 1890, Oregon Historical Society, Portland, Oregon

Aerial Photographs

U.S. Army Corps of Engineers, Portland Oregon
- Photo 36-5935, Scale 1:15,000, 1936
- Photo 40-2127, Scale 1:10,900, 1940
- Photo 48-33, Scale 1:15,000, 1 June 1948
- Photo 57-3258, Scale 1:8,500, 4 May 1957
- Photo 61-3757, Scale 1:20,400, 6 Nov. 1961
- Photo 66-212, Scale 1:23,000, 22 Feb. 1966
- Photo 70-1062, Scale 1:25,000, 9 Aug. 1970
- Photo 73-2149, Scale 1:24,000, 14 Aug. 1973
- Photo 74-258, Scale 1:24,000, 21 March 1974
- Photo 77-2486, Scale 1:24,000, 27 Dec. 1977
- Photo 79-1646, Scale 1:30,000, 11 Sept. 1979
- Photo 80-291, Scale 1:12,000, 9 Jan. 1980
- Photo 83-966, Scale 1:24,000, 15 Sept. 1983
- Photo 86-287, Scale 1:48,000, 16 March 1986

City of Portland
- Photomaps 2527, 2727, & 2729, scale 1"=400', 14 Sept. 1982

Files Searched

Oregon Department of Environmental Quality
- Inventory of Underground Storage Tanks, Portland, OR.
- Business Files, Portland, OR.
- RCRA Files, Portland, OR.
- CERCLIS Files, Portland OR.

Reports and Publications

Foxworthy, B.L., and Hogenson, G.M., 1965, Ground Water in the East Portland Area, Oregon, U.S. Geological Survey Water-Supply Paper 1793.

SAFE Research, Inc., 11 June 1990, Search of Well Logs and Regulatory Agency Lists For Selected Addresses: job 069005 for

Northwest Geological Services, Inc.

MacColl, E.K., and Stein, H.H., 1988, The Portland Establishment 1843 - 1913, The Georgian Press

H. Stein, K. Ryan, and M. Beach, 1980, Portland, A pictorial History, Donning

NORTHWEST GEOLOGICAL SERVICES, INC.
Consulting Geologists and Hydrogeologists
2505 N.E. 42nd Avenue, Portland OR 97213-1201
503-249-1093

TRANSMITTAL

TO Ash Grove Cement West, Inc.
6720 S.W. Macadam Ave
Portland, Oregon 97219-2312

DATE 15 June 1990

CLIENT JOB NO.

NGS, INC. JOB NO. 149.1-1

ATTENTION Mr. James W. Post

PROJECT Albina River-front Site

SENT BY

SUBJECT Letter Report

ITEM	# COPIES	DATE	DESCRIPTION
Report	2	15 June '90	Albina River-front Site Portland, Oregon

THESE ARE FOR: ___ YOUR INFORMATION ___ AS PER YOUR REQUEST
___ YOUR APPROVAL ___ YOUR REVIEW ✓ YOUR FILES

REMARKS We will be happy to provide additional copies, if required.

BY James E. Pyne, Northwest Geological Services, Inc.

Book 2631 PAGE 1373 Original

572585

326-45

SPECIAL WARRANTY DEED

UNION PACIFIC RAILROAD COMPANY, a Utah corporation (which through merger with the Oregon-Washington Railroad & Navigation Company, became successor in interest to the real property described herein), Grantor, conveys and specially warrants to ASH GROVE CEMENT COMPANY, a Delaware corporation, Grantee, the real property described in Exhibit A attached hereto and hereby made a part hereof, free from encumbrances created or suffered by Grantor except those set forth on Exhibit B attached hereto and hereby made a part hereof.

This deed is made SUBJECT to the following:

(a) That certain Mineral Deed dated as of April 1, 1971, from Union Pacific Railroad Company to Union Pacific Land Resources Corporation wherein Union Pacific Railroad Company conveyed all its right, title and interest in and to all minerals and mineral rights of every kind and character now known to exist or hereafter discovered in and underlying the land described in Exhibit A hereto attached, including, without limiting the generality of the foregoing, oil and gas and rights thereto, together with the sole, exclusive and perpetual right to explore for, remove and dispose of, said minerals by any means or methods suitable to Union Pacific Land Resources Corporation, its successor and assigns, but without entering upon or using the surface of said land, and in such manner as not to damage the surface of said land or to interfere with the use thereof by Union Pacific Railroad Company, its successors and assigns.

(b) All taxes and all assessments, or, if payable in installments, all installments of assessments, levied upon or assessed against the property described in Exhibit A which became or become due and payable in the year 1992 shall be prorated as of the date of delivery of this deed by Grantor to Grantee, said date being the 29th day of December, 1992; and Grantee assumes and agrees to pay, or to reimburse Grantor for, if paid by it, all such taxes and assessments and installments of assessments applicable to the period subsequent to the date of delivery of this deed and assume all taxes and all assessments and all installments of assessments which may become due and payable after said year.

The true and actual consideration for this conveyance is Five Hundred Thousand Dollars ($500,000.00).

Recorded By Ticor Title Insurance Company

BOOK 2631 PAGE 1374

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING AND ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES.

Until a change is requested, all tax statements shall be sent to the following address:

6720 S.W. Macadam Avenue
Suite 300
Portland, OR 97219

EXECUTED this 29th day of December, 1992.

Attest:

Assistant Secretary

UNION PACIFIC RAILROAD COMPANY,

By

Executive Assistant to Executive Vice President-Operation

ACKNOWLEDGEMENT

STATE OF NEBRASKA)
) ss.
COUNTY OF DOUGLAS)

The foregoing instrument was acknowledged on this 29th day of December, 1992, before me, a Notary Public duly commissioned, qualified and acting, within and for the said County and State, by R. B. Schoultz and M.J. Larsen, to me personally known, who stated that they were the Executive Assistant to Executive Vice President-Operation and Assistant Secretary, respectively, of Union Pacific Railroad Company, a Utah corporation, and were duly authorized in their respective capacities to execute the foregoing instrument for and in the name and behalf of said corporation, and further stated and acknowledged that they had so signed, executed and delivered said foregoing instrument for the consideration, uses and purposes therein mentioned and set forth.

Notary Public

My commission expires:

GENERAL NOTARY-State of Nebraska
D.H. LIGHTWINE
My Comm. Exp. April 21, 1996

EXHIBIT A

to

SPECIAL WARRANTY DEED

GRANTOR.....UNION PACIFIC RAILROAD COMPANY
GRANTEE.....ASH GROVE CEMENT COMPANY

A parcel of land in the Northeast Quarter of Section 28, Township 1 North, Range 1 East, Willamette Meridian, Multnomah County, Oregon being more particularly described as follows:

Parcel 1 and Tract B of Partition Plat 1992-164 as recorded in the Multnomah County Records

EXHIBIT B TO
SPECIAL WARRANTY DEED

1. Easement Agreement, including the terms and provisions thereof,
Contained in: Agreement
Between: The Oregon Railroad & Navigation Company and the Northern Pacific Terminal Company
Dated: May 13, 1901
Recorded: March 24, 1941
Book: 38 Page: 101
Records of Multnomah County, Oregon
For: 20 foot wide sewer and drainage

2. Agreement, including the terms and provisions thereof,
Between: Oregon-Washington Railroad & Navigation Company, an Oregon corporation
And: Union Pacific Railroad Company, a Utah corporation
Dated: September 26, 1981
Recorded: October 13, 1981
Book: 1555 Page 969
Records of Multnomah County, Oregon
For: Sewer and water utilities
Affects: Tract A

3. Fence encroachments, as disclosed by survey of Lyle M. Nold, dated December 12, 1984, No. 48107, Multnomah County Survey Records.

4. Power line, man hole, sanitary sewer, water valve, fire hydrant and catch basin, as disclosed by survey of Lyle M. Nold, dated December 26, 1984, No. 48107, Multnomah County Survey Records.
Affects: Tract A

5. Right, title and interest of Union Pacific Land Resources Corporation, a Nebraska corporation, as disclosed by Statement of Claim to Mineral Interests
Recorded: October 3, 1985
Book: 1855 Page 147, and corrected by instrument recorded October 17, 1985 Book: 1858 Page: 1847
Deed Records
Affects: Mineral interests

6. City of Portland Land Use Review No. 92-00098 SP GW, including the terms and provisions thereof
Recorded: May 28, 1992
Book: 2547 Page: 362
Deed Records

7. City of Portland Land Use Review No. 92-00270 GW, including the terms and provisions thereof
   Recorded: May 28, 1992
   Book: 2547 Page: 388
   Deed Records

8. City of Portland Land Use Review No. 92-00372 GW, including the terms and provisions thereof
   Recorded: July 9, 1992
   Book: 2562 Page: 1259
   Deed Records

9. Any adverse claim based upon the assertion that:

   a) Some portion of said land has been brought within the boundaries thereof by an avulsive movement of the Willamette River or has been formed by accretion to any such portion.

   b) Some portion of said property has been created by deposit of artificial fill.

   Any excepting:

   c) The rights of the public and governmental bodies for fishing, navigation and commerce in and to any portion of the premises herein described, lying below the low water line of the Willamette River.

   d) The right, title and interest of the State of Oregon in and to any portion lying below the low water line of Willamette River.

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STATE OF OREGON } ss.
Multnomah County }

I, a Deputy for the Recorder of Conveyances, in and for said County, do hereby certify that the within instrument of writing was received for record and recorded in the record of said County.

92 DEC 29 PM 3:08
RECORDING SECTION
MULTNOMAH CO. OREGON

In Book 2631 Page 1373 On Page

Witness my hand and seal of office affixed.

Recorder of Conveyances

C Stuck
Deputy

BOOK 2631 PAGE 1379

ORIGINAL

592585

NON-EXCLUSIVE EASEMENT DEED

Ash Grove Cement Company, a Delaware Corporation (hereinafter "Grantee"), is the owner of certain real property situate in Multnomah County, Oregon, and described as follows:

> A parcel of land in the Northeast Quarter of Section 28, Township 1 North, Range 1 East, Willamette Meridian, Multnomah County, Oregon, being more particularly described as follows:
>
> > Parcel 1 and Tract B of Partition Plat 1992-164 as recorded in the Multnomah County Records.

The Dominant Parcel does not abut a public right of way. UNION PACIFIC RAILROAD COMPANY (hereinafter "Grantor") owns the real property surrounding the Dominant Parcel. It is the intent and desire of Grantor to convey to Grantee an easement across its property for the purpose of providing the Dominant Parcel access to a public right of way.

NOW, THEREFORE, Grantor, in consideration of the sum of One Dollar ($1.00) to it paid, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell and convey to Grantee a NON-EXCLUSIVE EASEMENT (hereinafter "Easement") for the purpose of constructing, maintaining and operating thereon a twenty-four (24) foot-wide roadway (hereafter called "Private Roadway") on, over and across the property of Grantor situate in the County of Multnomah, State of Oregon, described in Exhibit A (hereinafter "Easement Area"), hereto attached and hereby made a part hereof. The Easement Area shall be subject to such easements as may be necessary to provide sewer, water, drainage and other utilities to the Dominant Parcel. All such easements shall be to the specifications of the City of Portland, Bureau of Environmental Services.

The grant herein is subject and subordinate to the prior and continuing right of Grantor to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, signal, communication, fiber optics wire lines, pipe lines and/or other facilities upon, along, or across any or all parts of the Easement Area, all or any of which may be freely done at any time by Grantor without liability to the Grantee or to any other party for compensation or damages; provided, however, Grantor shall not unreasonably interfere with Grantee's use of the Private Roadway and provided further that Grantor shall bear the cost of repair or

Recorded By Ticor Title Insurance Company

reconstruction of the Private Roadway necessitated by Grantor's exercise of its rights under this paragraph.

The grant herein is also subject and subordinate to the right of Grantor to permit owners of tax lots 15, 33, 75 and 77, Section 21, 1 N, 1 E (presently the site of Columbia Aluminum) to use the Easement Area for access to those parcels, subject to the obligation to reimburse Grantee for construction and maintenance of the Private Roadway as provided herein, and the rights granted to Albina Dock Company by agreement with Grantor dated September 1, 1966.

The foregoing grant is also subject to the right of Grantor to use and to permit others (hereinafter "permittees") to use the Easement Area for any purpose not inconsistent with the Easement granted herein (a "permitted use"), subject to the following conditions:

(1) No permitted use shall result in any substantial economic impact to Grantee or unreasonably interfere with Grantee's use of the Easement Area or Grantee's access to the Dominant Parcel;

(2) Grantor shall, as a condition of any permitted use, require each permittee to reimburse Grantee for a portion of the depreciated cost of the Private Roadway based upon the permittee's use of the Private Roadway in relation to use by all other users. Grantor shall also require each permittee to reimburse to Grantee a proportionate share of all regular ongoing costs relating to the Private Roadway, including maintenance, repair and reconstruction throughout the term of the permitted use. Grantee shall be a third-party beneficiary of the agreement allowing each permittee's use of the Private Roadway and the cost sharing obligations of the permittees shall be enforceable by Grantee directly against each permittee. Grantor shall not be liable to Grantee for any permittee's failure to perform the obligations set forth in the permittee's agreement with Grantor. However, should any permittee fail to reimburse Grantee as required herein, Grantor shall terminate the permittee's right to use the Private Roadway or shall discharge permittee's obligation to Grantee. No collateral agreement shall relieve the Grantee of it obligations pursuant to this Easement.

BY ACCEPTANCE OF THIS EASEMENT, GRANTEE, ITS SUCCESSORS AND ASSIGNS, AGREE TO OBSERVE ALL OF THE TERMS AND CONDITIONS LISTED BELOW WHICH TERMS AND CONDITIONS SHALL RUN WITH THE EASEMENT.

Grantee shall bear the entire cost and expense, furnish all necessary labor and materials, perform all grading necessary for construction, maintenance, repair, or renewal of the Private Roadway, including any and all customary expenses which may be incurred by the Grantor in connection therewith for supervisor inspection or otherwise. Grantee covenants to construct and

maintain the Private Roadway in a good and workmanlike manner so as to be safe for travel by members of the public. Grantee further covenants to hold harmless, defend and indemnify the City of Portland and the City's officers, agents and employees against all claims, demands, actions and suits, including attorneys' fees and costs, brought against any of them arising out of the Grantee's failure to properly establish construct or maintain the Private Roadway. Grantee shall, at its own expense, install, repair, renew and replace any and all appurtenant fences, gates, drainage facilities, traffic signs or devices, and identification signs required at any time for the Private Roadway as a result of Grantee's use thereof by the Grantor, by law, or by any public authority having jurisdiction. All work performed by the Grantee in the Easement Area in connection with construction and maintenance of the Private Roadway shall be done to the reasonable satisfaction of the Grantor.

The Private Roadway shall be constructed, maintained and used in such manner as to minimize interference with the operation of Grantor's tracks, and nothing shall be done or suffered to be done by Grantee which would in any way endanger the safety of operation of said tracks. Grantee shall not use the Private Roadway for storage of any material without Grantor's written consent and in no event shall Grantee place material within twenty (20) feet of the centerline of any track.

Grantee's use of the Private Roadway shall not unreasonably obstruct, endanger or interfere with, hinder or delay the maintenance and operation of the Grantor's railroad tracks or appurtenant facilities. Grantee, at the request of the Grantor and at Grantee's own expense, shall erect a fence or barrier on the trackside of the Private Roadway to protect the Grantor's tracks and/or property.

The right herein granted is subject to the needs and requirements of the Grantor in the operation of its railroad and the improvements and use of its property, and Grantor reserves the right to make any and all modifications or changes in said Private Roadway, or to relocate the Easement Area to such new location as Grantor may designate and Grantee may approve (which approval shall not be unreasonably withheld), whenever, in the furtherance of such needs and requirements, Grantor shall find such action necessary or desirable; provided, however that any such modification of the Private Roadway or relocation of the Easement Area shall not unreasonably interfere with Grantee's access to the Dominant Parcel; and provided further that:

(1) That Grantor shall reimburse Grantee for all costs of relocating and reconstructing the Private Roadway (including without limitation costs of labor and materials supplied by Grantee);

(2) Following such relocation Grantee shall have no further responsibility or liability with respect to the prior roadway, including without limitation, liability for removal of such roadway; and

(3) Grantor and Grantee shall execute an amendment to this Easement in recordable form evidencing the new location of the Easement Area and Grantee shall have the right to record such amendment in the Real Property Records of Multnomah County, Oregon.

Without limiting the generality of the foregoing, Grantee's refusal to approve any relocation of the Easement Area that results in material alteration of Grantee's current highway access shall not be unreasonable.

All the terms, conditions and stipulations herein expressed with reference to the maintenance and use of the Private Roadway and the Easement Area as hereinbefore described shall apply to the Private Roadway and Easement Area when modified or moved to a new location.

Notwithstanding anything to the contrary contained herein, Grantee's obligations to perform and bear all expense for establishment, construction and maintenance of the Private Roadway shall terminate in the event that, as a result of redivision of ownership of Grantor's property adjoining the Easement Area, the City of Portland issues any requirement for widening of the roadway located in the Easement Area, dedication of such roadway as a public right-of-way, or additional improvement (such as but not limited to repaving or structural enhancement) of the roadway as constructed. In such event, Grantor agrees to assume and be responsible for all obligations of Grantee herein which are intended to benefit the City of Portland. Grantee covenants, in such event, to reimburse Grantor a proportionate share (based upon the degree of Grantee's use in relation to all other users) of all regular ongoing costs incurred by Grantor relating to the maintenance, repair and reconstructon of such roadway.

Fiber optic cable systems may be buried on the Grantor's property. Grantee shall telephone the Grantor at 1-800-336-9193 (a 24-hour number) to determine if fiber optic cable is buried anywhere on the Grantor's premises to be used by the Grantee. If it is, Grantee will telephone the telecommunications company(ies) involved, arrange for a cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the Grantor's premises.

In addition to the liability terms elsewhere in this Easement, Grantee shall indemnify and hold the Grantor harmless against and from all cost, liability, and expense whatsoever (including, without limitation, reasonable attorneys' fees, court costs, and expenses) arising out of any negligent act or omission of the

Grantee, its contractor, agents and/or employees, to the extent such acts or omissions cause or contribute to (1) any damage to or destruction of any telecommunications system by the Grantee, and/or its contractor, agents and/or employees, on Grantor's property, (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Grantor's property, or (3) any claim or cause of action for alleged loss of profits or revenue by, or loss of service by a customer or user of, such telecommunication company(ies).

Grantee assumes the risk of and shall indemnify and hold harmless the Grantor and other railroad companies which use the property of the Grantor, their officers, agents and employees, against and from any and all loss, damages, claims, demands, actions, causes of action, costs, reasonable attorneys' fees, fines, penalties, and expenses of whatsoever nature (hereinafter "Loss") which may result from: (1) injury to or death of persons whomsoever (including officers, agents and employees of the Grantor and of Grantee, as well as other persons); (2) loss of or damage to property whatsoever (including damage to property of or in the custody of Grantee and damage to the roadbed, tracks, equipment or other property of or in the custody of the Grantor and such other railroad companies); or (3) violation by the Grantee of any federal, state, or local law, regulation, or enactment; when such Loss is due to or arises in connection with or as a result of:

(a) the construction of the Private Roadway;

(b) any work done by the Grantee, its contractors, agents and/or employees, on or in connection with the Private Roadway;

(c) the use of the Private Roadway by Grantee, its officers, agents, employees, patrons or invitees;

(d) the use of the Private Roadway by the Grantee's successors or assigns or the officers, agents, employees, patrons or invitees of the Grantee's successors or assigns until the Grantee either assigns the Easement or terminates the Easement as provided herein;

(e) the breach of any covenant or obligation assumed by or imposed on the Grantee pursuant to this Easement; the failure of the Grantee to promptly and fully do any act or work for which the Grantee is responsible pursuant to this Easement;

except to the extent such Loss is caused by the negligence of Grantor, its officers, agents, or employees.

Grantee shall fully pay for all materials joined or affixed to and labor performed upon property of the Grantor in connection with the construction, maintenance, repair, renewal, modification or reconstruction of the Private Roadway and shall not permit or suffer any mechanic's or materialman's lien of any kind or nature to be enforced against Grantor's property for any work done or materials furnished thereon at the instance, request, or on behalf of Grantee. Grantee shall indemnify and hold harmless Grantor against and from any and all liens, claims, demands, costs and expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials furnished. Grantor shall not permit or suffer any mechanic's or materialman's lien or other encumbrances of any kind or nature to be enforced against or to interfere with Grantee's interest in the Easement Area.

Grantee shall provide Grantor with a certificate issued by the insurance carrier providing the insurance coverage required pursuant to Exhibit B of this Easement in a policy which contains the following type endorsement:

> UNION PACIFIC RAILROAD COMPANY ("Grantor") is named as an additional insured with respect to all liabilities arising out of Insured's (as Grantee) construction, maintenance and use of the Private Roadway on the Easement Area over Grantor's property.

Grantee WARRANTS that this Easement has been thoroughly reviewed by its insurance agent(s)/broker(s) and that said agent(s)/broker(s) has been instructed to procure insurance coverage and an endorsement as required herein.

All insurance correspondence shall be directed to:

Contracts and Real Estate Department
Union Pacific Railroad Company
1416 Dodge Street, Room 1200
Omaha, Nebraska 68179

This Grant shall take effect on the 29th day of DECEMBER, 1992. It is recognized by Grantor and Grantee that the Easement granted herein provides the sole access to Dominant Parcel. As such, this Easement shall continue and shall not be subject to termination by Grantor until such time as Grantee shall have access by public right-of-way to the Dominant Parcel. At such time the Easement may be terminated by either party providing thirty (30) days written notice to the other and upon receipt of written approval of the City of Portland [requests for approval shall be directed to the Director of the Bureau of Planning]; provided, however, that such termination shall not affect any obligations or

liabilities, accrued or otherwise, of either party arising prior to termination.

Grantor and Grantee acknowledge that the Private Roadway contemplated by this Easement is subject to certain terms and conditions imposed by the City of Portland pursuant to its land use decision in case number LUR 92-00098-SP and further acknowledge that the terms of this Easement have been approved by the City as required by that decision. GRANTOR AND GRANTEE COVENANT THAT CERTAIN PROVISIONS WITHIN THE BODY OF THIS EASEMENT ARE INTENDED TO BENEFIT THE CITY OF PORTLAND AND SHALL BE PERPETUAL IN DURATION AND SHALL RUN WITH THE EASEMENT AREA. THE FOLLOWING OBLIGATIONS, CONTAINED ELSEWHERE WITHIN THIS EASEMENT AND SUMMARIZED BELOW, ARE INTENDED TO BENEFIT THE CITY OF PORTLAND, SHALL NOT BE ALTERED OR ABROGATED WITHOUT THE WRITTEN CONSENT OF THE CITY:

1) construction and maintenance of the Private Roadway in a good and workmanlike manner so as to be safe for travel by members of the public;

2) indemnification of the City against liability for failure to properly establish, construct or maintain the private roadway;

3) termination of the agreement only upon written approval of the City; and

4) reservation of easements for utility purposes.

Upon termination of the Easement herein provided Grantor shall have the right at its election and expense to remove the Private Roadway or to leave the Private Roadway and appurtenances in place in which event they shall become the property of Grantor without compensation to Grantee.

Grantor or Grantee shall provide written notice to the other party (the "Defaulting Party") of the breach of any covenant or conditions of this Easement to be kept and performed by the Defaulting Party. Should the Defaulting Party fail to cure said breach within ten (10) days after such notice is given, the Defaulting Party shall be liable for damages sustained by virtue of such breach as well as costs and reasonable attorneys' fees incurred by the other party in any action to enforce the terms of this Easement. A waiver by either party of a breach by the other party of any covenant or condition of this Easement shall not impair the right of the non-defaulting party to avail itself of any subsequent breach thereof.

Grantor covenants its is the lawful owner of fee title to the Easement Area, that the Easement Area is not subject to any mortgage and, except as previously set forth herein, the Easement Area is free and clear of all other liens, encumbrances or property rights which might unreasonably interfere with Grantee's use of the

Easement Area for the purposes contemplated by this Easement. Grantor agrees, subject to these specific terms set forth herein, to defend Grantee's rights under this Easement against any party claiming any interest in the Easement Area.

Grantor represents and warrants to Grantee that Grantor has no actual knowledge of any storage, disposal, generation, manufacture, refinement, transportation, production or treatment of any hazardous, ignitable, corrosive, caustic, reactive, toxic or polluting waste or substance, including (without limiting the generality of the foregoing) any of the following: "hazardous waste" (as defined in the regulations adopted under the Resource Conservation and Recovery Act of 1976), "hazardous waste constituents" and "hazardous substances" (as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980), oil or petroleum products, asbestos, polychlorinated biphenyls, formaldehyde compounds, explosives, or radioactive materials (collectively referred to as "Polluting Substances" herein) at, upon or from the Easement Area in violation of any applicable law, ordinance, rule, regulation, order, judgment, decree or permit ("Law") or which requires remedial action under any applicable Law; no environmental regulatory governmental unit has served upon Grantor any written notice (i) of violation of any Law involving the Easement Area, or (ii) of the potential responsibility of Grantor for clean-up or other liability at the Easement Area; Grantor has no actual knowledge of any spill, discharge, leak, emission, injection, escape, dumping or release of any kind onto the Easement Area of any Polluting Substances which would require reporting under any applicable Law or require remedial action under any applicable Law; Grantor has no actual knowledge of any underground storage tanks on the Easement Area; Grantor has no actual knowledge of any environmental investigations or audits of the Property. The "actual knowledge" of Grantor for purposes of the foregoing representations shall mean the actual, current knowledge of the current employees of Grantor involved in the management and operation of the Easement Area without duty of inquiry or investigation on the part of such employees. Grantor and Grantee agree that each shall conduct its operations, and Grantor agrees to use its best efforts to cause any permittee to conduct the permittee's operations, so as to comply in all material respects with all applicable laws, rules, and regulations, including without limitation all environmental, health and safety laws and regulations applicable to the Easement Area, including without limitation RCRA, CERCLA, the Clean Water Act (CWA), the Clean Air Act (CAA), and any similar state or local law or regulation. Grantor and Grantee further agree that neither party shall use the Easement Area or allow the Easement Area to be used, and Grantor agrees to use its best efforts to cause permittees not to use the Easement Area, for any activity or purpose involving, directly or indirectly, the use, generation, treatment, storage or disposal of any Hazardous Material, or in any manner which would cause (1) the Easement Area to become a facility within the meaning

of RCRA or any similar law, (2) a release or threat of release of Hazardous Material from or upon the Easement Area within the meaning of CERCLA, or (3) a discharge of pollutants or effluents into any water source or system, or the discharge into the air of any emissions in violation of the CWA, the CAA or any similar state or local law or ordinance. Each party will promptly notify the other of any release or threat of release of any Hazardous Material upon or about the Easement Area or of any violation of any federal, state or local environmental laws has occurred or is occurring upon or about the Easement Area. Each party (the "indemnifying party") shall protect, indemnify and hold the other party (the "indemnified party"), its directors, officers, employees and agents and any successor to the indemnified party's interest in the Easement Area harmless from and against any and all claims, proceedings, lawsuits, liabilities, direct and consequential damages, losses, fines, penalties, judgments, awards, costs and expenses (including without limitation reasonable attorneys' fees and costs of investigation, repair, clean-up, detoxification and preparation of closure or other plans) which arise out of or relate in any way to the breach of any covenant or representation of the indemnifying party contained herein, or to any use of the Easement Area by or on behalf of the indemnifying party, or if the indemnifying party is Grantor, by any permittees of Grantor, including without limitation any use, handling, production, transportation, disposal or storage of any Hazardous Material.

The rights granted in this Easement are intended to benefit the Dominant Parcel and shall inure to any subsequent purchaser of the Dominant Parcel; provided, however, that the Grantee shall not be released from the obligations of this Easement until such time as its successor to the Dominant Parcel shall agree to be bound to the terms of this Easement. The terms of this Easement shall inure to the benefit of and bind any successor to Grantor's interest in the Easement Area. This Easement shall be recorded in the Real Property Records of Multnomah County, Oregon.

IN WITNESS WHEREOF, the Grantor has caused this deed to be duly executed as of this 29th day of DECEMBER 1992.

Attest:

Assistant Secretary

UNION PACIFIC RAILROAD COMPANY,

BY

Executive Assistant to Executive Vice President-Operation

ACKNOWLEDGEMENT

STATE OF NEBRASKA)
)ss.
COUNTY OF DOUGLAS)

The foregoing instrument was acknowledged on this 29th day of DECEMBER, 1992, before me, a Notary Public duly commissioned, qualified and acting, within and for said County and State, by R.B. Schoultz and M.J. Larsen, to me personally known, who stated that they were the Executive Assistant to Executive Vice President-Operation and Assistant Secretary, respectively, of Union Pacific Railroad Company, a Utah corporation, and were duly authorized in their respective capacities to execute the foregoing instrument for and in the name and behalf of said corporation, and further stated and acknowledged that they had so signed, executed and delivered said foregoing instrument for the consideration, uses and purposes therein mentioned and set forth.

Notary Public for Nebraska
Residing at: Omaha, Neb.

My commission expires:

GENERAL NOTARY-State of Nebraska
D.H. LIGHTWINE
My Comm. Exp. April 21, 1996

UPRR\ASHGROVE\EASEMENT.N05

EXHIBIT A

to

NON-EXCLUSIVE EASEMENT DEED

A parcel of land in the Northeast Quarter of Section 28, Township 1 North, Range 1 East, Willamette Meridian, Multnomah County, Oregon being more particularly described as Follows:

Tract A of Partition Plat 1992-164 as recorded in the Multnomah County Records

EXHIBIT B
LARGE COMMERCIAL, INDUSTRIAL CONTRACTORS
PRIVATE ROAD CROSSING AND/OR ENCROACHMENT
INSURANCE REQUIREMENTS

The Licensee and/or its Contractor shall, at its own and/or its Contractor's sole cost and expense, procure the following kinds of insurance and promptly pay when due all premiums for that insurance. If it so elects, the Licensor shall have the right to obtain such insurance and the Licensee shall promptly reimburse Licensor for that expense. This insurance shall be kept in force during the life of this Agreement.

General Public Liability insurance providing bodily injury, including death, personal injury and property damage coverage with a combined single limit of at least $2,000,000 each occurrence or claim and an aggregate limit of at least $2,000,000. This insurance shall contain broad form contractual liability as is usual and customary in the industry, a waiver of governmental immunity (if applicable), Broad Form Property Damage coverage for property owned, leased, occupied, used by or in the care, custody and control of the Licensor, and name the Licensor as an additional insured. This insurance shall be endorsed with a cross liability clause wherein the policy shall insure each person, firm or corporation issued hereunder in the same manner and to the same extent as if a separate policy had been issued to each. If coverage is purchased on a "claims made" basis, it shall provide for at least a three (3) year extended reporting or discovery period, which shall be invoked should insurance covering the time period of this Agreement be canceled.

Automobile Public Liability insurance providing bodily injury and property damage coverage with a combined single limit of at least $2,000,000 each occurrence or claim and at all times an aggregate limit of at least $2,000,000. This insurance shall cover all motor vehicles, including hired and non-owned and mobile equipment, to the extent it may be excluded from the general liability insurance.

Workers' Compensation covering the statutory liability as determined by the compensation laws of the state(s) affected by this Agreement and compliance with all laws of states which require participation in their state workers' compensation fund, and Employers' Liability with a limit of at least $1,000,000.

Licensee and/or its Contractor WARRANTS that this Agreement has been thoroughly reviewed with its insurance agent(s) and the agent(s)/broker(s) has been instructed to procure the insurance coverage required herein with the following endorsement:

> In consideration of the premium charged, [Insert name(s) of Railroad company as on face of Agreement] is named as an additional insured with respect to the exercise by Insured, as Licensee, of rights under all agreements with the additional insured.

The inclusion of more than one insured under this policy shall not operate to impair the rights of one insured against another insured, and the coverages afforded by this policy will apply as though separate policies had been issued to each insured. The inclusion of more than one insured will not, however, operate to increase the limit of the Insurer's liability.

Any other insurance carried by the additional insured above, which may be applicable, shall be deemed excess insurance and Insured's insurance primary for all purposes despite any conflicting provisions in Insured's policy to the contrary, and Insurer hereby waives any rights of subrogation which it might otherwise have against the additional insured above, its officers, agents, employees, and other contractors and subcontractors.

The additional insured above will not, by reason of its inclusion under this policy, incur liability to the Insurer for payment of premiums for this policy.

Notwithstanding anything to the contrary contained in this policy, it is understood and agreed that this policy shall contain no exclusions for work in, on or near a railroad right-of-way.

The Licensee and/or its Contractor shall furnish to Licensor certificate(s) of insurance hereto evidencing the required coverage and endorsements and, upon request, a certified duplicate original of any of those policies as they pertain to this Agreement. Exhibit B-2 or Exhibit B-3 may be used to provide evidence of the required insurance. The insurance company(ies) issuing such policy(ies) shall notify the Licensor in writing of cancellation thereof at least thirty (30) days prior thereto.

The insurance policy(ies) shall be written by a reputable insurance company or companies acceptable to the Licensor or with a current Best's Insurance Guide Rating of B and Class X or better. Such insurance company shall be authorized to transact business in the state(s) affected by this Agreement.

A waiver of subrogation needs to be endorsed by the insurance company in favor of the Licensor.

148902

STATE OF OREGON } ss.
Multnomah County }

I, a Deputy for the Recorder of Conveyances, in and for said County, do hereby certify that the within instrument of writing was received for record and recorded in the record of said County

92 DEC 29 PM 3:08

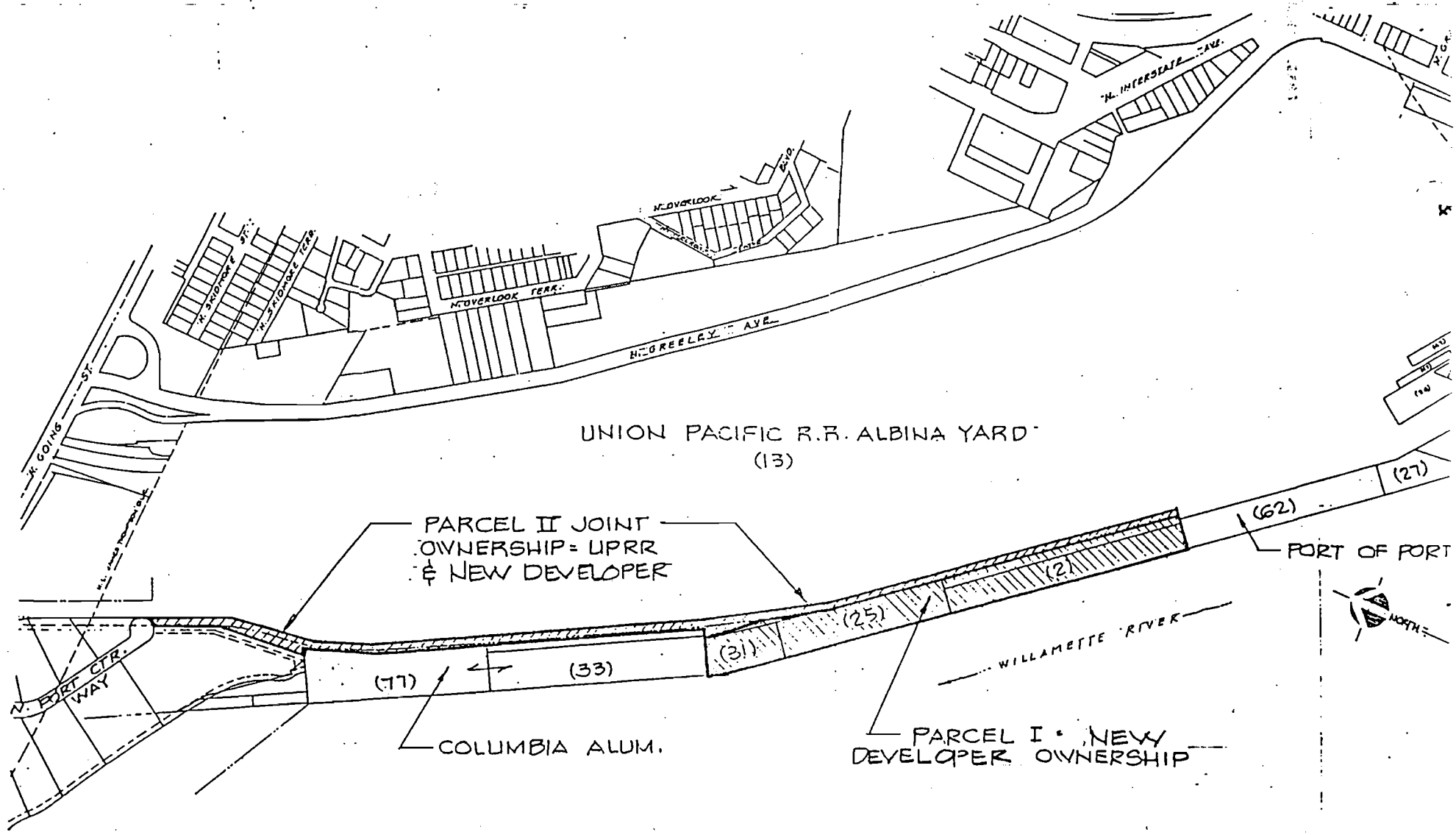
RECORDING SECTION
MULTNOMAH CO. OREGON

In Book BOOK 2631 PAGE 1379 On Page

Witness my hand and seal of office affixed.

Recorder of Conveyances

Deputy



GEN. PLOT PLAN = UNION PACIFIC ALBINA LAND DIVISION

1" = 600'

92-006
SMG 1.8.9

Appendix10-000054

APPENDIX F

PRIOR ENVIRONMENTAL SITE ASSESSMENTS FOR THE PROPERTY

PHASE I ESA REPORT
PREPARED BY – SCIENCE AND ENGINEERING ANALYSIS CORPORATION (SEACOR)
DECEMBER 1993

RECEIVED
MAR 16 1996
STOEL RIVES LLP

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

Columbia Aluminum Corp.
Alumina Unloading Facility
2600 North River Street
Portland, Oregon

SEACOR Job No. F0132-001-01

Submitted by

SEACOR
for

Columbia Aluminum Corp.
8000 NE Parkway Drive, Suite 200
Vancouver, Washington

December 7, 1993

Science & Engineering Analysis Corporation
7614 Southwest Mohawk Street
Post Office Box 1508
Tualatin, Oregon 97062-1508
(503) 691-2030

Prepared by:

Ross R. Simmons, REA
Associate, Project Manager

Reviewed by:

Randall T. Rees
Principal Scientist

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Appendix B Photographs of Site

EXECUTIVE SUMMARY

Science & Engineering Analysis Corporation (SEACOR) performed a Phase I Environmental Site Assessment of the Columbia Aluminum Corp. Alumina Unloading Facility located at 2600 N. River Street in Portland, Oregon. The field inspection, completed on November 3, 1993, consisted of a walk-through inspection of the interior and exterior areas of the property. A review of pertinent readily available records of local, state, and federal agencies, historical reviews, interviews, and a review of aerial photographs of the subject property were also conducted.

The subject property is used by Columbia Aluminum to unload alumina from ships, store the alumina, and load alumina into railcars for shipment to Columbia's Goldendale, Washington smelter. The site covers approximately five acres on the east bank of the Willamette River, just south of the Swan Island industrial area. The central portion of the property contains three large alumina storage silos and five other structures. The northern and southern portions of the site are largely undeveloped, gravel-covered property. Two railroad lines run from north to south across the length of the property. The property is adjoined on three sides by the Union Pacific Railroad's Albina Yard.

No evidence of spills or other releases of hazardous materials was observed, and no observable indications of contamination were noted. Two aboveground storage tanks are present on the site for storage of diesel fuel and waste oil. Relatively small quantities of various lubricants and other hazardous materials are also stored on the site.

No evidence of currently existing underground storage tanks (USTs) was identified on the site. Two 1,000-gallon USTs were removed from the site in 1989. Limited laboratory testing data and information from interviews with the general foreman of the facility indicate that no petroleum concentrations exceeding typical Department of Environmental Quality (DEQ) cleanup requirements were present in soil beneath the tanks. Two other USTs, one associated with a previous alumina handling facility and one associated with a former grain handling facility, were removed from the site in 1982. The general foreman of the facility reported that no evidence of contamination was observed in the tank pits at the time of removal. Two other individuals who formerly worked at the facility corroborated these reports. No record of soil sampling is available.

Review of historical site use data indicates that the current alumina handling facility was constructed in 1982 to replace an older facility located on the northern portion of the property since 1957. A grain handling facility and a large warehouse structure occupied the southern portion of the site until the mid-1960s.

A review of local, state, and federal environmental agency records indicated the presence of several known or suspected contaminated properties within one-half mile of the subject property. DEQ records indicate that leaking USTs have been removed from the adjoining railroad yard facility, and that repeated spills of petroleum from diesel locomotive fueling and associated activities have occurred in the railroad yard. However, limited information available in the DEQ files indicates that the locations of the USTs and spills have been in the southern portion of the railroad yard, approximately one mile south of the subject property. Because of the distance, contamination at these locations would not be expected to affect the subject property. Other DEQ-listed sites are one-half mile or more distant, and also appear to pose a relatively low risk of impact to the subject property.

The results of this investigation represent a review of current conditions, based on available information, as described above. The scope and limitations of the Phase I Environmental Site Assessment is consistent with the guidelines published in ASTM E1527-93, *Standard Practice for Environmental Site Assessments:*

Phase I Environmental Site Assessment Process. Based on this investigation, the subject property appeared to be well maintained and did not exhibit observable indicators of environmental impairment. The overall risk of significant environmental contamination at the subject site appears to be primarily related to two factors:

- The general industrial nature of the property and adjoining railroad yard for more than 60 years represents a potential source for environmental contamination of the site. However, no visible indicators of such contamination were observed, and available records of environmental agencies do not document any record of known contamination concerns on or adjacent to the site.

- The former presence of four USTs on the subject property represent potential sources of subsurface petroleum contamination. Limited data regarding the removal of two of the USTs in 1989 indicates that significant contamination of soil directly beneath the tanks was not present, and an interview with the general foreman of the facility who observed the tank removals supports this conclusion. Although no written documentation is available about the removal of the other two USTs in 1982, three individuals who worked at the facility at the time reported that they recalled no evidence of leaks or contamination in the tank excavations.

1.0 INTRODUCTION

This report presents the results of a Phase I Environmental Site Assessment of the Columbia Aluminum Corp. Alumina Unloading Facility at 2600 North River Street in Portland, Oregon. Science & Engineering Analysis Corporation (SEACOR) was retained by Columbia Aluminum Corp. to perform the assessment in order to determine if a potential for significant contamination exists for the subject property.

This assessment consisted of a visual inspection of the site, interviews, a historical review, and a review of the pertinent records of local, state, and federal agencies. The scope of the investigation is consistent with the guidelines published in ASTM E1527-93, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* A copy of the complete Scope of Services agreement for this investigation is presented in Appendix A.

The results of the investigations are described below.

2.0 GENERAL SITE DESCRIPTION

2.1 Description of Facility

The subject property is a facility used by Columbia Aluminum to unload alumina from ships, store the alumina, and load alumina into railcars for shipment to Columbia's Goldendale, Washington smelter. Alumina is a granular solid form of aluminum oxide which occurs naturally in such minerals as corundum, bauxite, ruby, sapphire, and emery. It is used as a raw material in the production of aluminum. Raw alumina is not currently regulated as a hazardous material under federal or state environmental laws.

The site covers approximately five acres and is located on the east bank of the Willamette River, just south of the Swan Island industrial area. Although the site is listed as having an address on North River Street, the improved street ends some distance to the south. Access to the property is obtained via a driveway across the adjoining private property to the north.

The subject property includes the following principal structures:

- A two-story shop and administration building containing office space, a lunchroom, employee locker rooms, equipment control rooms, and a maintenance shop.
- An unloader building containing a large motor and air pump equipment for unloading alumina from the holds of ships.
- Three large silos for storage of alumina.
- A railcar load-out building where alumina is transferred from the silos into railcars.
- Associated pneumatic equipment and piping for transfer of alumina from ship to silos, and from silos to railcars.
- A garage used for storage of equipment and other supplies.

- A shed used for storage of lubricants and other hazardous materials.
- A concrete pier extending over the river and several associated concrete dolphins for ship moorage.
- Two rail lines which run from north to south across the length of the property.

The central portion of the property is paved with asphalt and concrete, while the north and south portions have a gravel surface. Grass, shrubs and small trees are present along the top of the riverbank. The property is bounded by railroad yards on the south, east, and north sides.

Figure 1 shows the location of the site. Figure 2 is a site map of the subject property. Photographs of the site are presented in Appendix B.

2.2 Legal and Plat Description of Property

The subject property is described as Tax Lots 15, 33, 75, and 77. The property is located in Township 1 North, Range 1 East, Section 21 of the Willamette Baseline and Meridian.

2.3 Topographical Features

The project site is located in the Portland basin along the east bank of the Willamette River, approximately nine miles south of its confluence with the Columbia River. The United States Geological Survey (USGS) 7.5-minute topographic map for the Portland quadrangle was reviewed. The map shows the subject property to be at an elevation of approximately 30 feet above mean sea level (MSL). The topography in the immediate vicinity of the subject site is generally flat, as the site is located on the river's flood plain. Aerial photographs of the site from the 1930s and 1950s suggest that fill may have been placed on the property to raise the grade above the river's wetlands. At the western edge of the subject property, the bank slopes steeply to the river approximately 15 feet below. Bluffs rising to an elevation of 100 feet or more are located approximately one-quarter mile to the east.

The Portland area receives an average of about 40 inches of precipitation per year. In an average year, about 70 percent of precipitation occurs within a five-month period from November through March.

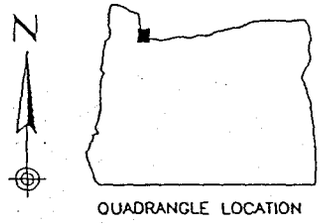
3.0 HISTORICAL REVIEW

Based on a review of historical records, it appears that the subject property has been used largely for waterfront commerce for at least the past 54 years.

3.1 Aerial Photograph Review

Aerial photographs for the years 1939, 1956, 1961, 1964, 1968, 1971, 1973, 1977, 1980, 1984, 1986, 1988, 1990, and 1992 were reviewed at Northern Light Studio in Portland. Historic aerial photographs are a valuable tool for evaluating former property uses, since the general type of activity on a property can often be discerned from the type and layout of structures visible in the photograph. However, specific elements of a site operation cannot normally be determined from the photographs, and the structures visible in the photograph cannot be definitively linked to other property records such as street addresses or title records. By reviewing a chronological series of aerial photographs, it is possible to discern the general type and trend of property use and development over a period of time. However,

Reference: U.S. Geological Survey, 7.5 min. Portland Quadrangle, 1977.



1000 0 1000 2000
Scale in Feet

SEACOR
ENVIRONMENTAL ENGINEERING
TUALATIN, OREGON

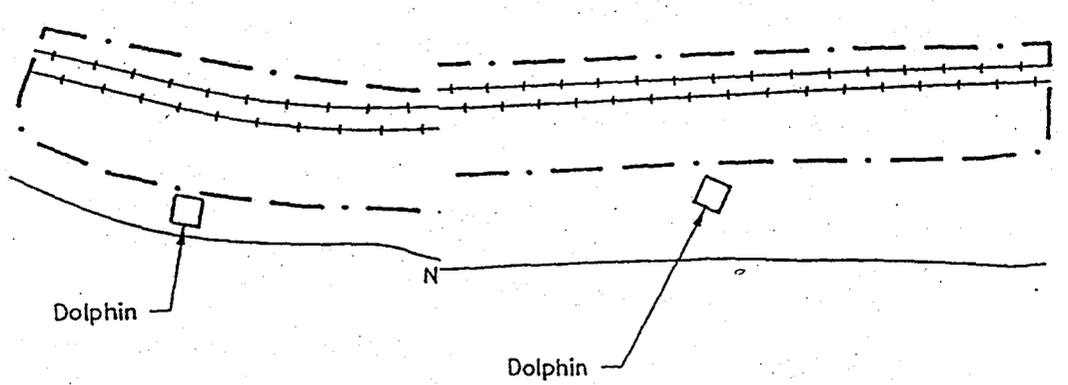
COLUMBIA ALUMINUM CORPORATION
ALUMINA UNLOADING FACILITY
2600 N. RIVER STREET
PORTLAND, OREGON

VICINITY MAP

FIGURE 1

JOB: F0132-001-01 DRAWN: KPW DATE: 10/04/93 APPROVED: RPS DATE: 11-9-93

UPRR Alb PRR Albina Rail Yard



WILLAMETTE RIVER

LEGEND

Asp

Co

Su

120 0

SITE PLAN

FIGURE 2

11/08/93 APPROVED: RRS DATE: 11-9-93

since each photograph provides only a snapshot of the area at the time the photograph was taken, it is not possible to determine with certainty the uses of a specific property during the period between photographs.

Observations of photographs reviewed for the subject property are listed below:

- The 1939 photograph showed a dock in the river at approximately the location of the current Columbia Aluminum pier. A large warehouse-type structure is visible extending from that point southward along the riverbank for approximately 1,000 feet, occupying both the southern portion of the current Columbia Aluminum site and a large area of the adjacent property to the south. A small boat moorage was observed in the river adjacent to the northern portion of the subject property. The northern portion of the property was undeveloped vacant land, partially wooded and partially covered by unvegetated soil which appeared to be fill placed on the site. Sediment dredged from the river bottom has often been used as fill material along the waterfront in the Portland area. Additional structures were present along the riverbank approximately three-quarters of a mile to the south, and approximately one-quarter of a mile to the north. Railroad yards were present to the east, although they were less extensive than they currently are.

- The 1956 photograph showed the subject property and surrounding properties to be substantially the same. However, the boat moorage in the river was no longer present, the portion of the subject property covered by trees had decreased in size, and additional development of the adjoining railroad yards had occurred.

- The 1961 and 1964 photographs showed a moderate-sized facility on the northern portion of the subject property, near the location of the current hazardous materials storage shed. Based on information obtained from other sources, this appears to have been the original alumina handling facility on the property. The photograph shows the facility to include a dock in the river, some sort of overhead piping or conveyance between the dock and the shore, and two small buildings adjacent to railroad lines through the site. No other significant changes to the subject property were visible. A large warehouse structure was added on the railroad yard property just east of the subject site.

- In the 1968 through 1977 photographs, the large warehouse was no longer present on the southern portion of the property. The subject property appeared to be vacant except for the alumina unloading facility on the northern portion. The facility one-quarter mile to the north was also no longer present. Other surrounding properties appeared to be generally unchanged.

- In the 1980 photograph, the area of the subject property occupied by the current facility appeared to have been cleared and graded. No other significant changes were noted.

- In the 1984 through 1992 photographs, the subject property and surrounding properties appeared generally as they do today. The old alumina facility on the northern portion of the property was no longer present in 1984, and the current facility was visible.

3.2 Ownership Record Review

Ownership records for the subject property were reviewed for the years 1942 to 1993. In 1952, the property owner was listed as Oregon/Washington Railroad and Navigation Co. Listed property transfers after 1942[1] are as follows:

- 1959, Oregon/Washington Railroad and Navigation Co. sold to Union Pacific Railroad.
- 1964, Union Pacific Railroad sold to Harvey Aluminum Co.
- 1987, Commonwealth Aluminum Corp. sold to Columbia Aluminum Corp.

3.3 City Directory Review

Reverse-index directories (R.L. Polk's City Directories) were reviewed at the Multnomah County Library to identify past occupants of the subject property and adjacent properties. Directories were reviewed for the years 1940, 1955, 1960, 1965, 1970, 1975, 1980, and 1985. The 1940, 1955, and 1960 directories included no listings north of the 1600 block of North River Street. Subsequent directories included the following listings:

1965	1900 North River Street	Oregon Portland Cement
	2000 North River Street	Pacific Building Material (concrete plant)
	2100 North River Street	Union Pacific Dock
	2240 North River Street	NW Dock & Elevator (grain elevator)
	2600 North River Street	General Ore, Inc.
1970	1900 North River Street	Oregon Portland Cement
	2600 North River Street	General Ore, Inc.
	3005 North River Street	Willamette Hi Grade Concrete
1975	1900 North River Street	Vacant
	2600 North River Street	General Ore, Inc.
1980	2600 North River Street	General Ore, Inc.
1985	2600 North River Street	Martin Marietta Aluminum
	3000 North River Street	Vacant

3.4 Interviews

Mr. Donald Leffler, general foreman for the Columbia Aluminum unloading facility, was interviewed about the history of the facility. Mr. Leffler stated that he had worked at the facility for Columbia Aluminum and its predecessor companies for 28 years. According to Mr. Leffler, the current facility was constructed in 1982 to replace a smaller alumina handling facility on the north portion of the subject property. The old facility had been in operation since at least 1957, he said. The southern portion of

[1] Information was obtained by SEACOR employees from the Multnomah County Assessor's Office and is merely intended to be a review of past ownership. This should not be considered to be a chain-of-title as performed by qualified title professionals.

the property, where the current facility is located, was formerly occupied by a grain handling facility. According to Mr. Leffler, the grain facility burned in 1966.

Mr. Leffler said two 1,000-gallon underground storage tanks (diesel and gasoline) were removed from the site in 1989. He said two other underground storage tanks (USTs) had been previously removed from the site. A 1,000-gallon UST was removed in approximately 1982 from the old facility when it was demolished after construction of the new facility. At about the same time, a 1,000-gallon UST was removed from the site of the former grain facility during construction of Columbia Aluminum's new facility.

Mr. Leffler said the facility had always used various lubricants for its loading and unloading equipment, as well as small quantities of paint, and solvent for parts cleaning. "Stoddard" solvent was used until about 1989. Waste solvent, approximately one drum every two years, was shipped to the Goldendale smelter where off-site disposal was arranged. Since 1989, the company has used solvent supplied by "Safety Kleen."

Mr. Leffler said the facility is occasionally used for transfer of coal tar pitch from ships to railcars for shipment to the Goldendale smelter. He said the subject property is only used as an emergency backup location for pitch handling when Columbia Aluminum's usual pitch facility is unavailable. He said pitch has been handled at the facility only once since 1988. From 1982 to 1988, approximately five shiploads of coal tar pitch per year were handled at the facility. The pitch was not stored on the site, but was transferred directly from the ship to railcars. Pitch was not handled at the former facility on the northern portion of the site, Mr. Leffler said.

SEACOR interviewed two other individuals regarding removal of the former USTs. Mr. Larry Fry, a former employee of Martin Marietta Aluminum who worked at the site from 1981 to 1986, stated that he personally observed removal of the UST at the old alumina facility in the fall of 1981. He said he recalled that the tank had been located in the north portion of the subject property, near the office shack for the old facility. He said the tank appeared to be intact with no obvious holes when it was removed, and that he did not recall any visible evidence of fuel leakage in the tank excavation. Mr. Fry said the UST at the former grain facility had been removed shortly before he became employed at the site, probably in the spring of 1981. He said he had been told that the tank still contained fuel at the time of removal, indicating that major leaks had not occurred. He said he had not heard any discussion about leaks or contamination being observed at the time of removal, and took that as an indication that none existed. Mr. Roger Gardner is an engineer formerly employed by Swan-Wooster Engineering, the firm that oversaw demolition of the grain facility and construction of the new alumina facility. Mr. Gardner said he did not have any personal recollection regarding removal of the tanks, but was sure he would have been made aware of any significant evidence of leaks if any had been observed. Since he had not been told about such leaks, he said he assumed that none were observed.

4.0 PROPERTY INSPECTION

4.1 General Description of Subject Property

SEACOR performed the site inspection on November 3, 1993. Weather conditions during the inspection were cloudy and rainy, with a temperature of approximately 50 degrees Fahrenheit. The subject property is a narrow strip, approximately 120 feet wide, stretching 1,650 feet from north to south along the east bank of the Willamette River (see Appendix B, Photograph 1). The northern third of the site, the location of the old alumina handling facility, is gravel-covered. The only structure in this area is the

hazardous materials storage shed. The central third of the site contains the current alumina handling facility. The southern third of the site is gravel-covered and contains no structures.

The topography of the subject property was level. Along the west property boundary, the ground surface drops off sharply to the Willamette River approximately 15 feet below. Surface water flows toward catch basins in the central part of the site, and toward the river in the remainder of the site. No topographical features that would likely contribute to environmental contamination of the property were observed during the inspection.

4.2 Uses of Nearby Properties

The Willamette River forms the western border of the subject property. Adjoining property to the north, east, and south is occupied by the Union Pacific Railroad Albina rail yards. Industrial facilities are located along the riverbank approximately one mile to the north and south of the subject site. A large warehouse structure is located in the rail yard, approximately 200 feet to the east. Other structures associated with the rail yards are located further to the east and southeast. Subsurface contamination is sometimes associated with rail yards because various hazardous materials have, over the years, been transported by rail, and because of railcar maintenance activities. However, as observable from the subject property and public right-of-way, no obvious signs of significant environmental contamination was apparent on the adjacent property.

4.3 Exterior Storage Areas

One area of the asphalt parking lot, north of the garage building, was used for storage of various spare equipment. No evidence of hazardous materials was observed in this area.

A 500-gallon aboveground tank located on the north side of the garage building stores diesel fuel for use in vehicles at the facility (Photograph 6). The tank was installed in 1989. Another aboveground tank adjacent to the west wall of the railcar load-out building is used to store waste oil (Photograph 7). The tank has a capacity of 360 gallons and is used to accumulate waste oil of all types, including motor oil, hydraulic oil, and lube oil. Waste oil is removed from the tank for off-site recycling by a contractor approximately twice a year, according to Mr. Leffler. The tanks are located on concrete pads surrounded by asphalt paving. There are no containment berms around the tanks. No evidence of spills or leaks from the either tank were observed.

No other exterior storage areas or evidence of storage areas were observed.

4.4 Exterior Waste Disposal Areas

A small accumulation of alumina was observed on the soil surface between silo #2 and silo #3. No other exterior waste disposal areas were observed.

4.5 Off-Property Sources of Surface Contamination

No streams pass through the subject property. Surface runoff from the adjoining railroad yard may flow onto the subject property. However, no evidence of surface water flow, nor any evidence of surface discoloration was observed on the immediately adjoining areas of the railroad yard. The Willamette River has the potential to serve as a pathway for contaminants to migrate onto the subject property. However, no visible indications of contamination were observed on the river or along the riverbank on the west perimeter of the subject property.

4.6 Exterior Subsurface Structures

Several stormwater catch basins were observed in the area of the tracks to the south of the railcar load-out building. According to Mr. Leffler, these catch basins drain to a subsurface storm water system which, in turn, discharges to the river. Each of the drains contained a clear liquid which appeared to be water. Mr. Leffler said an application for a NPDES discharge permit is currently in process. He said no sampling of the discharge has occurred to date.

Two additional storm water lines were reported by Mr. Leffler to pass beneath the property, carrying stormwater from properties to the east toward the river.

Hydraulic car mover systems are located adjacent to each of the railroad tracks through the property. The car mover systems propel railcars through the load-out building at a prescribed rate to facilitate loading of alumina into the cars. Hydraulic pumps are located next to each track on the south end of the load-out building. Subsurface hydraulic lines run to the north and south along the tracks from the main pumps.

No evidence of water wells, septic tanks, or other subsurface structures was observed on the subject property.

4.7 Underground Storage Tanks

No reports or other evidence which would indicate the current presence of USTs were discovered in the investigation of the subject property. Two 1,000-gallon USTs were located near the northwest corner of the railcar load-out building until 1989. One tank stored diesel and was replaced by the aboveground tank currently located near the garage building. The other tank stored gasoline. According to Mr. Leffler, gasoline needed for vehicles at the facility is now supplied by an off-site commercial fueling station. Mr. Leffler provided a copy of a hand-written report of laboratory testing from Coffey Laboratories of Portland. The laboratory report does not indicate specific sampling locations or methods, and does not specifically identify the Columbia Aluminum site or the removed USTs. However, Mr. Leffler stated that this report summarizes the results of eight soil samples collected from the pit where the USTs were removed. The laboratory reports indicate that concentrations of Total Petroleum Hydrocarbons (analyzed by modified EPA Method 418.1) in the eight samples ranged from 5.3 to 8.4 milligrams per kilogram (mg/Kg). The report also contains the notation "okayed by Larry Frost - DEQ." At the time of the UST decommissioning in May 1989, the Department of Environmental Quality (DEQ) had not established numeric cleanup levels for petroleum in soil. Adequate cleanup of petroleum-contaminated soil at UST sites was typically judged by DEQ staff on a "sight and smell" basis. Current cleanup levels under Oregon's Soil Matrix Cleanup Rules (OAR 340-122-305 through 340-12-360) range from 40 to 130 mg/Kg for gasoline contamination and from 100 to 1,000 mg/Kg for diesel or other petroleum products. The reported petroleum hydrocarbon concentrations in the 1989 samples were well below these current cleanup requirements.

Two other USTs are reported to have been formerly located on the site. A 1,000-gallon gasoline UST was reportedly located at the old alumina handling facility at the site. The old facility was located on the northern portion of the subject property, generally in the vicinity of the current hazardous materials storage shed. According to Mr. Leffler, the former UST was located near the east property boundary, approximately 150 feet south of the current hazardous materials storage building. He said the UST was removed in 1982 after completion of the new alumina handling facility.

During construction of the new alumina handling facility in 1982, another 1,000-gallon gasoline UST was discovered which had apparently been part of the grain handling facility located on the site until 1966. This UST was located in the area of the current railcar load-out building. Mr. Leffler said this UST was also removed in 1982.

Mr. Leffler said he observed the removal of both tanks, and that no evidence of contamination was observed in the pits at the time. Two other individuals who worked at the site during the early 1980s also stated they did not believe any evidence of contamination had been observed at the time of the tank removals. No documentation of the 1982 UST removals is available.

5.0 BUILDINGS AND STRUCTURES

5.1 General Description

The primary structures on the site are the three large silos used for storage of alumina. Interiors of the silos were not inspected. Five other buildings are located on the site. These are described below.

Unloader Building. This concrete block building is located on the concrete pier over the river, near the ship mooring location. The unloader building contains primarily a large motor/vacuum pump system which provides pneumatic lift to remove alumina from ship holds and transfer it to the silos for storage (Photograph 3). A small fireproof cabinet in the building is used to store quart-size bottles of lubricants for routine maintenance of the equipment. The unloader building also includes a small separate room known as the Unloader Motor Control Center (MCC). The Unloader MCC includes electrical switch panels for controlling the unloader equipment, as well as two small electrical transformers.

Railcar Load-Out Building. The load-out building is a large metal shed, open on the north and south ends to allow railcars to pass through the structure (Photograph 2). Two sets of tracks pass through the building, with an asphalt-paved surface along the tracks. Suspended above the tracks within the building are a control room where the car-moving and loading equipment is controlled. The load-out building also contains alumina transfer piping which attaches directly to the loading hatches of the railcars. This allows transfer of the alumina into the cars with a minimal amount of dust or spillage. Only small amounts of alumina were observed to be accumulated on and adjacent to the tracks.

Shop and Administration Building. This is a two-story concrete block building with concrete floors. The ground floor contains the following:

- Lunchroom and employee locker rooms
- Electrician's workshop, including a fireproof cabinet used for storage of small quantities of spray paint, varnish, and lubricating oil.
- First floor Motor Control Center (MCC), the location of various electrical switches and controls for the motors which operate the alumina handling system. Two small electrical transformers were also present in the first floor MCC.
- Maintenance shop where the primary maintenance and repair of the facility's equipment and vehicles are performed (Photograph 8). A parts washing solvent bin was observed. According to Mr. Leffler, solvent is supplied by Safety Kleen, and spent solvent is removed from the bin by Safety Kleen. Other hazardous materials observed in the maintenance shop included approximately six gallons of antifreeze, one drum of motor oil, one drum of hydraulic oil, and

a small container of grease. Some minor oily staining was evident on the concrete floor, and absorbent material was observed in a couple of areas, apparently placed to clean up small spills of oil. Generally, the shop appeared quite clean and well organized, with relatively small quantities of hazardous materials present.

The second floor of the Shop and Administration Building contained the following:

- Administrative offices for the facility.
- Storage room containing various small equipment parts and a metal cabinet used for storage of spray paint.
- Second floor MCC, similar to the first floor MCC.
- Electrical room where two electrical transformers were located to receive and distribute the main electric power for the facility.

Garage Building. The garage building is used to store rubber-tired front loaders, forklifts, a spare engine for the alumina handling equipment, and various maintenance supplies. The garage building had a concrete floor. No hazardous materials storage was observed in this area.

Hazardous Materials Storage Building. This is a small metal shed with a concrete floor (Photograph 4). Stored in the building were eight 55-gallon metal drums of various lubricants and approximately twenty 5-gallon pails of various petroleum products (Photograph 5). No evidence of spills was observed. No waste materials were observed in the building. According to Mr. Leffler, the only hazardous materials waste produced at the facility is waste oil of various types. All waste oil is placed into the aboveground waste oil storage tank pending pickup for off-site disposal by a contractor.

5.2 Interior Storage Areas

Primary hazardous materials storage at the facility is in the hazardous materials storage building. Small quantities of lubricants and other hazardous materials are stored in the maintenance shop, electrician's shop, and the unloader MCC room. When used, stored, and disposed of in the manner for which they are intended, small quantities of chemicals such as those observed on the subject site do not ordinarily represent a significant environmental contamination risk.

5.3 Interior Waste Disposal Areas

Interior waste disposal areas were limited to those typical of office and commercial structures. No evidence of improper disposal of chemicals was observed.

5.4 Interior Discharges

No potential sources of surface contamination were observed within the subject site's structures.

5.5 Interior Subsurface Structures

Potential migration pathways for contaminants to the subsurface environment observed in the interior of the buildings were limited to plumbing drainage systems typical of office and commercial structures. No evidence of improper disposal of chemicals was observed.

5.6 Asbestos

A preliminary asbestos assessment was included in this investigation. The asbestos assessment consisted of visual observation of the accessible structural areas and exposed material which most commonly contain asbestos. Findings and conclusions are based upon limited access to all areas. Hidden spaces between walls and similar conditions may, at times, harbor asbestos-containing materials (ACM).

Because of the 1982 construction date of the facility, it is not expected that significant amounts of ACM would be present in the structure. Manufacture of most ACM building products was discontinued in 1979. No suspected ACM was observed in the unloader building, load-out building, garage, or hazardous materials storage building. Some insulated water piping was observed in the shop and administration building. Based on appearance and feel, the insulation appeared to be fiberglass. However, ACM insulation may be present in some segments of the pipe runs, particularly at pipe joints, elbows, and fittings. All of the observed insulation was in good repair.

Vinyl flooring was present in the office areas. Such flooring, the paper backing on the flooring material, or the mastic used to adhere the flooring to the subfloor sometimes contains asbestos.

The office area had a ceiling of suspended tiles. There is a potential that the ceiling tiles or insulation in the area above the suspended tiles may contain asbestos. However, based on the construction date of the building, this is unlikely.

Asbestos is generally believed to become a hazard to human health primarily if the fibers are airborne and inhaled. As long as ACM is not exposed to physical disturbance and is in good condition, it normally presents minimal hazard to building occupants.

Federal and state environmental regulations require that friable asbestos be removed prior to demolition and renovation which involves disturbing the asbestos-containing materials. This work must be done by licensed asbestos abatement contractors in most cases. Non-friable asbestos-containing materials, such as certain floor coverings, roofing materials, and cement products, must also be handled in accordance with the regulations, but the requirements vary depending on specific circumstance. Specific discussions regarding potential health risks of asbestos-containing materials at this property and evaluations of indoor air quality, development of asbestos abatement specifications, and/or cost estimates were not part of this project.

5.7 Polychlorinated Biphenyls

Electrical transformers, capacitors, and similar equipment may contain polychlorinated biphenyls (PCBs) in dielectric insulating fluids within the unit. The federal Toxic Substances Control Act (TSCA) generally prohibited the domestic manufacture of PCBs after 1979. There is potential for the dielectric fluid in electrical equipment manufactured prior to that date to contain PCBs.

Several transformers were located on the subject property. Small transformers were present in the three motor control centers. According to Mr. Leffler, all of these units were dry-type transformers that do not contain insulating fluids. Thus, these transformers do not contain PCBs.

One large transformer containing insulating oil is located outside of the southeast corner of the Shop and Administration Building. According to Mr. Leffler, the transformer was purchased in 1982 and contains less than 1 part per million PCBs in the insulating oil.

No leakage, staining, soil discoloration, or stressed vegetation was observed on the ground surface around the transformer.

Fluorescent light fixtures were present throughout the structures on the subject property. Fluorescent light fixtures have ballasts which may contain PCBs. Light fixtures manufactured prior to 1979 may contain PCBs. Due to the 1982 construction date of the facility, the light fixtures at the facility are unlikely to include PCB-containing ballasts. Individual fixtures were not inspected in this survey.

5.8 Air Emissions

The facility has a current air contaminant discharge permit from the DEQ for emissions from eight different locations within the facility. Emissions of a total of 6.8 tons of alumina dust per year are permitted from the suction unloader, unloader airlift, the three silos, the reclaim airlift, and the railcar load-out building. The permit also allows emission of up to 10 tons per year of pitch particulate from the pitch loading filter. The pitch emission rates are calculated on 100 hours per year of pitch handling operations.

6.0 ENVIRONMENTAL RECORDS REVIEW

6.1 Environmental Protection Agency Records

The Environmental Protection Agency's (EPA) National Priority List (NPL) of hazardous waste sites, dated October 13, 1993, indicates no sites located within a one-mile radius of the property. The NPL list is a federal priority listing of sites where no sources of private cleanup funds have been identified, and where releases or threatened releases of hazardous materials pose a threat to human health or the environment.

The EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) inventory of potential hazardous waste sites under investigation was reviewed. This list includes sites that are, or have previously been, evaluated for possible inclusion on the NPL. The CERCLIS inventory, as of October 8, 1993, lists no sites located within one-half mile of the subject site.

6.2 Department of Environmental Quality Records

The DEQ Environmental Cleanup Division's listings of known or suspected contaminated sites were reviewed. The Inventory of Hazardous Substance Sites lists sites where a confirmed release of hazardous substances has occurred and where, based on a Preliminary Assessment and hazard ranking, it has been determined that further investigation, removal, or remedial action is required. As of June 16, 1993, the Inventory list included no sites within a one-mile radius of the subject property.

The DEQ Environmental Cleanup Division also maintains a Confirmed Release List of sites where confirmed releases of hazardous substances have occurred, but where no further action is required or where no Preliminary Assessment and hazard ranking have yet been completed. As of June 16, 1993, the Confirmed Release List included no sites within a one-mile radius of the subject property.

The DEQ's Environmental Cleanup Site Information (ECSI) database lists known or suspected contaminated sites. This listing includes all sites currently or previously reported by the DEQ as potentially having a release. Listing of a site on the ECSI database does not necessarily indicate that a release has occurred or that the site poses a risk to nearby properties. The ECSI database, as of October 14, 1993, includes five sites within a one-half-mile radius of the subject site:

- Union Pacific Railroad Yard, 2525 N. Larrabee Avenue. The railroad yard adjoins the subject property on the north, east, and south sides, but covers a large area extending one-half mile north and more than a mile south of the subject site. According to information reviewed in DEQ files, this site is listed because of repeated known spills of petroleum during the 1970s. The DEQ data indicates that most of the spills have been cleaned up, but that there is a potential that soil and surface water are contaminated by petroleum. The exact location of the reported spills on the railroad property could not be determined from information in the DEQ file, but the locomotive fueling facilities referenced in the file are believed to be in the southern portion of the railroad yards, approximately one mile south of the subject property.

- Sulzer-Bingham, 2800 NW Front Street, approximately one-half mile southwest of the subject property. This metals fabrication facility has confirmed soil and groundwater contamination by petroleum and solvents, with up to 240 micrograms per liter (μg/L) of solvent reported in the groundwater. Because the Willamette River is located between this site and the subject property, it appears unlikely that the contamination would impact the subject property.

- Industrial Battery Building, 3166 N. Greeley Avenue, approximately one-half mile northeast of the subject property. This site, formerly used for battery manufacturing, has lead-contaminated soil. There is no report in the DEQ file of groundwater impact. Because lead is a relatively immobile contaminant, it is not expected that the lead contamination at this site would affect the subject property.

- Henry Wong Property, N. Prescott Street and Albina Avenue, approximately one-half mile northeast of the subject property. This site is listed because of a complaint received from the DEQ in 1988 alleging the improper disposal of paint solvent on the ground. There was no information in the DEQ file to indicate that any further investigation of the site had occurred. Although the site is located at a potentially upgradient point relative to the subject property, the distance of the site reduces the potential that contamination from the site would reach the subject property.

- DeWitt Construction. The DEQ's ECSI database lists this site at 3125 NW Front Avenue, approximately one-half mile west of the subject property. However, information reviewed in the DEQ file lists the address as 10910 NE Holman Street, several miles to the east of the site. No other information about the site was present in the DEQ file. The presence of the Willamette River between the subject property and the NW Front Avenue address minimizes the risk of contamination reaching the subject property from this site.

6.3 Underground Storage Tank Records

The DEQ's list of permitted UST facilities, as of September 28, 1993, lists no registered underground storage tanks at the subject site address. Three permitted USTs are listed at the Union Pacific Albina Railroad Yard. Three decommissioned USTs are listed at the Lone Star Northwest, Swan Island Plant at 3005 N. River Street.

The DEQ UST Cleanup List for Leaking Underground Storage Tank (LUST) sites, as of October 4, 1993, showed only one record of a LUST within a one-half-mile radius of the subject site. This was the Union Pacific Railroad, Albina Yard, at 2525 N. Larrabee Avenue. According to the DEQ Northwest Region office files, petroleum-contaminated soil was removed after removal of a diesel UST in 1989. No reported impact to groundwater was indicated by the data in the file. The exact location of the LUST on the railroad property could not be determined from information in the DEQ file, but the locomotive

fueling facilities referenced in the file are believed to be in the southern portion of the railroad yards, approximately one mile south of the subject property.

The Portland Bureau of Fire and Emergency Services was contacted regarding UST permits issued for the subject property and adjacent sites. According to the bureau's UST permit file, one permit for installation of a 1,000-gallon UST was issued to the address of 2600 N. River Street in 1961. A permit for removal of two USTs was issued in April 1989. No other permits were on file for addresses of 2000 through 3000 on N. River Street.

6.4 Hazardous Waste Activity

Generators of hazardous waste are required under the federal Resource Conservation and Recovery Act (RCRA) to obtain a generator identification number from the EPA. The EPA's RCRA Notifiers list, dated February 10, 1993, lists the Union Pacific Railroad, Albina Yard, at 2525 N. Larrabee Avenue, as a registered generator of hazardous waste. No other generators are listed within one-half mile of the subject property.

6.5 Hazardous Materials Incidents

The Oregon State Fire Marshal's list of emergency hazardous material responses dating to June 15, 1993 was reviewed. No record of an emergency response for hazardous materials to the subject property or adjacent properties was found. Such records were not maintained by the State Fire Marshal prior to 1987.

6.6 Water Supply and Sewage Disposal

Potable water supply and sewer service for the subject property are provided under contract by the neighboring Union Pacific Railroad, Albina Yard. According to Mr. Chris Stern of the railroad, the Albina Yard is, in turn, connected to City of Portland municipal water and sewer services.

7.0 SUMMARY AND CONCLUSIONS

SEACOR performed a Phase I Environmental Site Assessment of the Columbia Aluminum Corp. Alumina Unloading Facility located at 2600 N. River Street in Portland, Oregon. The assessment consisted of a walk-through inspection of the exterior and interior areas of the property on November 3, 1993. Historical interviews, as well as a search of the pertinent records of local, state, and federal agencies, were conducted.

The subject property is used by Columbia Aluminum to unload alumina from ships, store the alumina, and load alumina into railcars for shipment to Columbia's Goldendale, Washington smelter. The site covers approximately five acres on the east bank of the Willamette River, just south of the Swan Island industrial area. The central portion of the property contains three large alumina storage silos and five other structures. The northern and southern portions of the site are largely undeveloped, gravel-covered property. Two railroad lines run from north to south across the length of the property. The property is adjoined on three sides by the Union Pacific Railroad's Albina Yard.

No evidence of spills or other releases of hazardous materials was observed, and no observable indications of contamination were noted. Two aboveground storage tanks are present on the site for storage of diesel fuel and waste oil. Relatively small quantities of various lubricants and other hazardous materials are also stored on the site.

No evidence of currently existing underground storage tanks was identified found on the site. Two 1,000-gallon USTs were removed from the site in 1989. Limited laboratory testing data and information from interviews with the general foreman of the facility indicate that no petroleum concentrations exceeding typical DEQ cleanup requirements were present in soil beneath the tanks. Two other USTs, one associated with a previous alumina handling facility and one associated with a former grain handling facility, were removed from the site in 1982. The general foreman of the facility reported that no evidence of contamination was observed in the tank pits at the time of removal. Two other individuals who formerly worked at the facility corroborated these reports. No record of soil sampling is available.

Review of historical site use data indicates that the current alumina handling facility was constructed in 1982 to replace an older facility located on the northern portion of the property since 1957. A grain handling facility and a large warehouse structure occupied the southern portion of the site until the mid 1960s.

A review of local, state, and federal environmental agency records indicated the presence of several known or suspected contaminated properties within one-half mile of the subject property. DEQ records indicate that leaking USTs have been removed from the adjoining railroad yard facility, and that repeated spills of petroleum from diesel locomotive fueling and associated activities have occurred in the railroad yard. However, limited information available in the DEQ files indicates that the locations of the USTs and spills have been in the southern portion of the railroad yard, approximately one mile south of the subject property. Because of the distance, contamination at these locations would not be expected to affect the subject property. Other DEQ-listed sites are one-half mile or more distant, and also appear to pose a relatively low risk of impact to the subject property.

The results of this investigation represent a review of current conditions, based on available information, as described above. The scope and limitations of the Phase I Environmental Site Assessment is consistent with the guidelines published in ASTM E1527-93, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Based on this investigation, the subject property appeared to be well maintained and did not exhibit observable indicators of environmental impairment. The overall risk of significant environmental contamination at the subject site appears to be primarily related to two factors:

- The general industrial nature of the property and adjoining railroad yard for more than 60 years represents a potential source for environmental contamination of the site. However, no visible indicators of such contamination were observed, and available records of environmental agencies do not document any record of known contamination concerns on or adjacent to the site.

- The former presence of four USTs on the subject property represent potential sources of subsurface petroleum contamination. Limited data regarding the removal of two of the USTs in 1989 indicates that significant contamination of soil directly beneath the tanks was not present, and an interview with the general foreman of the facility who observed the tank removals supports this conclusion. Although no written documentation is available about the removal of the other two USTs in 1982, three individuals who worked at the facility at the time reported that they recalled no evidence of leaks or contamination in the tank excavations.

8.0 LIMITATIONS

The conclusions and recommendations in this report/assessment are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location, and are subject to the following inherent limitations:

1. SEACOR derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals having information about the site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration at the site, analysis of the data, and reevaluation of the findings, observations, and conclusions in the report.

2. The data reported and the findings, observations, and conclusions expressed in the report are limited by the scope of work. The scope of work was defined by the request of the client, the time and budgetary constraints imposed by the client, and availability of access to the site.

3. Because of the limitations stated above, the findings, observations, and conclusions expressed by SEACOR in this report are not, nor should not be, considered an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state, or local law or regulation.

4. No warranty or guarantee, whether express or implied, is made with respect to the data reported of findings, observations, and conclusions that are based solely upon site conditions in existence at the time of investigation.

5. SEACOR Phase I Environmental Assessment Reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of federal, state, or local government agencies. Any use of the Phase I report constitutes acceptance of the limits of SEACOR's liability. SEACOR's liability extends only to its client and not to any other parties who may obtain the Phase I report. Issues raised by the report should be reviewed by appropriate legal counsel.

6. The conclusions and recommendations presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such. An evaluation of subsurface soil and groundwater conditions was not performed as part of this investigation. No sampling or chemical analyses were performed or assessment of asbestos-containing materials was completed as part of this study unless explicitly stated.

7. This report is based, in part, on unverified information supplied to SEACOR by third-party sources. While efforts have been made to substantiate this third-party information, SEACOR cannot guarantee its completeness or accuracy.

LIST OF REFERENCES

Aerial Photographs:

Source: Northern Light Studio, Portland, Oregon.

Year:	Photo Identification:
1992	PO92 10-18
1990	PO90 10-17
1988	PO88 10-17
1986	PO86 10-16
1984	PO84 10-17
1980	PO80 10-30
1977	PO77 10-18
1973	PO73 10-22
1971	PO71 10-23
1968	MCW 10-31
1964	MET 11-50
1961	CM 9-54
1956	OHP 23-15
1939	No identification number

Maps Used: US Geological Survey, Portland Quadrangle, 7.5 Minute Series (topographic)

Regulatory File Source:

EPA National Priority List, October 13, 1993.

EPA CERCLIS inventory (zip codes 97209, 97210, 97217, 97227), October 8, 1993.

EPA RCRA Notifiers List (zip code 97227), February 10, 1993.

DEQ Inventory of Hazardous Substance Sites, June 16, 1993.

DEQ Confirmed Release List, June 16, 1993.

DEQ Environmental Cleanup Site Information database, October 14, 1993.

Oregon State Fire Marshal's Hazardous Material Emergency Incident Report, June 15, 1993.

DEQ Permitted Underground Storage Tank Facilities List (zip code 97227), September 28, 1993.

DEQ UST Cleanup List (zip codes 97217 and 97227), October 4, 1993.

Interview Record:

Name:	Relationship:
Larry Fry	Jeddeloh Hays, Inc., (223-7799), former employee of General Ore (Martin-Marietta), December 2, 1993.
Roger Gardner	Engineer (635-9461), former employee of Swan-Wooster Engineering, December 2, 1993.
Donald R. Leffler	Columbia Aluminum, General Foreman, Portland Alumina Unloading Facility, November 3, 1993.
Chris Stern	Union Pacific Railroad (249-2474) (via Jodie Hueske of Columbia Aluminum), November 10, 1993.

APPENDIX A
SCOPE OF SERVICES FOR PHASE I ASSESSMENT

Phase I Environmental Site Assessment Report
Columbia Aluminum Corp. Alumina Unloading Facility
SEACOR PN: F0132-001-01
December 7, 1993

ATTACHMENT A

PHASE I ENVIRONMENTAL ASSESSMENT SCOPE OF SERVICES

I. HISTORICAL DATA

- Ownership records will be reviewed to identify past owners of the property.
- A check of past building permits and/or plumbing permits issued to the subject property will be conducted to identify past uses of the site.
- Available persons knowledgeable about the property will be interviewed.
- Aerial photos will be reviewed for as far back as they are available, or 40 years whichever is less.
- Reverse index directories listing previous site occupants will be reviewed, if available.

II. PHYSICAL INSPECTION—PROPERTY

SEACOR will perform a walk-through inspection of the property to identify visual or olfactory evidence of potential contamination. Specific observations will be made of the following:

- Topography, ground cover
- Swales, Waterways
- Roads, Railroad Tracks
- Other Landmarks
- Storage Areas, Waste Disposal Areas
- Containers (e.g., drums, tanks)
- Pits, Ponds, Lagoons
- Surface Staining of Soil, Pavement, Walls
- Stressed Vegetation
- Sources of Surface Runon and Runoff
- Drainage Pipes and Drainage Ditches
- Presence of Wells
- Evidence of Underground Voids of Structures
- Evidence of Air Emission Fallout

III. ADJACENT PROPERTIES

The general condition of adjacent properties, as can be seen from public right-of-ways and the subject property, will be observed to identify activities or conditions which have the potential of causing environmental impairment of the subject property. Specific observations will be made of the following:

- Suspect Activities (i.e., activities whose nature commonly requires the use, storage or disposal of hazardous materials or hazardous waste;

- Storage Areas, Waste Disposal Areas
- Containers (e.g., drums, tanks)
- Surface Staining of Soil, Pavement, Walls
- Stressed Vegetation

IV. PHYSICAL INSPECTION—BUILDINGS & STRUCTURES

SEACOR will perform a walk-through inspection of buildings and structures on the subject property to identify visual or olfactory evidence of potential contamination. Specific observations will be made of the following:

- Size, use and general condition of all buildings and structures on the property
- Storage Areas, Waste Disposal Areas
- Processing Equipment
- Stained or cracked floor surfaces, stained walls
- Presence of floor drains, sinks, sumps
- Presence of electrical or lighting equipment potentially containing PCB's

V. LIMITED ASSESSMENT FOR EXPOSED POTENTIALLY FRIABLE ASBESTOS

This limited asbestos assessment consists of visual observation of structural materials for exposed potentially friable asbestos. The assessment is limited to areas which are readily accessible and visible. A limited number of samples will be collected of materials which visually appear to potentially contain exposed friable asbestos. These samples will be analyzed by an EPA-accredited laboratory, using Polarizing Light Microscopy with Dispersion Staining to determine asbestos content. This limited asbestos assessment can be a useful tool in evaluating the likelihood that exposed friable asbestos is present, or the general extent of asbestos containing materials. However, **this limited asbestos assessment does not constitute a comprehensive survey for the presence of asbestos in the structure.**

VI. MAGNETOMETER SURVEY

Selected accessible exterior areas of the property will be scanned with a portable, hand held magnetometer. The magnetometer scan serves to indicate the presence of buried metal (ferromagnetic) debris which may indicate the presence of underground storage tanks or buried drums. Areas to be scanned will be selected based on the probability that USTs are present, or that dumping or other waste storage or disposal has occurred.

VII. POLYCHLORINATED BIPHENYLS (PCBs)

An evaluation will be made of any visible transformers or other electrical equipment on or adjacent to the property. Specific observations will include the owner of the equipment and whether or not it is labeled as to PCB content. Local electric utility companies will be contacted regarding the PCB content of utility-owned transformers.

VIII. ENVIRONMENTAL AGENCY RECORDS REVIEW

A check of environmental regulatory agency records and other relevant records will be conducted for evidence of environmental concerns related to the subject property. Agencies contacted will generally include the US Environmental Protection Agency (EPA), state environmental agency, local fire department, state fire marshall, and local police. These record reviews will specifically look for the following:

- Records of spills or other incidents involving hazardous materials on the subject property or on adjacent properties;
- Records of current, past or pending investigations or enforcement actions by environmental agencies on the subject property or on adjacent properties;
- The presence of any site on the EPA's National Priority List of hazardous waste (Superfund) sites within a one-mile radius of the subject property;
- The presence of any site on the EPA's CERCLIS list of potential hazardous waste sites under investigation within a one-half mile radius of the subject property;
- The presence of any site on state or local data base listings of potential hazardous waste sites under investigation within a one-half mile radius of the subject property;
- A limited review of files related to such NPL, CERCLIS or state-listed sites as to potential impact on the subject property.
- Records of Underground Storage Tanks registered on the property.
- Records of Leaking Underground Storage Tanks on the property or in the immediate vicinity.

IX. FINAL REPORT

SEACOR will prepare a report describing the investigatory activities and the information collected, and providing conclusions and recommendations for any further investigation or remediation. This report will include drawings of the site showing significant features and photographs illustrating observations of the site.

CONDITIONS AND LIMITATIONS

The proposed scope, schedule and fees are subject to the following conditions and limitations:

- Client to provide legal description, plat map and generalized site plan of property to SEACOR prior to start of project.

- Client to arrange access to property for SEACOR inspectors, including access to all work spaces, storage areas, maintenance areas and other areas of the structures.

- The conclusions presented in the Phase I report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. The conclusions presented are based on the assumption that site conditions do not deviate from those observed during the study and as described in the report.

- The site assessment will be based on conditions existing on the date of the inspection. Past conditions at the site will be evaluated based on a review of reasonably ascertainable records and interviews which can provide qualitative information relative to prior conditions.

- A Phase I Environmental Assessment Report is not a definitive study of contamination at the site and should not be interpreted as such. An evaluation of subsurface soil and groundwater conditions will not be performed as part of the Phase I investigation unless explicitly included as an additional task in the scope of services.

- Achieving a CERCLA "due diligence" assessment of environmental issues is a combination of technical, legal and other considerations. Review of the proposed Phase I scope of services by legal counsel or other interested parties may be appropriate. If requested, SEACOR will assist the client and the client's legal counsel on any proposed modifications or clarifications to the proposed scope of services.

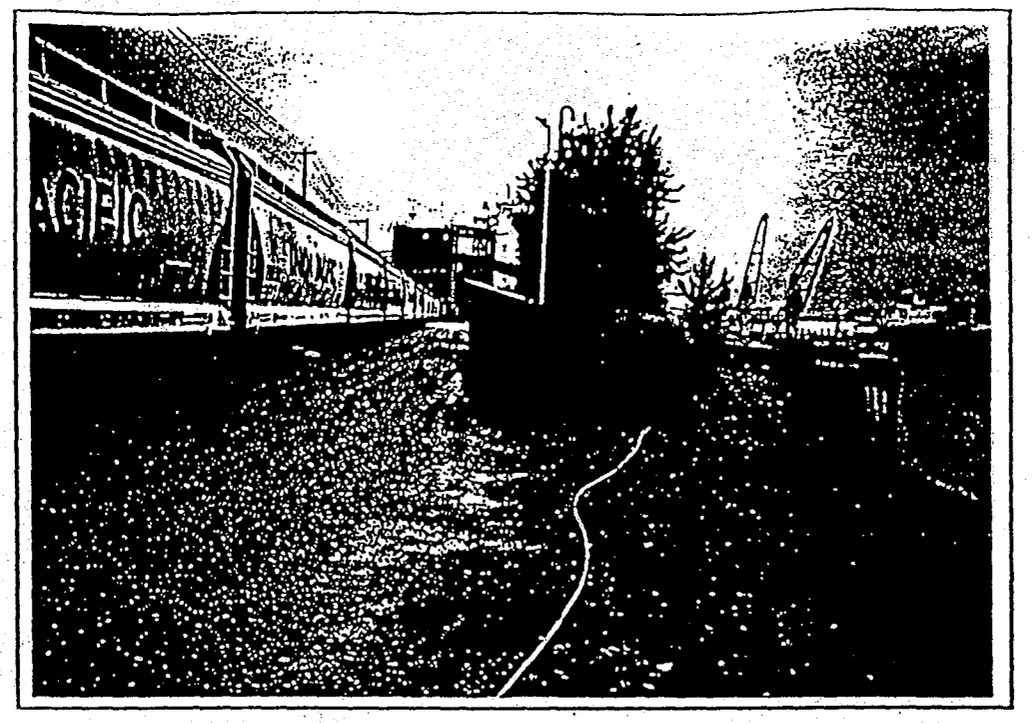
- No assessment of asbestos-containing materials will be completed as part of this study except as explicitly stated in the scope of services.

- The Phase I report will be based, in part, on unverified information supplied to SEACOR by third-party sources. While efforts will be made to substantiate this third-party information, SEACOR does not guarantee its completeness or accuracy.

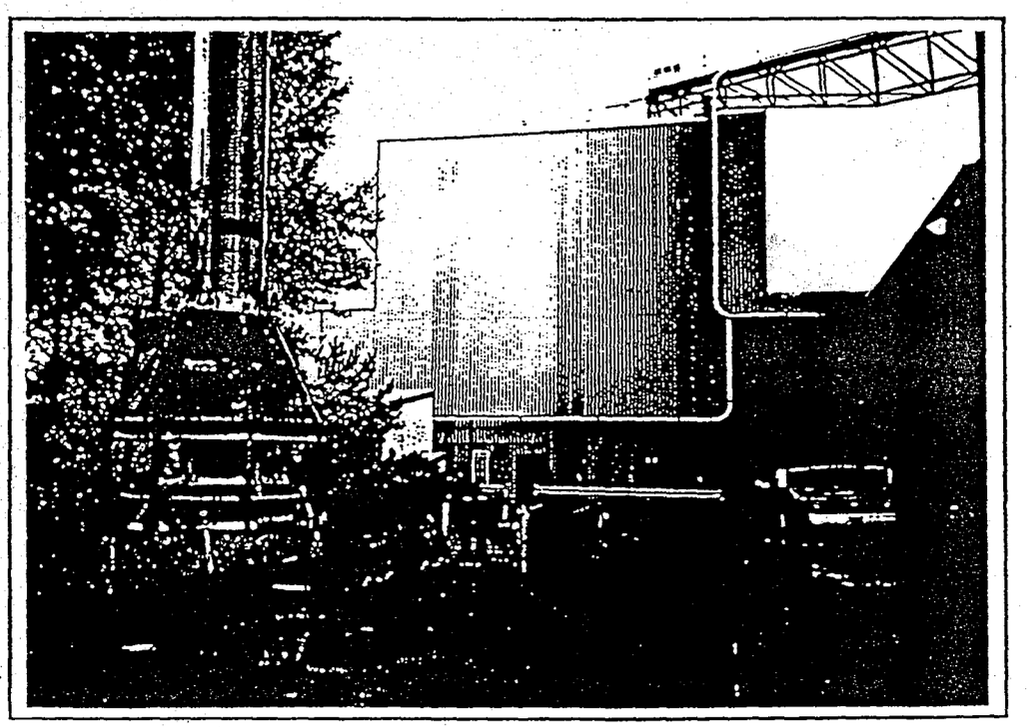
- The Phase I report presents professional opinions and findings of a scientific and technical nature. While attempts will be made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of or compliance with environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies. Issues raised by the Phase I report should be reviewed with appropriate legal counsel.

APPENDIX B
PHOTOGRAPHS OF SITE

Phase I Environmental Site Assessment Report
Columbia Aluminum Corp. Alumina Unloading Facility
SEACOR PN: F0132-001-01
December 7, 1993



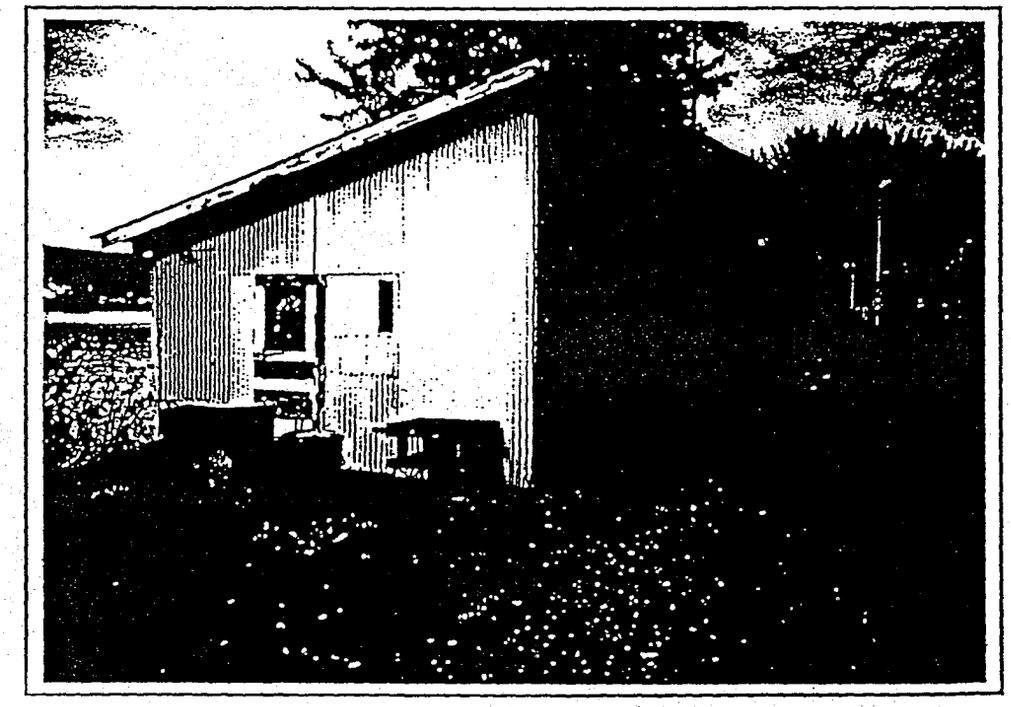
1. View South from North Property Boundary



2. View from Pier Toward Car Load-Out Building

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-1
	JOB: F0132-001-01 DRAWN: KPW DATE: 10/10/93 APPROVED: RRS DATE: 11-11-93		

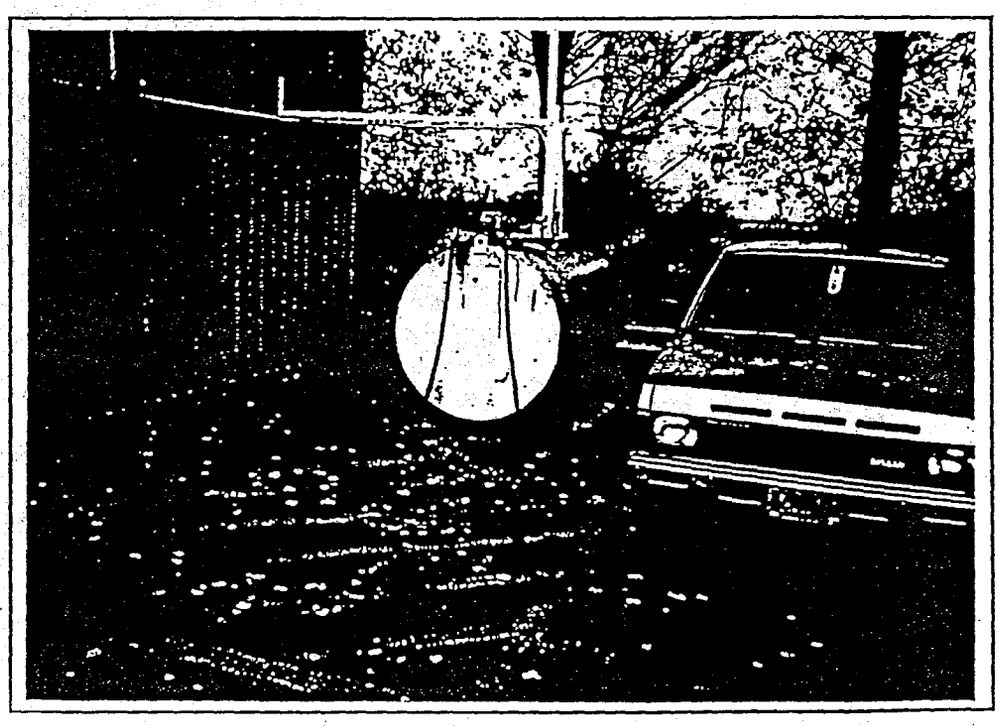
3. Pneumatic Equipment Near Unloader and Silo 1



4. Hazardous Materials Storage Shed

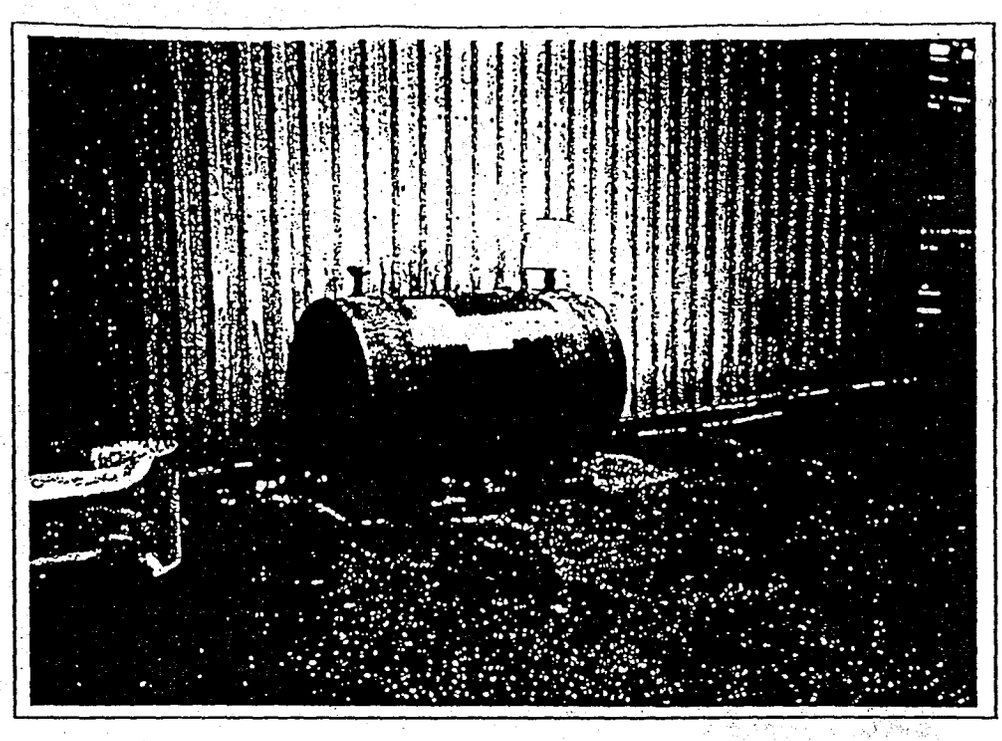
SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-2
	JOB: F0132-001-01 DRAWN: KPW DATE: 11/10/93 APPROVED: RRS DATE: 11-11-93		

5. Hazardous Materials Storage Shed Interior

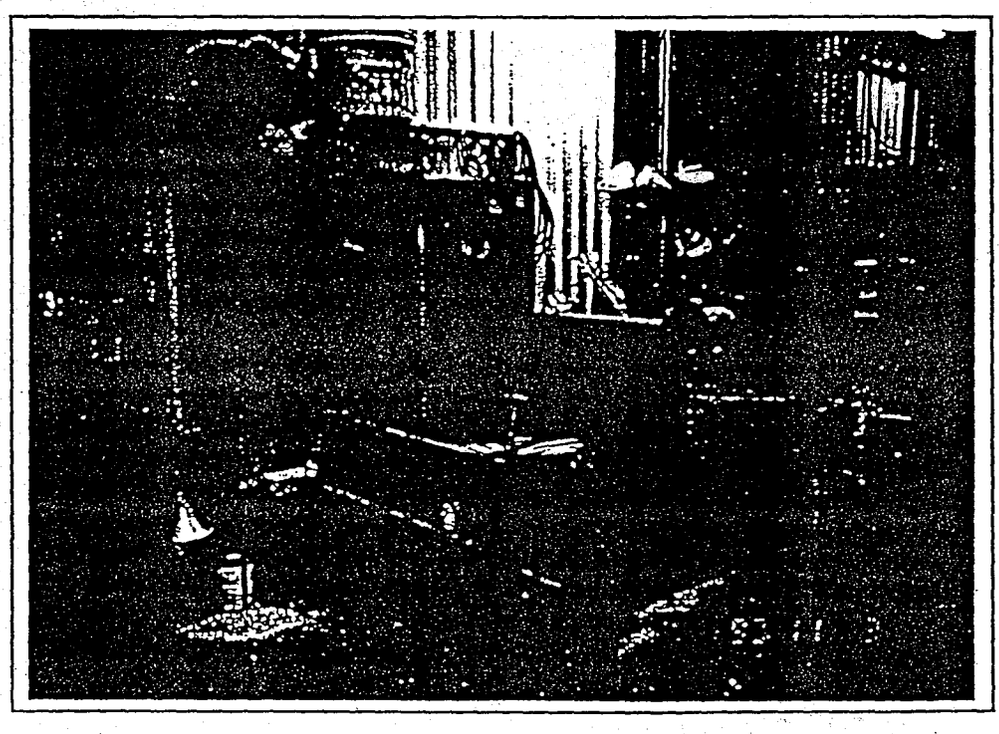


6. Diesel Storage Tank

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-3
	JOB: F0132-001-01 DRAWN: KPW DATE: 11/10/93	APPROVED: RRf DATE: 11-11-93	



7. Waste Oil Storage Tank



8. Maintenance Shop Interior

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-4
	JOB: F0132-001-01 DRAWN: KPW DATE: 10/10/93	APPROVED: RRS DATE: 11-11-93	

PRELIMINARY ASSESSMENT FOR THE GOLDENDALE ALUMINA UNLOADING FACILITY

PREPARED BY – CH2M HILL

MARCH 2000

CH2MHILL TRANSMITTAL

To: Stoel Rives, LLP

900 SW Fifth Avenue, Suite 2300
Portland, OR 97204-1268

From: Pauline Sullivan for Paul LaFrance, CH2M HILL

Attn: Louis Ferreira

Date: March 15, 2000

Re: Preliminary Assessment for the Goldendale Alumina Unloading Facility

We Are Sending You:

☑ Attached

Under separate cover via

Shop Drawings

☑ Documents

Tracings

Prints

Specifications

Catalogs

Copy of letter

Other:

Quantity	Description
1	*Preliminary Assessment for the Goldendale Alumina Unloading Facility.* Revised version sent to DEQ March 15, 2000

If material received is not as listed, please notify us at once.

Copy To:
Tim Furlong
Don Leffler
Gerald Miller
Shealia Murphy
Lowell Palmer
Damon Smith
Wayne Wooster
Tim Hemstreet
Brad Hermanson

Preliminary Assessment for the Goldendale Alumina Unloading Facility

Prepared for

Goldendale Aluminum Company

March 2000

Prepared by

CH2MHILL

PDX/003671158.DOC

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SECTION 1

Introduction

SECTION 1

Introduction

1.1 Purpose

The purpose of this preliminary assessment (PA) is to develop information to determine whether the Goldendale Aluminum Company (GAC) Alumina Unloading Facility has released hazardous substances to the environment and poses a significant threat to human health and/or the environment. The PA is based on available site data, previous investigations, file searches, data obtained from sources of public record, and interviews with site employees.

This PA was performed in response to a request by the Oregon Department of Environmental Quality (DEQ) that GAC conduct a PA to determine whether a specific hazardous substance release or past operation at the site can be linked to contamination of adjacent river sediments. DEQ requested the PA as part of a strategy recommendation (SR) completed for the site (DEQ ECSI No. 2440, 1999).

1.2 Administrative Requirements

Under state law (ORS 465.245), DEQ requires or conducts PAs at sites where hazardous substances may pose a significant threat to human health or the environment. Compared to a screening, a PA is a more formal and detailed investigation, designed to determine whether a site is releasing, has released, or could release hazardous substances to the environment, and whether a response action is required.

As specified in OAR 340-122-072, available data about a site and its immediate vicinity are compiled in the PA report. These data include site history and operations, information about potential sources of contamination, pathways for migration of contaminants, and receptors or targets potentially affected by the contamination. The PA report summarizes data gathered about the site and makes recommendations for further action that are as specific as possible, given the facts available. While the PA identifies whether a site could endanger human health or the environment, it is not intended to fully characterize site contamination or to quantify the magnitude of site risks.

A PA with sampling is considered necessary to determine if a release has occurred or will occur that could endanger human health or the environment.

As will be discussed in this report, sediment sampling has already been performed at the GAC site. The sampling was performed as part of the evaluation needed to determine acceptable disposal locations for sediments dredged during GAC maintenance activities. The sediment analytical results passed Dredged Material Evaluation Framework (DMEF) conservative risk criteria allowing uncontrolled open water disposal of the sediments. However, the concentrations of light polycyclic aromatic hydrocarbons (LPAHs) and

dibenzofuran exceeded the DEQ apparent Portland Harbor sediment baseline maximum values. As a result, DEQ has determined that a PA with sampling is required for the site.

This report provides the general information required by DEQ for PA reports. However, the report will specifically focus on evaluating the likely source of LPAHs and dibenzofuran, which have necessitated this analysis.

1.3 Report Content

This report is organized into the following sections:

- **Section 1: Introduction.** This section describes the purpose and administrative requirements of the PA Report.
- **Section 2: Background Information.** This section contains a description of the site as well as background information on ownership and operational history. The regulatory history at the site is also discussed, along with the results from previous site investigations.
- **Section 3: Source Areas and Waste Characteristics.** This section identifies potential sources on and off the GAC site and provides information to support further evaluation of their plausibility as sources to sediments near the site. A summary figure is presented with sources and transport mechanisms. The figure is used to summarize the sources and their initial screening as potential impacts to sediments.
- **Section 4: Pathways of Exposure—Groundwater.** The potential for groundwater to be impacted and carry constituents from the site to sediments is evaluated in this section.
- **Section 5: Pathways of Exposure—Air.** In this section, the potential for air releases to occur at the site and the pathway to sediments is briefly discussed.
- **Section 6: Pathways of Exposure—Direct Contact.** The potential for direct contact with material at the site is evaluated in this section.
- **Section 7: Pathways of Exposure—Surface Water and Sediment.** This section summarizes the surface water pathway and potential impacts to sediments from the pathway. The primary issue of concern at the site being addressed by this PA Report is impact on sediments. This section contains information on the river hydrology near the site, which is complicated by localized currents, and also provides information on the constituents detected in the sediments and their potential source.
- **Section 8: Conclusions and Recommendations.** The conclusions from the analysis provided in the previous sections is presented.
- **Section 9: References.** A number of references are cited that were used to prepare the PA Report.

Several appendixes are also included to provide additional information and are referenced throughout the main body of the report. These appendixes include the following:

- **Appendix A: Historical Aerial Photographs.** This appendix consists of a series of seven aerial photographs showing the history of the site. The photographs range in timeframe from 1936 to 1995.
- **Appendix B: Sediment Characterization Investigation.** This appendix provides the results of the sediment investigation that was performed to determine the handling requirements for sediment dredged as part of the maintenance dredging.
- **Appendix C: Phase I Environmental Site Assessment Report.** A Phase I site assessment was performed in 1993 to assist Columbia Aluminum managers in determining if the site presented any potential for significant contamination release. The results are included to provide details on the site and conditions of equipment and material handling.
- **Appendix D: Material Safety Data Sheet.** Material safety data sheets for alumina and electrode binder pitch, a potential source of PAHs to the sediments, are included. These data sheets were used to evaluate the potential for pitch to contribute to the LPAHs found during sediment sampling.
- **Appendix E: Spill Report, Sample Locations, and Additional Cleanup Information.** A spill report is presented for the Union Pacific Railroad (UPRR) spill discussed in the main body of this report.
- **Appendix F: DEQ Strategy Recommendation.** DEQ's strategy recommendation for the site is included for reference.

SECTION 2

Background Information

SECTION 2

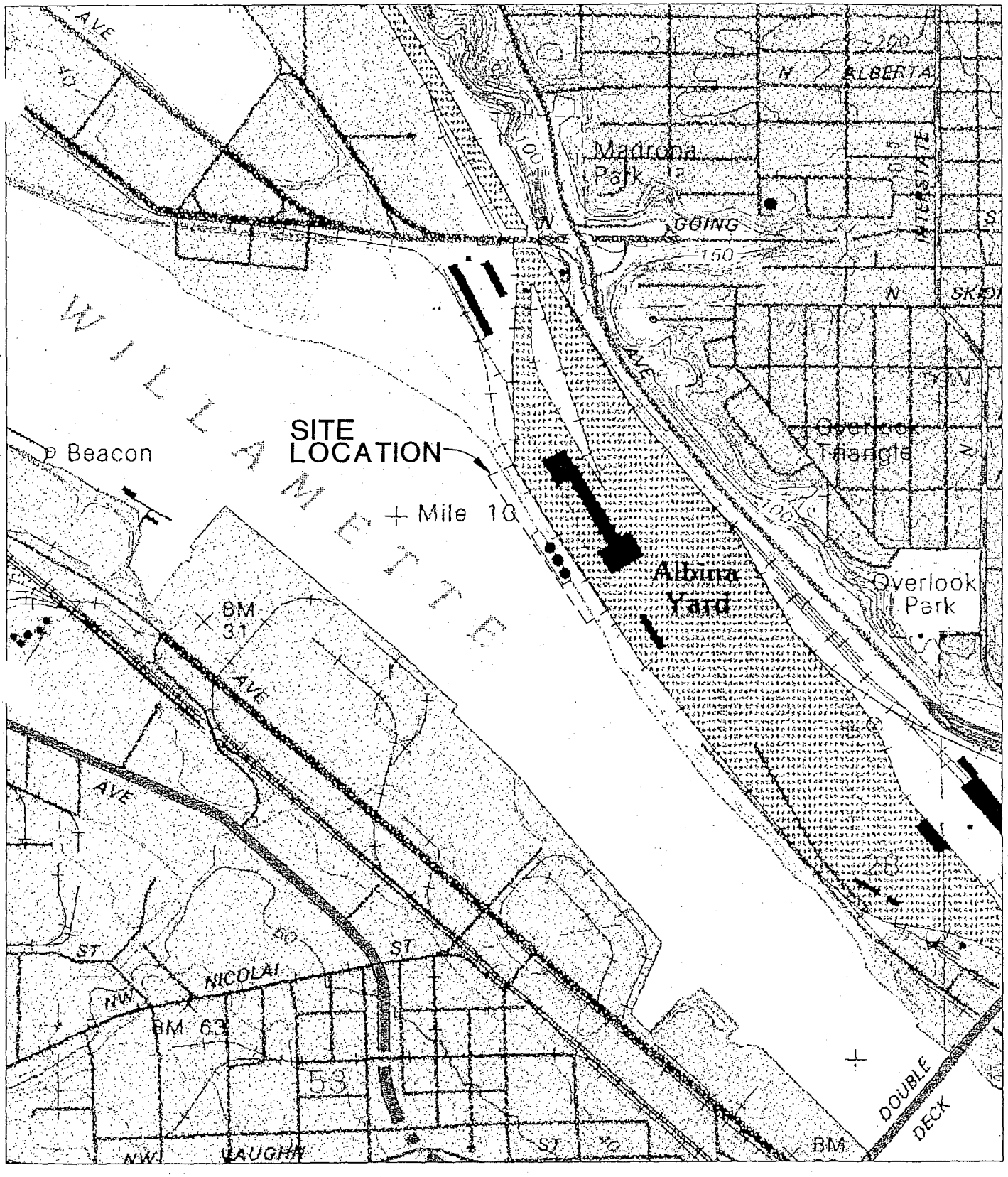
Background Information

2.1 Site Description

The subject site is located along the east bank of the Willamette River at about River Mile 10, approximately one-half mile upstream from the southern extent of the Portland Harbor Sediment study area. GAC operates an alumina unloading facility at the site. Alumina is unloaded from ships, stored in large silos, and transferred to railcars for shipment to the GAC smelter in Goldendale, Washington. Electrode binder pitch was unloaded from 1982 to 1988, and once in 1992. Alumina and electrode binder pitch are raw materials used in the aluminum reduction process at the Goldendale smelter. The process involves electro-chemically reducing high purity alumina ore to aluminum in reduction cells. The reduction cells are composed of coke and a small amount of pitch. Pitch is used to hold the coke together in blocks which are used to conduct the current necessary for the reaction to take place. The site is located within the City of Portland, in Multnomah County, and has a physical address of 2600 N. River Street, Portland, Oregon. A site location map is shown in Figure 2-1.

The site is approximately 8 acres in size and the site terrain is relatively flat. The Willamette River borders the western edge of the site. The UPRR Albina rail yard surrounds the GAC facility and lies to the north, east, and south. The GAC facility consists of a shop and administration building, an unloader building and air conveyance equipment, a garage, a storage building, three alumina storage silos, a railcar load-out building and rail lines, and a dock consisting of a concrete pier and concrete dolphins for ship moorage. The northern and central portions of the site are paved, while the area to the south is gravel-covered. The site is clean and well maintained. A facility map is shown in Figure 2-2.

Although the general movement of the river in the immediate vicinity of the facility is toward the north, there is a localized eddy condition that is relatively important in understanding potential impacts to sediments near the site. An expansion in the width of the Willamette River near the site results in a river eddy that allows water to flow upriver (south) along the shoreline immediately adjacent to the facility and the GAC dock. GAC staff indicate that material floating downriver within a distance of one-quarter to one-third the width of the river is captured by the eddy. Due to the eddy, debris often collects under the GAC dock area and along the shore. If upstream material and sediment is caught in this eddy, it will be carried to the vicinity of the GAC dock. This issue will be examined in greater detail later in the report as potential sources to sediments in the GAC dock area are discussed.



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SCALE IN FEET

Figure 2-1
SITE LOCATION
GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

CH2MHILL

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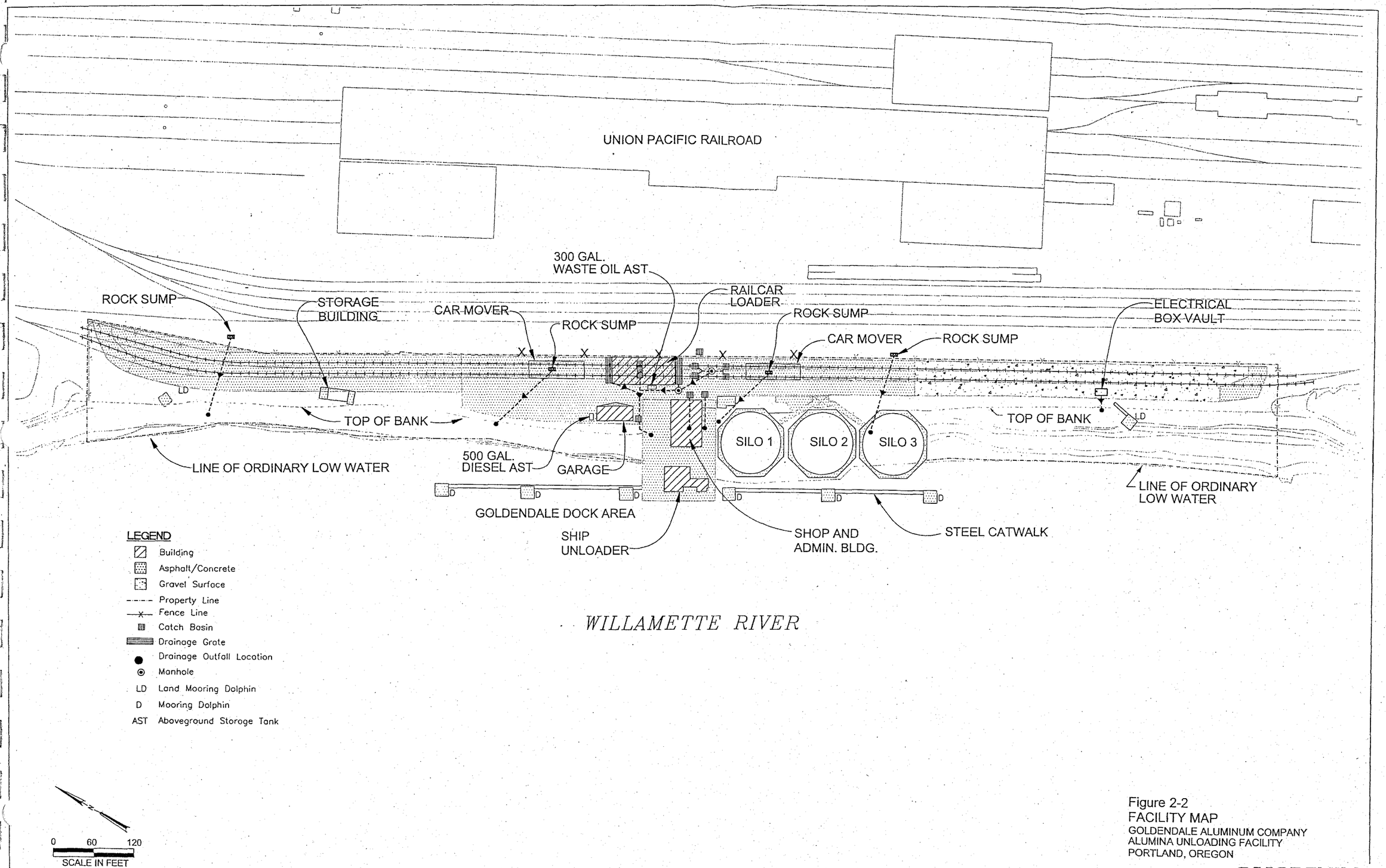

Figure 2-2
FACILITY MAP
GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

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2.2 Site History

2.2.1 Ownership and Operational History

Aerial photographs (included in Appendix A as Figures A-1 through A-7) indicate that the surrounding UPRR rail yard has been present since at least 1936 and that a grain shipment facility occupied the southern portion of the property as early as 1936 as well. An additional grain shipment facility was constructed north of the property sometime between 1936 and 1948. The northern portion of the property was undeveloped prior to 1957, when aerial photographs indicate that fill material was placed north of the grain shipment facility to facilitate site development. The grain shipment facility located on the southern portion of the property was destroyed by fire in 1966.

Records indicate that the site was owned by Harvey Aluminum from 1957 to 1971. Martin Marietta Aluminum is identified as the owner from 1971 to 1984. Commonwealth Aluminum owned the property from 1984 to 1987. Columbia Aluminum Corporation (CAC) purchased the site from Commonwealth Aluminum and owned it until May 1996 when it changed its name to Goldendale Aluminum Company. GAC is the current owner of the facility.

2.2.2 Operating History

The operating history is based on a review of pertinent files and interviews with past facility operators. The operating history is discussed below, beginning with the earliest alumina unloading operator.

Pre-Industrial Development (Prior to 1957)

Aerial photographs indicate that prior to development as an unloading facility by Harvey Aluminum, the site was an undeveloped parcel. There is no evidence from aerial photographs or GAC records that there was industrial development at the site prior to construction of the original facility by Harvey Aluminum.

Harvey Aluminum (1957—1971)

In 1957, Harvey Aluminum constructed an alumina vacuum-type ship unloader capable of unloading 100 tons/hour. Although records indicate that General Ore Inc. owned the site from 1965 to 1982, Harvey Aluminum is believed to have operated the facility from 1957 to 1971. This original facility was located to the north of the current facility near the location of the current storage building (see Figure 2-2). The unloading facility is shown clearly in the past aerial photographs included in Appendix A. Also shown in these photographs are grain shipment facilities to the north and south. The grain shipment facility to the north was located approximately ¼-mile to the north of the current facility's northern border. Records do not indicate the owner of the grain shipment facility to the north. The grain shipment facility to the south, formerly owned by the Kerr Grain Corporation, occupied what is now the southern portion of the GAC property. This grain shipment facility was destroyed by fire in 1966.

Martin Marietta Aluminum (1971—1984)

In 1971, Martin Marietta acquired the stock of Harvey Aluminum and operated the facility from 1971 to 1984. In 1982, Martin Marietta constructed the current facility, which has a significantly larger capacity than the old facility. The current facility is able to handle 600 tons of alumina per hour. From 1982 to 1984, approximately five shiploads per year of electrode binder pitch (also called coal tar pitch) were believed to have been unloaded at the facility. Before 1982, pitch was not unloaded at the original facility. The original facility was located to the north of the current facility near the location of the current storage building.

Prior to construction of the new facility, a dredging permit was obtained that authorized the removal of up to 24,000 cubic yards of material annually and placement of 7,500 cubic yards of riprap along the property shoreline. A total of 64,000 cubic yards of sediment was permitted to be removed during construction of the new facility, although the actual amount of material removed is unknown. The permit stated that material could not be removed to a depth greater than -40 feet Columbia River Datum. The permit also specified that only clean, erosion-resistant rock from an upland source could be used as riprap. The permit states that the dredged material was disposed of at the Alder Creek Lumber Company on Sauvie Island upland of the existing flood control structure.

Commonwealth Aluminum (1984—1987)

On September 30, 1984, Commonwealth Aluminum purchased the site as part of an asset sale from Martin Marietta and owned the facility until July 13, 1987. During this time period, alumina and electrode binder pitch were unloaded at the facility. Records indicate that there were six ships of pitch unloaded at the facility in 1985 and three ships in 1986. The facility was not operated during the latter part of Commonwealth's ownership.

Columbia (Goldendale) Aluminum (1987—present)

Columbia Aluminum Corporation acquired the site as part of an asset sale from Commonwealth Aluminum in 1987 and operated the facility until 1996, when it changed its name to the Goldendale Aluminum Company. GAC currently unloads alumina from ships, stores the alumina in silos, and loads alumina into railcars for shipment to their smelter in Goldendale, Washington. Approximately 13 ships of alumina are unloaded at the facility each year. The three storage silos have a total capacity of 46,000 tons. Five ships of electrode binder pitch were unloaded at the facility in 1988. Since that time, only one ship containing pitch was unloaded at the facility in December 1992. No spillage of pitch was observed during the unloading process.

Throughout its history, the facility has used various lubricants for its loading and unloading equipment, as well as small quantities of paint, hydraulic oil, and solvent for parts cleaning. Spencer Environmental is regularly contracted to remove waste lubricating oils and hydraulic oils for recycling. Safety Kleen maintains a parts washer in the maintenance shop and removes spent solvents as necessary.

2.3 Regulatory History

2.3.1 Permits

Air Quality Permits

An air contaminant discharge permit (Permit No. 26-3069) was originally issued to the facility, then owned by Martin Marietta Aluminum Company, by DEQ in June 1982. The permit was required for emissions of alumina and pitch resulting from pneumatic and mechanical material loading and unloading equipment. The permit was transferred to CAC in June 1985 and was renewed for a five-year period in June 1986.

A Notice of Noncompliance was issued on June 30, 1988 for leaks around the transport pipe seams of the pneumatic unloading system. The problem was corrected and this was confirmed by a follow-up DEQ inspection of the facility on December 12, 1988.

The permit was renewed for another five-year period in April 1991. A Notice of Noncompliance was issued on October 13, 1992 because the throughput of alumina at the facility exceeded the permitted level. This issue was addressed by modifying the permit to reflect the increase in alumina tonnage handled at the facility.

Due to a reduction in the tonnage of alumina handled in 1994, emissions from the facility were calculated to be below the permit threshold of 10 tons per year. Because emissions from the facility were no longer required to be permitted, GAC requested cancellation of its air permit on November 10, 1994. DEQ agreed that air emissions no longer required a permit and the permit was cancelled on December 2, 1994.

Water Quality Permits

The facility was originally issued a National Pollutant Discharge Elimination System (NPDES) General Permit 1200Z (File No. 107213) in February 1993. The permit was renewed in January 1998 and has an expiration date of June 30, 2002. The permit requires the facility to maintain a storm water pollution control plan and to sample storm water outfalls. The results of the storm water sampling are submitted to DEQ in annual reports. Water quality parameters for which monitoring is required include total suspended solids (TSS), oil and grease, field pH, temperature, copper, lead, and zinc.

Dredging Permits

A dredging permit was initially issued to Martin Marietta Aluminum by the U.S. Army Corps of Engineers (COE) and Oregon Division of State Lands (DSL) in 1981. This permit (DSL No. RP-2987, COE # 071-OYA-1-003156) authorized dredging to be performed to facilitate construction of the deep-water dock at the facility. Sediments at the dock were dredged to a depth of 40 feet below the mean low water level.

In September 1991, the COE and DSL issued GAC a permit (DSL No. RP-5785, COE #071-0YA-009158) allowing the company to perform maintenance dredging to restore the sediment depth at its dock to the original design depth of 40 feet below mean low water level. The dredging was performed in 1991.

In September 1999, another maintenance dredging permit was issued to GAC. This permit (DSL No. ML-10587, COE No. 97-00114) authorizes GAC to dredge sediment to a depth of 38 feet below mean low water level. Dredging authorized by permit has not yet been performed. The permit expires on August 31, 2004.

2.3.2 Past Inspections

Past known inspections at the facility are limited to compliance inspections regarding the facility's air contaminant discharge permit. Inspection dates and the facility's compliance status indicated by DEQ are listed below.

Date	Compliance Status
September 18, 1986	In compliance
May 18, 1987	The plant was not operating
June 30, 1988	Leaks around the transport pipe seams
December 12, 1988	A follow-up inspection—in compliance
October 27, 1989	In compliance

2.4 Previous Investigations

2.4.1 Site Development

Swan Wooster Engineering and Dames and Moore conducted site design and site geotechnical work at the facility in the 1970s when the current facility was in the planning stages. These reports are not available, though it is not believed that the work included an analysis of the environmental condition of the site. During site construction work in 1982, two underground storage tanks (USTs) were removed from the site. One was associated with the previous alumina handling facility located north of the current site and the other was associated with the former grain shipment facility to the south. According to the interviews with facility employees conducted as part of the 1993 Phase I Environmental Site Assessment (ESA), no evidence of contamination was observed in the tank pits at the time of the UST removals. No soil sampling results are available for these USTs. Both USTs were used for gasoline storage.

Underground Storage Tank Removal—1989

Two 1,000-gallon USTs were removed from the facility on April 14, 1989. One of the tanks stored diesel fuel and the other tank stored gasoline. The tanks were used to fuel vehicles and equipment used onsite. A total of seven soil samples were collected from the excavation that contained the two USTs. These samples were submitted for laboratory quantification of total petroleum hydrocarbons by modified EPA Method 418.1. Results obtained ranged from 5.3 mg/kg to 8.4 mg/kg, well below the most stringent current DEQ numeric soil cleanup standards of 40 mg/kg for gasoline and 80 mg/kg for diesel.

Sediment Characterization—1990

Sediment cores were collected along the entire length of the 720-foot docking area adjacent to the site to characterize sediments before they were removed by maintenance dredging

performed at the GAC dock in 1991. The cores were collected March 18, 1990 by Technico and Enviro Services Company. The purpose of the sediment collection effort was to determine if pitch unloaded at the facility was present in sediments near the dock. Sediment cores were advanced approximately 1.5 feet into the sediment at nine locations adjacent to the dock. No samples were collected for laboratory analysis. The sediments obtained from the cores were visually examined. Pitch was not observed in any of the sediments recovered. Small amounts of alumina were noted in some of the sediment cores recovered. The report from this investigation is included in Appendix B.

Phase I Environmental Site Assessment—1993

Science & Engineering Analysis Corporation (SEACOR) conducted a Phase I ESA for the facility in 1993. The ESA consisted of a walk-through inspection of the interior and exterior areas of the property, a review of readily available records of local, state, and federal agencies, historical reviews, interviews, and a review of aerial photographs of the property. No sampling or laboratory analyses were performed.

No evidence of spills or other releases of hazardous materials were observed, and no observable indications of contamination were noted. A search of DEQ files indicated that leaking USTs have been removed from the adjoining Union Pacific Railroad property and that repeated spills of petroleum from diesel locomotive fueling and associated activities have occurred. The DEQ information indicated that the spills and leaking USTs were located in the southern portion of the railroad yard, approximately one mile south of the GAC site. The Phase I ESA is included in Appendix C.

Environmental Compliance Review—1996

An environmental compliance review for the facility was conducted by Dames & Moore in 1996. The review was conducted due to the name change from CAC to GAC that occurred in 1996. The review included the development of a questionnaire that identified general environmental regulatory program areas potentially applicable to facility operations and assessed compliance with those programs. No issues were identified with respect to historical waste handling, storage, or disposal areas onsite. The concrete floors in the storage building and shop were reported to be in good condition and no signs of staining were noted from drums of motor oil stored in those areas. No polychlorinated biphenyl (PCB)-containing electrical transformers were present at the site. The environmental compliance review indicated that the facility was in compliance with applicable regulations and no recommendations for further action were made.

Phase I ESA and Environmental Compliance Review Update—1998

Dames and Moore completed an update of the 1993 SEACOR Phase I ESA and the 1996 Environmental Compliance Review in 1998. The review was conducted due to the public offering by GAC. No substantial environmental issues were identified.

Sediment Characterization Sampling—1999

CH2M HILL collected sediment samples adjacent to the GAC dock on February 12, 1999. The purpose of the sampling was to fulfill a request made by the Corps of Engineers Portland District Office that sediments proposed to be dredged from the GAC dock be characterized. GAC has been issued a permit to perform maintenance dredging at its dock.

Sediment samples were collected at three locations adjacent to the dock using a Petit Ponar grab sampler. The sampling locations are shown in Figure 2-3. Equal volumes of the three samples were composited into one sample that was submitted for laboratory analysis. The sample was tested for the Corps of Engineers Tier IIB analyte list, which is contained in the *Dredged Material Evaluation Framework* (Corps, et al., 1998).

The sampling results were compared to screening levels detailed in the *Dredged Material Evaluation Framework*. The screening levels are concentrations at or below which sediment is judged to be suitable for aquatic disposal without the need for biological testing. The analytical results indicated that there were no chemical constituents or physical parameters of concern in sediments adjacent to the GAC site. For all parameters analyzed either the analytes were not detected, or concentrations were well below the screening levels. These data are presented and analyzed in greater detail in Section 7.4.

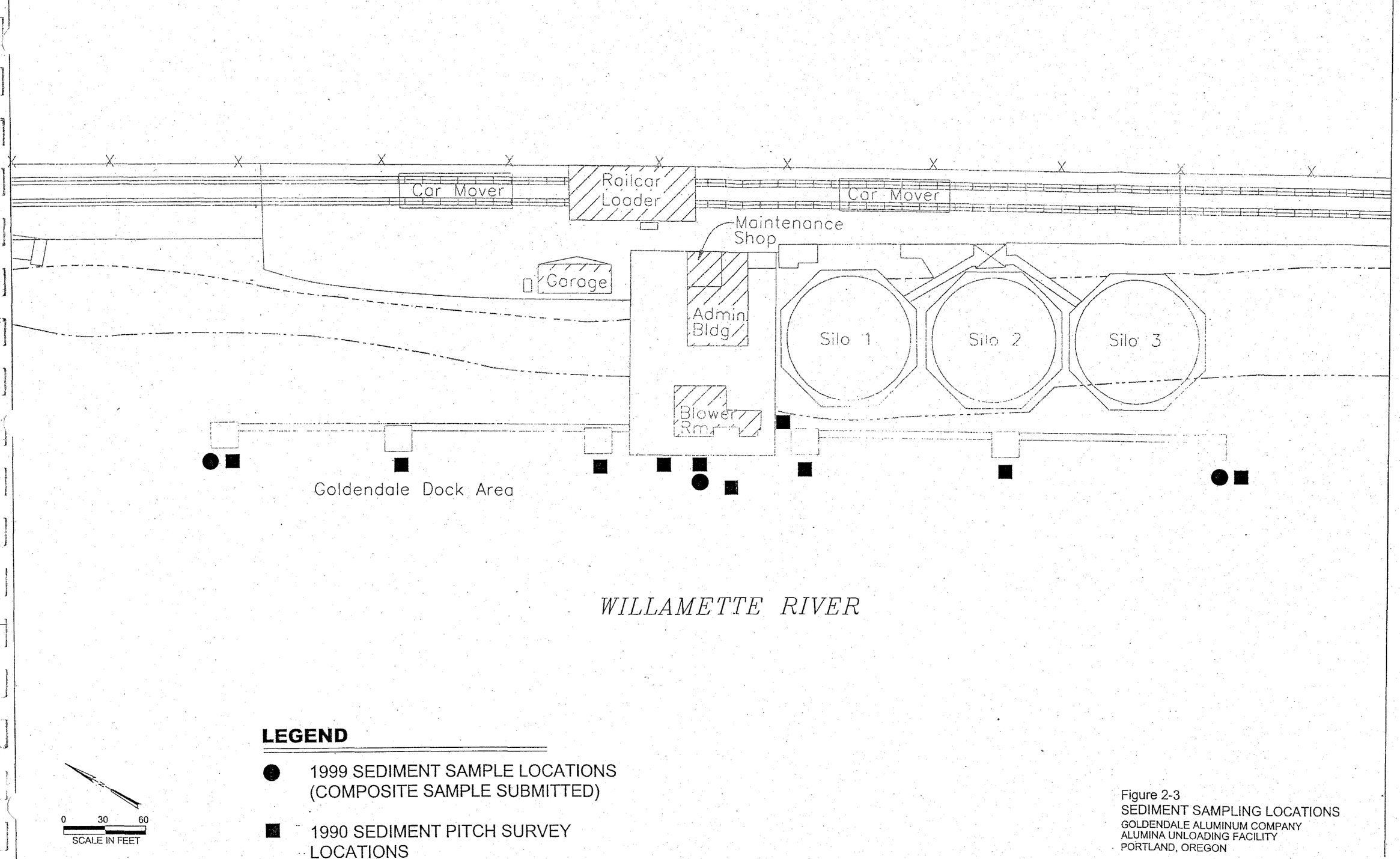

Figure 2-3
SEDIMENT SAMPLING LOCATIONS
GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

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SECTION 3

Source Areas and Waste Characteristics

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SECTION 3

Source Areas and Waste Characteristics

Potential and documented sources that may have affected sediment quality at the site are presented in this section. Waste characteristics associated with those sources are discussed with regard to the potential for those sources to affect sediments adjacent to the GAC site. Sources are divided between onsite sources and sources at adjacent properties (offsite sources). The list of potential sources is intended to address all potential sources of releases that have been identified or that were raised in the DEQ strategy recommendation for the GAC site. Each of the potential sources, associated substances, release mechanisms, and the transport media are presented in Figure 3-1. The rationale for dismissing or retaining the potential sources as contributors to sediment contamination is also included in this figure.

3.1 Onsite Sources

This section presents potential and documented sources of environmental contamination present at the GAC site. Potential onsite source locations are shown in Figure 3-2.

3.1.1 GAC Dock Area

Potential sources from the GAC dock area include losses of alumina and pitch to the river during ship loading, spills from ship refueling, and discharges from ships berthed at the GAC dock.

During construction in 1981, the area around the GAC dock was dredged to a depth of approximately 40 feet to facilitate dock construction and to allow large cargo vessels into the dock area. Maintenance dredging was performed in 1991 to remove accumulated sediment from the dock area. Maintenance dredging is again necessary and GAC has obtained a permit from the Corps of Engineers and the Division of State Lands to proceed with dredging at the dock.

3.1.2 Alumina and Pitch Handling

Alumina is unloaded from cargo ships docked at the facility and transferred to onsite storage silos or transferred directly to railcars. Pitch has only been handled infrequently at the current facility and has been handled only once since 1989. There are no documented spills of alumina or pitch from offloading at the dock. The pneumatic conveyor system used to unload bulk cargo ships at the GAC dock pipes alumina from the hold of the ship directly into the storage silos or railcars. Unloaded material is entirely contained within pneumatic conveyance pipes. Thus, alumina does not openly pass over the dock area or the river. Consequently, direct spillage of alumina and pitch into the river during unloading operations is precluded. Within the hold of the ship, the vacuum pressure of the pneumatic system minimizes fugitive air emissions. Discharges of alumina and pitch from ships berthed at the GAC dock are limited to slight fugitive air emissions and stormwater runoff from the site, which may contain trace amounts of alumina that settles on the site from the fugitive air emissions. If fugitive dust does accumulate, facility staff clean up the material so that it does not enter stormwater runoff.

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Potential Source for Sediment Contamination	Substance	Possible Release Mechanism	Transport Media (to Sediments)	Reason to Dismiss as a Plausible Significant Source to Sediment Contamination	Reason to Retain as a Possible Source of Sediment Contamination
Alumina unloading from ships	Alumina	Fugitive emissions during transfer	Air emissions, overland surface flow	• Virtually no possibility of spillage during ship unloading due to vacuum unloading system (fugitive air emissions only). • If dust was noticed on site, it is cleaned up. • Alumina has no detrimental health effects; treated as a nuisance dust. • Alumina is the most abundant metal in the earth's crust and is found in clay.	
Pitch unloading from ships	Electrode binder pitch (coal tar pitch)	Fugitive emissions during transfer	Air emissions, overland surface flow	• Virtually no possibility of spillage during ship unloading due to vacuum unloading system (fugitive air emissions only). • If dust was noticed on site, it was cleaned up. • Pitch visual observation survey conducted in 1990. showed no evidence of black coal-like pitch. • If pitch was deposited on sediments, the majority would have been removed in the 1990 dredging activities (pitch unloading ceased in 1988, except for 1 ship in 1992). • If pitch was present in sediments, ratio of HPAHs to LPAHs would be much greater (pitch contains significantly more HPAHs than LPAHs).	
GAC above-ground storage tanks	(1) 500-gal diesel (1) 200-gal waste oil	Spill on asphalt	Surface runoff	• No reported spills. • Tanks in good condition; well maintained. • Diesel tank is double-walled. • Weekly Hazmat checks started in 1991.	
GAC stormwater discharge	Possible oil and grease drips from trains or equipment	Overland flow to outfalls	Stormwater	• Limited number of exceedances. • Relatively low mass concentrations of oil and grease discharged. • GAC has taken corrective action and is planning to replumb all stormwater collection through stormwater sump system and through a single outfall.	
GAC USTS	(1) 1000-gal diesel (3) 1000-gal gasoline	Infiltration into soil	Soil, groundwater	• Onsite staff observed the excavations; stated that there was no evidence of contamination observed during excavation or in the soil pits; the tanks were in good condition. • Limited laboratory testing data indicate that no petroleum concentrations exceeding typical DEQ cleanup requirements were present in the soil beneath the tanks.	
Storage building	Unused oil, painting supplies	Spill on concrete floor	Overland surface flow	• Covered building. • Concrete floor in good condition. • Materials well marked and segregated. • No documented spills.	
Tai Chung fuel oil spill	Fuel oil, possibly bunker C (8,000 gal)	Spilled from ship during refueling	Transport through water column		• The majority of the fuel seemed to float, and only a small quantity of the fuel escaped past the booms. • The cleanup lasted several days and continued until no visible fuel oil was present. • However, bunker C can sink if the water temperature is cold enough. Impact to the sediments is unknown.

Figure 3-1
Source/Pathway Diagram (Page 1)
Goldendale Aluminum Company
Alumina Unloading Facility, Portland Oregon

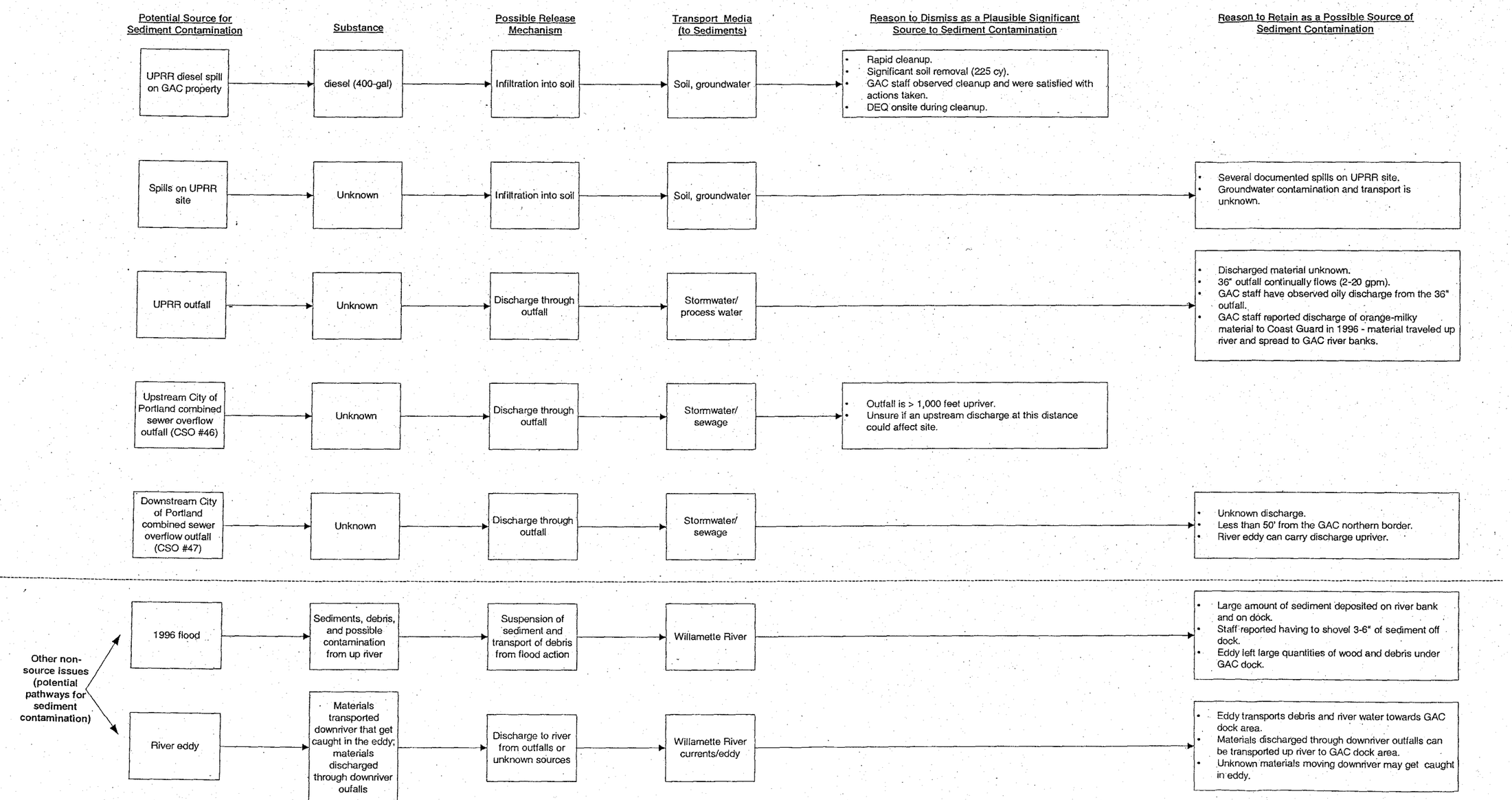

Figure 3-1
Source/Pathway Diagram (Page 2)
Goldendale Aluminum Company
Alumina Unloading Facility, Portland Oregon

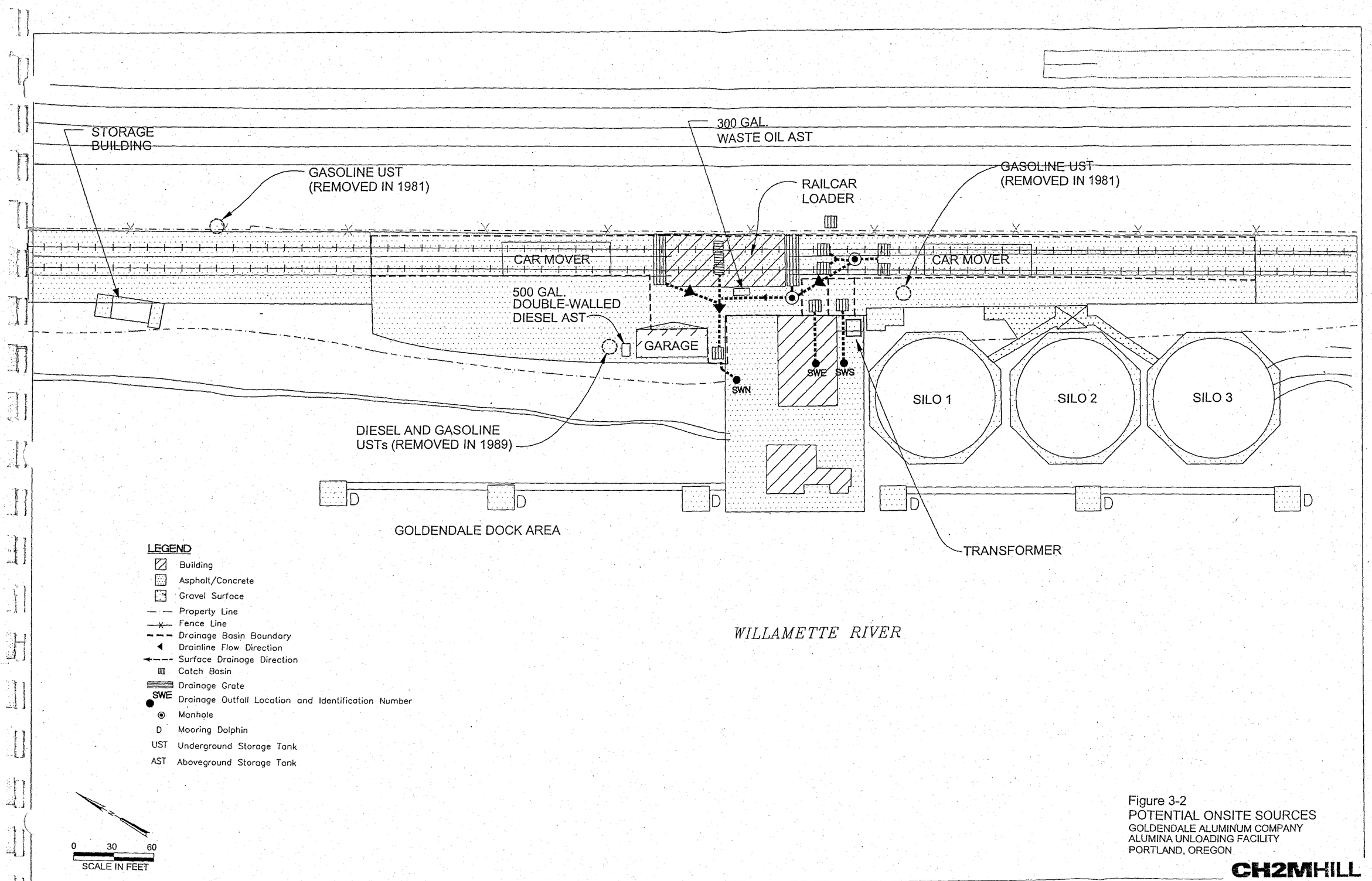

Figure 3-2
POTENTIAL ONSITE SOURCES
GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

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Alumina dust generated in the storage silos and railcars during loading operations is recovered by bag filters that are attached to the silos and to the railcar loading equipment. When loading railcars, transfer pipes connect to the railcars and form a seal so that emissions of alumina dust are limited. Air filters on the silos and at the railcar loading facility effectively reduce fugitive emissions from the site. Because the fugitive emissions from the site are minimal, the facility is not required to have an air contaminant discharge permit.

Due to the infrequency of pitch unloading, and the 1990 sediment sampling data that revealed no evidence of pitch in sediment at the GAC dock, it is not believed that pitch unloading operations have resulted in impacts to sediments adjacent to the facility. Some alumina was observed in the sediments recovered from certain sample locations during the 1990 sediment characterization. However, alumina is nonhazardous and the presence of small amounts of alumina in river sediments does not pose a human health or ecological risk.

Materials Safety Data Sheets for alumina and the pitch formerly handled at the facility are included in Appendix D.

3.1.3 Aboveground Storage Tanks

There are two aboveground storage tanks (ASTs) at the GAC facility. There is a 500-gallon double-walled diesel tank and a single-walled, 300-gallon waste oil storage tank. Diesel fuel is used by the facility vehicles. The waste oil tank is used to store oil for later recycling. A vendor removes oil from the tank as the tank is filled. Waste oil at the facility is generated from the maintenance of the bobcats, facility vehicles, and fork trucks. The waste oil tank was installed in 1982 during construction of the present alumina unloading facility. The diesel tank was installed in 1989.

3.1.4 Stormwater Outfalls

The GAC site contains three permitted stormwater outfalls that discharge to the Willamette River. These outfalls are permitted by a NPDES 1200Z general permit and are monitored twice a year for compliance with permit provisions regulating total suspended solids, oil and grease, pH, temperature, copper, lead, and zinc. The three outfalls are shown in Figure 3-2 along with their respective drainage areas.

A Notice of Noncompliance was issued by the DEQ on August 16, 1996 for an oil and grease concentration of 17 mg/kg detected at the southern outfall (SWS) on December 30, 1995. This detection exceeded the oil and grease permit limit of 10 mg/kg. This exceedance was attributed to asphalt paving that had recently been laid in the drainage area of the outfall.

The oil and grease limit was exceeded during sampling conducted on August 20, 1997. An oil and grease concentration of 51 mg/kg was detected in outfall SWE.

The oil and grease limit was exceeded during sampling conducted on November 30, 1998. An oil and grease concentration of 93.9 mg/L was detected in outfall SWN. Elevated levels of oil and grease were not detected in subsequent sampling conducted in June 1999.

The oil and grease exceedances listed above are likely due to isolated storm events that flush accumulated contaminants from the stormwater collection system. Due to the limited

number of exceedances and the relatively low mass concentrations of oil and grease discharged, impact to river sediments from stormwater outfalls is believed to be minimal.

In the near future, GAC plans to redirect the stormwater that currently discharges through the three outfalls, through the storm sewer sump collection system. Water leaving the sump will be discharged through a single outfall. This approach has been discussed with the City of Portland Bureau of Environmental Services.

In addition, there are other nonpermitted outfalls in the vicinity of the GAC dock that are shown on Figure 2-2. Rock sumps feed these outfalls with the exception of the southernmost outfall. This outfall allows accumulated water to drain from an electrical box vault. Two of the rock sumps are located just east of the GAC site boundary on the UPRR property. These outfalls were installed by Martin Marietta during construction of the facility in 1982.

3.1.5 Surface Runoff Discharge Areas

Surface runoff discharge areas at the site are limited to the area immediately adjacent to the riverbank. Surface runoff from this area flows to the riverbank and into the Willamette River. This area is covered with grass and there are no known contaminant sources in the area that would impact surface runoff and contribute to sediment impacts in the river.

3.1.6 Former Underground Storage Tanks

Before redevelopment of the facility in 1981, the former unloading facility had a 1,000-gallon UST containing gasoline. The grain shipment facility that formerly occupied the southern portion of the current site also had a 1,000-gallon gasoline UST. These two USTs were removed when the facility was redeveloped. There are no records of this tank removal.

Two 1,000-gallon USTs were installed when the present facility was constructed in 1981. One tank contained diesel fuel and the other contained gasoline. These tanks were removed in April 1989 and no evidence of soil contamination or tank failure was detected during decommissioning. The tanks were in service only eight years before their removal. The approximate locations of the former USTs are shown in Figure 3-2.

Analytical results from samples obtained from the tank excavation area indicated that total petroleum hydrocarbon levels were well below current cleanup levels. The analytical results, which showed total petroleum hydrocarbon concentrations ranging from 5.3 mg/kg to 8.4 mg/kg, are below the most stringent current DEQ numeric soil cleanup standards of 40 mg/kg for gasoline and 80 mg/kg for diesel. These results indicate that the tanks were intact and had not leaked before they were removed.

Because there is no evidence of releases from the USTs, the USTs are not considered a source that may have impacted sediments adjacent to the facility.

3.1.7 Storage Building

The storage building is located in the northern portion of the facility and consists of a metal-framed structure with a concrete floor. The building is used primarily to store 55-gallon drums of lubricating oils and hydraulic oils that are used to maintain the unloading equipment and facility vehicles. Small quantities of paints and gardening supplies are also stored in the building.

There have been no documented releases or spills of oils, paints, or greases at the facility. During a CH2M HILL site inspection on February 25, 2000, the storage building appeared well-maintained, with materials properly labeled and the concrete floor in good condition. No evidence of concrete staining indicative of a spill was noted. Because there are no documented releases from this building, this potential source is not considered to have impacted sediments adjacent to the facility.

3.1.8 Transformers and Turbines

The facility has several small transformers located in the three motor control centers that serve the unloading equipment. According to site personnel, these transformers are dry transformers that do not contain insulating fluids. There is one large transformer located outside the southeast corner of the Shop and Administration building. This transformer was purchased in 1982 during site construction and contains less than 1 part per million (ppm) PCBs in the insulating oil. Inspection of the transformer by CH2M HILL personnel on March 3, 2000 showed no indications of leaks from this transformer.

There are no documented releases of oil from the transformers and the transformers contain less than 1 ppm PCBs. Accordingly, transformers at the facility are not believed to be a source of hazardous releases that may have impacted sediments.

3.1.9 Historical Grain Shipment Facility Operations

The southern portion of the GAC site was formerly occupied by a grain shipment facility owned by Kerr Grain Corporation. Aerial photographs indicate that this facility was present on the site since at least 1936 before it was destroyed by fire in 1966. The detailed operations of this facility are unknown. Grain arrived by railcar, was stored onsite, and was transferred to ships berthed at the facility's dock. There are no known operations at the former grain shipment facility that would have contributed to sediment contamination adjacent to the GAC facility.

3.2 Offsite Sources

A number of other potential sources for sediment contamination exist in the vicinity of the GAC facility, some of which are currently being investigated by DEQ. Potential offsite sources include the following:

- Tai Chung fuel oil spill
- UPRR railcar diesel spill on GAC property
- UPRR spills and USTs
- UPRR outfall
- City of Portland stormwater outfalls

The potential offsite sources are shown in Figure 3-3 and are discussed in detail below.

3.2.1 Tai Chung Fuel Oil Spill

Ships unloading at the GAC dock are regularly refueled by barges that service the Portland Harbor. Fuel transferred to ships is typically bunker C fuel oil. Over the history of the unloading facility, there has been only one documented spill associated with the GAC dock. On December 27, 1991, a ship named the Tai Chung, which was docked at the CAC dock,

spilled approximately 8,000 gallons of bunker C fuel oil. The 600-foot Taiwanese vessel was being fueled by a barge via transfer hose to two tanks on the ship when the spill occurred. The owner of the ship was Taiwan Navigation. The operators were Sanko Steamship Co. LTD. GAC does not contract directly or indirectly with the owners or operators of the ships that unload at the GAC dock. GAC presumes that the ships contract directly with the barge refueling companies for the fuel oil.

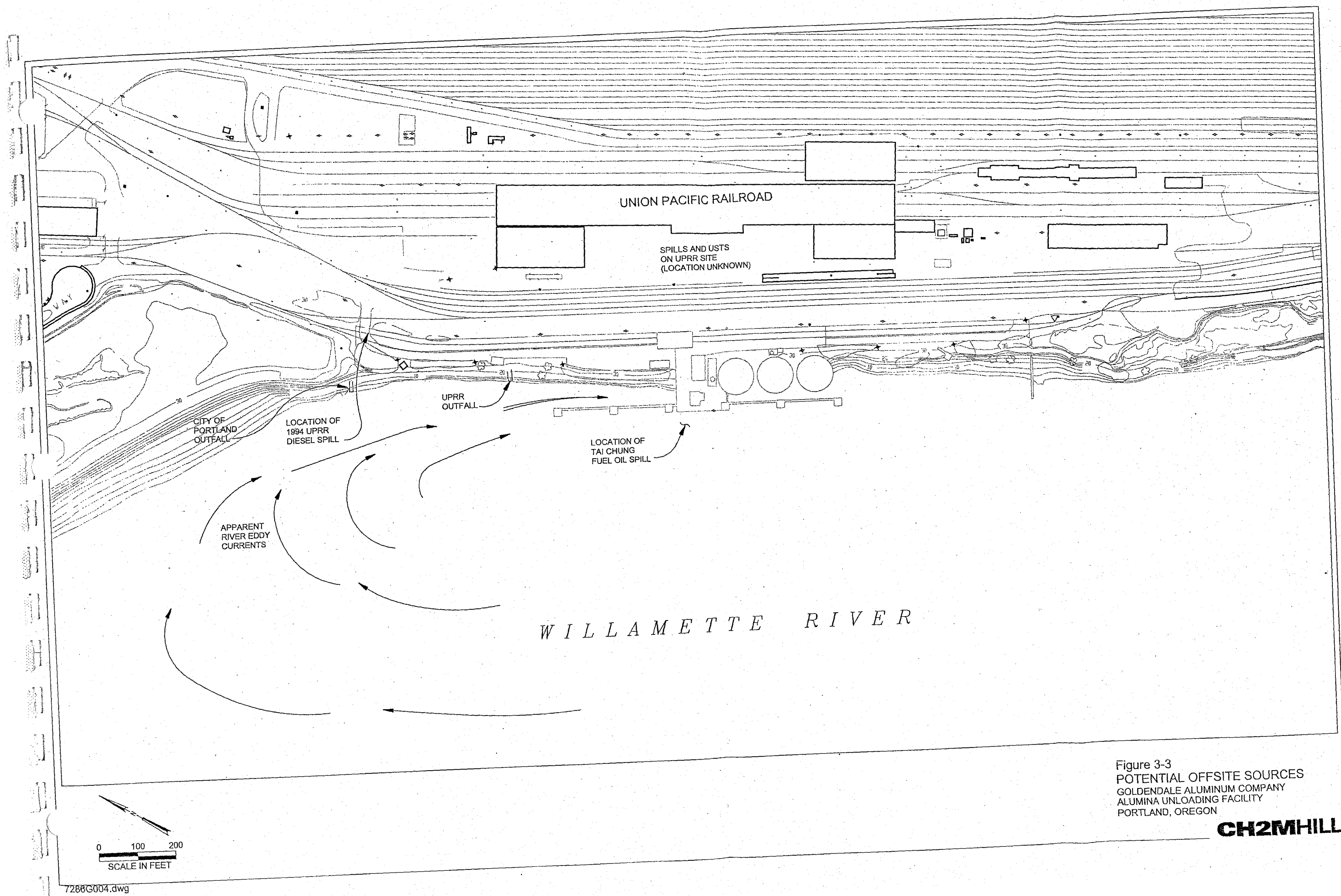

Figure 3-3
POTENTIAL OFFSITE SOURCES
GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

CH2MHILL

The spill occurred during the refueling operation and is believed to have been a result of inadequate oversight of the refueling operation by the ship's crew. At 2:18 AM on December 27, 1991, CAC staff noticed fuel running down the dock-side of the Tai Chung. At 2:24 AM, CAC staff notified the Coast Guard and the ship's agent (Fritz Maritime). Noticing no ship personnel monitoring the refueling process, a CAC employee alerted the barge tender and had him stop pumping fuel to the Tai Chung. CAC employees eventually located the crew and notified them of the spill. After discussing the situation with the CAC foreman and the Coast Guard, the ship's agent contacted Reidel Environmental Services at 2:30 AM. The cleanup process started at approximately 5:00 AM.

The cleanup lasted for several days and is believed to have captured the majority of the spilled fuel. Booms were placed around the ship and the spilled fuel, allowing only a minimal amount of fuel to escape. Bunker C fuel oil typically floats and has a very low solubility in water, allowing for capture of a high percentage of spilled fuel. However, bunker C has a specific gravity equal to or slightly less than that of water. Bunker C generally floats on water but can sink if the water temperature is low enough. It is unclear if any fuel sank to the river bottom. The ship, the river bank, and the dock pilings were cleaned leaving no visible oil. Records do not indicate the exact amount of fuel spilled or recovered. Cleanup operations continued until the Coast Guard determined that the majority of the spilled fuel had been removed and spilled fuel was no longer visible.

Coast Guard Lt. Mike Drieu stated that the spill caused minimal environmental damage and was largely contained. Due to the early action by the emergency response team, the tendency of the fuel oil to float, its low solubility in water, and the lack of significant river currents near the dock, the spill is believed to have had a minimal impact on river sediments. However, since there is a possibility that some of the fuel may have sunk, the impact to sediments is not completely understood.

3.2.2 UPRR Railcar Diesel Spill

At approximately 2:10 AM on January 27, 1994, a UPRR switch engine ran through a derailer device, puncturing its fuel tank and resulting in a release of approximately 400 gallons of diesel fuel near the GAC property. The incident occurred in a grassy area on the north end of the GAC property, located approximately 110 feet east of the river. There is no evidence that the spilled fuel reached the river.

UPRR contracted with the Rick Franklin Corporation to remove contaminated soil and place it on plastic for later disposal. The contractor began soil excavation work at approximately 7:00 AM the morning that the spill occurred. A spill report was prepared by UPRR. A DEQ representative was onsite for a part of the soil remediation work. Approximately 225 cubic yards of soil were excavated and three soil verification samples were collected. Groundwater was not encountered during excavation and was reported to be at a depth of 30 feet below ground surface. Soil sample results and depths are as follows:

- Sample #1: <20 mg/kg total petroleum hydrocarbons (7′ 3″ deep)
- Sample #2: <20 mg/kg total petroleum hydrocarbons (6′ 0″ deep)
- Sample #3: 57 mg/kg total petroleum hydrocarbons (4′ 0″ deep)

The spill report, sample locations, and additional cleanup information are included in Appendix E. By January 31, 1994, the track was restored, contaminated soil was hauled offsite for disposal, and the excavation was backfilled with clean material. Due to the early

action by UPRR and their cleanup contractor, the amount of soil removed, and the fact that the spill did not contact groundwater or the river, the impact of the spill on river sediments is believed to be minimal.

3.2.3 UPRR Spills and USTs

As stated by DEQ in the UPRR Strategy Recommendation, UPRR has had several documented spills of various materials on their property (twelve spills were listed in the SR). Some of these spills reached the Willamette River. The site was placed on DEQ's Confirmed Release List in April 1997. In addition, there are references to the decommissioning of 11 USTs at the UPRR site, although additional USTs may have been present before DEQ began keeping records on USTs in 1988. The 11 USTs ranged from 500 to 12,000 gallons, contained gasoline or diesel, and were removed between 1989 and 1995. The impact of these spills and USTs to groundwater, the GAC site, the river, and river sediments is unknown.

3.2.4 UPRR Outfall

UPRR has a 36-inch corrugated metal outfall that discharges near the northern portion of the GAC property. GAC staff indicated that this outfall discharges continuously at an estimated rate of 2 to 20 gallons per minute. GAC staff have observed oily water discharges on several occasions. On one occasion (date unknown, but believed to be in 1996), GAC staff observed an orange-milky substance being discharged from the outfall. The river eddy carried the material upstream and coated the river banks along the GAC property. GAC staff notified the Coast Guard and the Coast Guard arrived approximately one hour after the incident and collected water samples. The Coast Guard did not contact UPRR about the incident. The results of the water sampling effort are unknown.

It is unclear if the outfall is permitted. DEQ has issued UPRR a permit for stormwater discharge and UPRR held a wastewater discharge permit issued by DEQ until January 1986. As stated in the UPRR SR, UPRR began discharging wastewater to the City of Portland sanitary sewer in 1986. There have been numerous violations for storm and wastewater discharge, primarily for exceedances of biological oxygen demand and oil/grease permit limits.

3.2.5 City of Portland Stormwater Outfalls

A combined storm sewer outfall (CSO #47) discharges just to the north of the GAC property. The outfall is less than 50 feet from the northern border of the GAC property. The outfall diameter is estimated to be approximately 36 inches. Material discharging from this outfall can be carried upstream by the river eddy towards the GAC property. The quality and quantity of water discharged from this outfall are unknown.

Another combined storm sewer outfall (CSO #46) is located south of the facility. This outfall is more than 1000 feet from the southern border of the GAC property. The quality and quantity of material discharged from this outfall are unknown. It is unclear whether this outfall has a significant impact to the GAC site due to its distance upriver.

3.3 River Conditions and Relationship Between Source Locations and Sediments

3.3.1 General Conditions—River Eddy

An expansion in the width of the Willamette River near the site results in a river eddy that allows water to flow upriver along the shoreline adjacent to the facility and the GAC dock. GAC staff indicate that material floating downriver within a distance of one-quarter to one-third the width of the river is captured by the eddy. Figure 3-3 shows the approximate path of the eddy currents. Due to the eddy, debris often collects under the GAC dock area and along the shore. If upstream material and sediment is caught in this eddy, it will be carried to the vicinity of the GAC dock. Figure 3-3 illustrates how material discharged downstream of the site from the City of Portland and UPRR outfalls has the potential to affect upriver water and sediment quality.

Maintenance dredging has been regularly required at the GAC dock to remove accumulated sediments and maintain water depths for ship berthing. Dredging at the facility's dock occurred during construction in 1982, was required again in 1991, and is now necessary once again. GAC was issued a permit by the Oregon Division of State Lands and Corps of Engineers in 1999 to perform this maintenance dredging, though the dredging has not yet occurred. The Portland Harbor lies in a depositional reach of the Willamette River and it is believed that the river eddy present at the site results in significant further sediment deposition.

3.3.2 Extreme or Unusual Conditions—1996 Flood Example

High Willamette River levels in February 1996 deposited large quantities of sediment on- and offshore from the GAC property. GAC staff shoveled 3 to 6 inches of sediment off the GAC dock. Sediment covered much of the shoreline and upland areas on western portions of the GAC property. The flood eroded a significant amount of bank material from the GAC property. GAC staff had prepared well for the high water and there were no spills or contact between flood waters and materials stored onsite.

3.3.3 Summary

As will be discussed in greater detail in subsequent sections, localized hydrological conditions such as the river eddy and extreme river events impact the GAC site by introducing both offsite sediments and releases from other sources to the dock area at the GAC site. These conditions are significant enough to indicate that offsite sources of sediments and hazardous constituents must be carefully considered in evaluating the source of constituents to sediments sampled near the GAC site.

SECTION 4

Pathways of Exposure—Groundwater

SECTION 4

Pathways of Exposure—Groundwater

4.1 Hydrogeologic Setting

The GAC site is located on recent alluvium deposited in floodplains of the Willamette and Columbia Rivers. The annual precipitation for Portland, Oregon is 95.4 cm (37.6 inches) and the estimated annual groundwater infiltration in the vegetated areas of the site is approximately 47 to 54 cm (18.5 to 21 inches). Aerial photographs indicate that fill material may overlie native alluvial floodplain deposits (silty sand) at the site.

Aquifers in floodplain deposits generally are unconfined and localized due to heterogeneity of the deposits. Occurring at various depths in the site vicinity, Columbia River basalts underlie these alluvial deposits.

Groundwater is believed to flow toward the Willamette River. The majority of the site is relatively flat and is approximately 30 feet above mean sea level (MSL) at its highest elevation. The site slopes down to the river to an elevation of approximately 20 feet above MSL. In general, overland flow is to the southwest toward the river.

4.2 Groundwater Targets

Approximately 60 percent of the site, in the northern and middle portion of the site, is covered in pavement. Vegetation and gravel cover the southern portion of the property. GAC and surrounding properties utilize a municipal water supply and sewer system. Groundwater is not used for domestic purposes at or within the vicinity of the site. As stated in the DEQ SR, the Oregon Water Resources department has no records of any domestic groundwater wells within a mile of the facility.

4.3 Groundwater Conclusions

There are no analytical groundwater data available for the site. There have been no known spills or releases at the site that would have resulted in an impact to groundwater. There are no known impacts from USTs formerly located at the facility since there is no evidence that USTs formerly present at the site had releases or impacted soil or groundwater. Additionally, site personnel present during the UST decommissioning activities have stated that no indications of impacted soil were observed at the time of decommissioning.

Impacts to groundwater at the site are most likely limited to those that may be present due to spills that have occurred at the UPRR Albina Yard, which surrounds the site. A diesel spill that occurred in January 1994 when a UPRR switching engine derailed, was cleaned up satisfactorily and it is not believed that groundwater was impacted from this spill.

SECTION 5

Pathways of Exposure—Air

SECTION 5

Pathways of Exposure—Air

5.1 Physical Conditions

The only source available to the air pathway is fugitive emissions of alumina that occur during material handling operations. The facility is not required to have an air contaminant discharge permit because the total quantity of emissions is less than 10 tons per year. Emissions of alumina are not hazardous and do not present a threat to human health or the environment. Emissions of alumina at the site are reduced by a bag filter system that captures emissions of dusts generated within the alumina storage silos and during railcar loading.

5.2 Air Pathway Targets

The nearest air pathway receptors consist of private residences located approximately 1,500 feet away northeast of the facility on a bluff overlooking the UPRR yard. There are approximately 270 private residences located within a 0.5-mile radius of the site. These residences are all located on the bluff to the northeast, which has an elevation of approximately 170 feet above mean sea level. Assuming that approximately 3.9 people live in each residence, the population residing within a 0.5-mile radius of the site is estimated to be approximately 1,000 people. The nearest sensitive environment is located adjacent to the site in the Willamette River.

5.3 Air Pathway Conclusions

The only material discharged through the air pathway is alumina dust. The emissions are below the minimum amount required to be permitted by the DEQ. Alumina is a nonhazardous material and the fugitive emissions from the facility do not pose a threat to human health or the environment.

SECTION 6

Pathways of Exposure—Direct Contact

PDX/003671158.DOC

SECTION 6

Pathways of Exposure—Direct Contact

6.1 Physical Conditions

The GAC site is an industrial facility and approximately 60 percent of the site is covered with asphalt pavement. The remainder of the site is covered with gravel in the southern portion of the site, and riprap near the shoreline.

Due to the industrial nature of the facility there is no habitat to be utilized by ecological receptors. Fuels, oils, and lubricants used onsite are stored in locked storage areas and there are no hazardous substances available for direct contact. The site is surrounded by cyclone fencing and has a gate that keeps the area secure from trespassers. The site is surrounded by a large railroad yard on three sides and by the Willamette River to the southwest. The steep riprap river bank also makes access from the Willamette River difficult. Due to the isolated location of the site within an industrial area, trespassers and passersby are uncommon.

6.2 Direct Contact Targets

There are no residences located within 1,000 feet of the site, and there are no known contaminated areas at the site. The only nearby structures are located on the UPRR Albina rail yard.

6.3 Direct Contact Conclusions

Due to the industrial nature of the facility there is no habitat to be utilized by ecological receptors. Sensitive ecological receptors do exist in the Willamette River adjacent to the site, but there is no known threat to those receptors posed by the facility or potential releases from the site. In addition, there are no areas of contamination at the site that pose a direct contact risk to trespassers or onsite workers.

SECTION 7

Pathways of Exposure—Surface Water and Sediment

PDX/003671158.DOC

SECTION 7

Pathways of Exposure—Surface Water and Sediment

7.1 Hydrologic Setting

The GAC site contains no surface water bodies, but lies on the Willamette River. Surface water and stormwater drainage from the site and adjacent properties drain to the river. There are rock sump drainage areas that collect water from the GAC and UPRR sites and discharge it to the river through outfalls located on the river shoreline. Storm drain inlet and river outfall locations are shown in Figure 2-2. The GAC stormwater outfalls are discussed in Section 3.1.4.

The Willamette River has the potential to transport contaminants onto the subject property or to adjacent river sediments from upstream sources. The presence of a river eddy in the vicinity of the property, as discussed in Section 3.3.1, also makes possible the transport of contaminants to the site from sources immediately downstream of the site. National Flood Insurance Rate Maps indicate that the facility lies within the 100-year floodplain of the Willamette River.

7.2 Surface Water and Sediment Targets

The site is located in an industrial area with no environmentally sensitive upland areas in the vicinity. The UPRR railroad surrounds the facility to the north, east, and south. The site is bounded by the Willamette River to the west. A thorough description of surface water and sediment targets for the Willamette River is given in the DEQ SR (Appendix F).

7.3 Surface Water Conclusions

Past operations of the GAC unloading facility are not likely to have resulted in surface water contamination that has affected sediment quality. The effect of other nearby outfalls (UPRR and the City of Portland) to sediment is unknown. UPRR has discharged water from its outfall that has been reported to the Coast Guard due to apparent oily characteristics. In addition, it is not fully understood what effect the river eddy has on surface water and sediment in the vicinity of the GAC facility.

GAC has three permitted stormwater outfalls that discharge to the Willamette River. In the near future, GAC plans to direct the stormwater that currently discharges through the three outfalls, through the storm sewer sump collection system. Water leaving the sump will be discharged through a single outfall. This approach has been discussed with the City of Portland Bureau of Environmental Services.

7.4 Evaluation of Sediment

The GAC facility is located at about River Mile 10, approximately one-half mile upstream from the southern extent of the Portland Harbor Sediment study area. Therefore, no sediment samples were collected adjacent to the GAC site during the EPA's 1997 Portland Harbor Sediment Investigation. Sediment sampling data collected during other past investigations are available and are discussed in the following section.

7.4.1 Data Evaluated

Available sediment data for the GAC site include:

- A visual survey for pitch in sediments adjacent to the GAC dock was conducted on March 18, 1990, as discussed in Section 2.4. The survey showed no evidence of black coal-like pitch in any of the sediment cores recovered. Sampling was conducted prior to the 1991 dredging episode. The final report and photographs from the survey are presented in Appendix B.
- One composite sample (composite dredge sample) was collected on February 12, 1999 by CH2M HILL as part of GAC's planned maintenance dredging in front of their dock. Sample results are shown in Table 1 of the SR, which is contained in Appendix F. Sample results are discussed in detail in Section 7.4.2.
- Three samples collected by the Port of Portland and Cascade General, Inc. during their Portland Shipyard investigation in April 1998. These samples are discussed below. Sample results are shown in Table 1 of the SR in Appendix F.

Due to the large distance between the GAC facility and the Portland Shipyard sample locations, it is unlikely that sediment results from these samples are indicative of sediments present near the GAC site. In addition, the contaminants present in these samples are different than those detected in the composite sample collected by CH2M HILL in 1999. This suggests that a different contaminant source has affected sediments at the two locations. Sample PSY76 was a shallow sample and was located approximately 100 feet upstream of the site and 340 feet from shore. PSY71 and PSY77 were collected about 700 feet downstream of the GAC site. Sample locations are shown in Figure 2 of the SR (Appendix F)

7.4.2 Comparison of the 1999 Sample Results Against Screening Criteria

Constituents in the composite dredge sample that exceeded the apparent Portland Harbor sediment baseline maximum values are shown in Table 7-1. Dibenzofuran and LPAHs exceeded baseline values. Also shown in the table are the COE dredged material screening levels. The disposal of dredged material with concentrations at or below the screening levels is not believed to result in adverse effects due to toxicity as measured by sediment bioassays. The composite dredge sample did not exceed any of the COE screening levels. A discussion of PAH sources is presented in the following section.

TABLE 7-1
Comparison of Composite Dredge Sample to COE Screening Levels and Portland Harbor Baseline Values

Analyte	Unit	GAC Dredge Sample	COE Screening Levels	Apparent Portland Harbor Sediment Baseline Maximum Value
Dibenzofuran	ppb	180	540	100
Total LPAH	ppb	1,706	5,200	700

7.4.3 PAH Chemical Source Characterization

PAHs are associated with both coal-derived and petroleum-derived products. However, the PAH distributions associated with coal- and petroleum-derived substances are considerably different. The differences can be used to help determine the potential source of PAHs found in sediments. The sediment sampling analytical results included in Appendix F provide details that are therefore helpful in evaluating the potential source of PAHs found in the sediments.

Background on PAH Differences Between Coal and Petroleum Sources

Coal-Derived PAH Distributions. Electrode binder pitch, a substance that has been unloaded during the history of the site, is derived from coal tar. "Coal tar" is a hydrocarbon residue produced during a retorting process, in which gas is produced from coal.

Most coal originated from terrestrial plants that accumulated as peat. Once buried, pressure and temperature in the subsurface convert the peat to coal through a process called coalification. This process converts plant biopolymers, such as lignin, into conjugated aromatic ringed compounds.

Coal tar has a high PAH content, approaching 50 percent by weight. The PAHs in coal tar are derived from the PAHs originally present in coal as well as those PAHs formed from organic matter during the retorting process.

The average number of aromatic rings in most coal tars is three to five, which are the constituents associated with heavy molecular weight PAHs (HPAHs). Typical compounds in coal tar are phenanthrene, a three-ring compound, and benzofluoranthene and benzo-pyrene, five-ring compounds.

Petroleum-Derived PAH Distributions. Petroleum is produced through the thermal break-down of organics in the subsurface. The organics may be similar to coal. However, the petroleum portion is the portion that can migrate from the rock containing the organic source material. Thus, compared to coal, petroleum consists of smaller, more mobile molecules. These molecules generally contain one to four aromatic rings, such as the monoaromatic compound benzene to polyaromatic 4-ring compounds chrysene and pyrene.

Additionally, there are typically differences in the distribution of alkylated homologues (alkyl-naphthalene, alkyl-phenanthrene, and alkyl-chrysene) among the PAHs in coal versus petroleum. In coal tars, there is generally a larger amount of non-alkylated parent PAH compounds. Petroleum compounds tend to have dominant C2-alkylated homologues.

Weathering Effects. Weathering may change the PAH profile in sediments containing PAHs. For sediments, the predominant weathering would occur from water-washing of PAHs that solubilize into the water column. Lower-ringed PAHs would tend to be more soluble, so weathering would tend to increase the relative proportion of HPAH compounds over time.

Evaluation of Sediment PAH Results and Potential Source Identification

Electrode binder pitch is not believed to have significantly impacted sediments because there have been no known spills of pitch to the river. Pitch has not been visually identified during previous sediment sampling events.

Additionally, the available chemical data suggest that pitch could not be a source of the elevated LPAH levels observed in sediments adjacent to the site. As shown from the data in Appendix F, the concentrations of LPAHs and HPAHs found in the composite dredge sample were approximately equal, with 1,706 ppb LPAHs and 1,832 ppb HPAHs. Coal-derived compounds tend to have a higher relative concentration of HPAHs over LPAHs. And, during the electrode binder pitch distillation process, the majority of the LPAHs, which have a lower boiling point than HPAHs, are removed. The remaining pitch is composed mainly of HPAH compounds. In addition, weathering of any pitch potentially discharged to the river would result in the removal of a greater proportion of the more soluble LPAHs, resulting in an even greater concentration of HPAHs relative to LPAHs. Thus, if pitch were the source of elevated LPAHs in river sediments, there would be a much higher corresponding concentration of HPAHs.

The approximate 1:1 ratio of HPAHs to LPAHs in sediments suggests that the source of the sediment impacts observed at the site is due to a source with a much higher concentration of LPAHs, likely petroleum-derived, and most likely a recent release. Potential LPAH sources are discussed further in Section 8.

7.4.4 Dibenzofuran Chemical Source Characterization

Dibenzofurans have never been manufactured deliberately. They have been found as contaminants in the following manufactured products: PCBs, chlorophenols, diphenyl ether herbicides, polychlorinated benzenes, hexachlorocyclohexane, and paper products.

Dibenzofurans are also formed from the incomplete combustion of a number of substances, including PCBs, PVC, biphenyls and diphenyl ethers, tetrachloroethylene, chlorophenols, paper, wood, peat, and coal. The combustion sources are relatively widespread, so dibenzofuran production is associated with general areas of industrial development.

The chemicals, and manufacturing or combustion activities associated with dibenzofuran chemicals, are not associated with the activities at the GAC site. Therefore, the source of dibenzofurans in sediments near the GAC site is more likely the result of offsite sources or potentially urban background.

SECTION 8

Conclusions and Suggested Activities

SECTION 8

Conclusions and Suggested Activities

8.1 Conclusions

This section restates the main conclusions that can be reached based on the information contained in this report. These conclusions are provided below, followed by recommendations for further investigations related to the GAC site.

8.1.1 Impacts on Sediments

There is no evidence that the site poses a significant threat to public health, welfare, or the environment, nor is there any evidence linking constituents found in the sediments to an upland release from the GAC facility. The composite sample collected at the GAC dock in 1999 contains constituent levels well below the screening levels contained in the *Dredged Material Evaluation Framework for the Lower Columbia River Management Area*. Although these screening levels were developed for a marine environment, they are conservative in nature and similar to screening levels that have been proposed for freshwater environments. Thus, the constituent concentrations found in sediment are not believed to constitute a threat to human health or the environment. Relatively minor exceedances of apparent Portland Harbor sediment baseline maximum values were found in this sample. In addition, the facility has been well maintained and operations at the facility have been conducted in a clean and responsible manner.

8.1.2 Potential Sources of Sediment Contamination

Potential onsite and offsite sources of sediment contamination were discussed in detail in Section 3. The potential sources are shown in Figure 3-1 along with the rationale for whether they should be retained or dismissed as plausible sources of sediment contamination. Potential sources were dismissed if there was adequate information to determine that the potential impacts to sediments were insignificant. Potential sources were retained if their impact on sediments was believed to be detrimental or if the nature of the impact was unclear due to a lack of information.

Dismissed Sources of Potential Sediment Contamination

The following potential sources of sediment contamination were dismissed based on the reasons given in Figure 3-1:

- Alumina unloading from ships
- Prior pitch unloading from ships
- GAC ASTs
- GAC stormwater discharge
- GAC USTs
- Storage building
- UPRR diesel spill on GAC property

- Upstream City of Portland outfall

Retained Sources of Potential Sediment Contamination

The following sources were retained as possible sources of sediment contamination and require additional investigation to determine their impacts to sediments. These sources were retained because there was either insufficient information to rule them out as potential sources or there was information available that they may have detrimentally impacted sediments. Specific reasons for the retention of these sources are summarized in Figure 3-1.

- Tai Chung fuel oil spill
- Spills and USTs on UPRR property
- UPRR outfall
- Downstream City of Portland outfall

It is unclear whether the sources listed above have impacted river sediments in the vicinity of the GAC dock. These areas represent potential sources for the constituents observed in sediments and may warrant additional investigation by DEQ.

8.2 Suggested Additional Activities at the GAC Site

In September 1999, GAC was issued a permit to perform maintenance dredging at its dock. The permit authorizes GAC to dredge sediment to a depth of 38 feet below mean low water level. It is imperative that this accumulated sediment be removed so that ships can dock at the facility. During summer months, river levels are typically lower, causing ships to scrape the river bottom in the vicinity of the GAC dock. GAC plans to remove this material during the next dredging window (July 1, 2000—October 31, 2000). Since there is currently no in-water disposal facility accepting dredge material, GAC may dispose of dredged material at a permitted landfill. GAC will collect samples of the dredged material for characterization purposes. Landfills require that characterization samples be collected prior to accepting material for disposal. Data acquired from this sampling effort can be used to further characterize the sediments in the vicinity of the GAC dock and in the Portland Harbor.

SECTION 9

References

SECTION 9

References

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Department of Environmental Quality. *Strategy Recommendation for Union Pacific Railroad, with Supporting Documentation*. September 1999.

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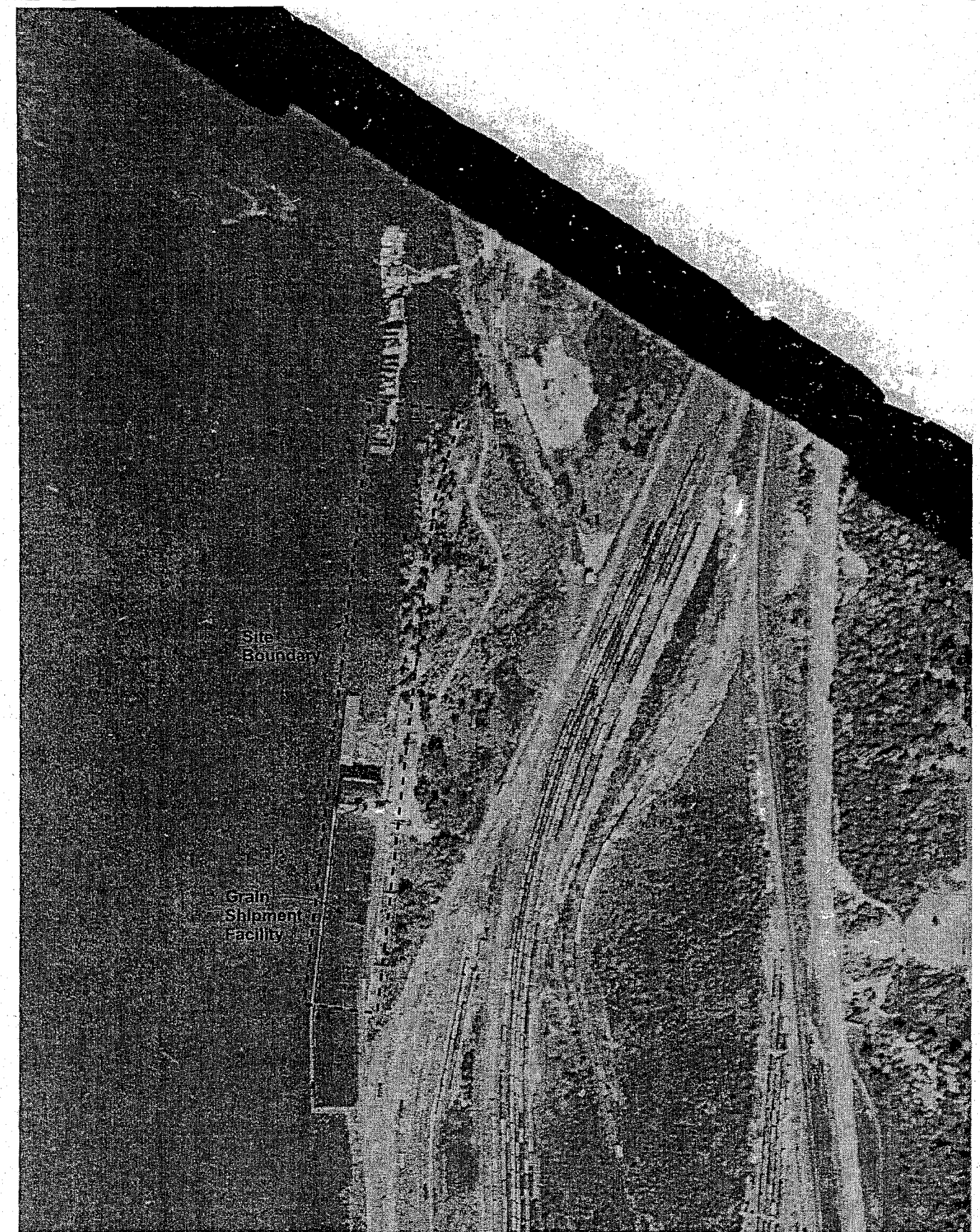
Prepared by Dames & Moore for Stoel Rives/Wilcox. *Update of Summary of Phase I ESA and Environmental Compliance Review for the Golden Northwest Aluminum Facilities*. August 7, 1998.

U.S. Army Corps of Engineers. *Dredged Material Evaluation Framework for the Lower Columbia River Management Area*. April 1998 Public Review Draft.

APPENDIX A

Historical Aerial Photographs

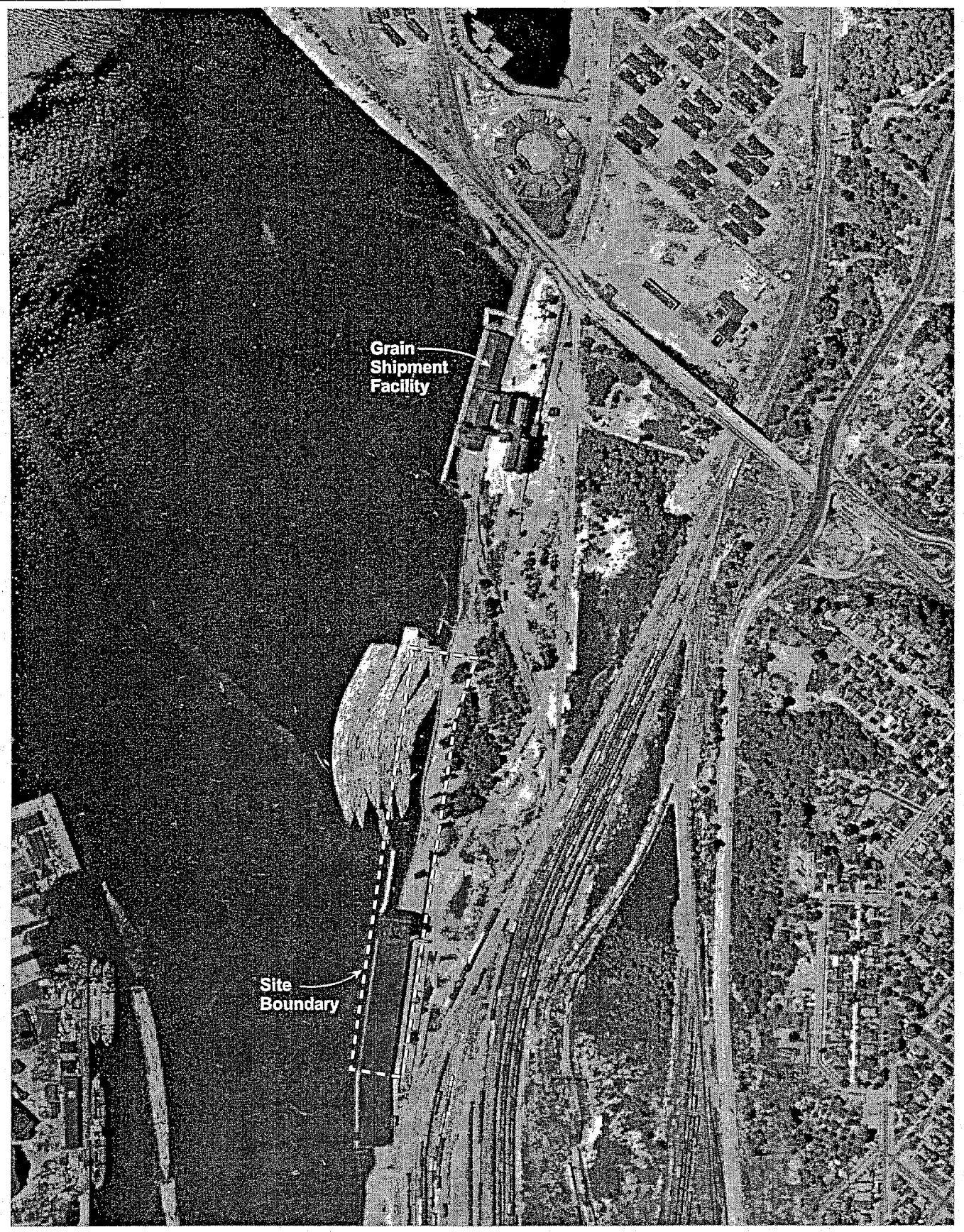


SOURCE: U.S. Army Corps of Engineers

Figure A-1

1936 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

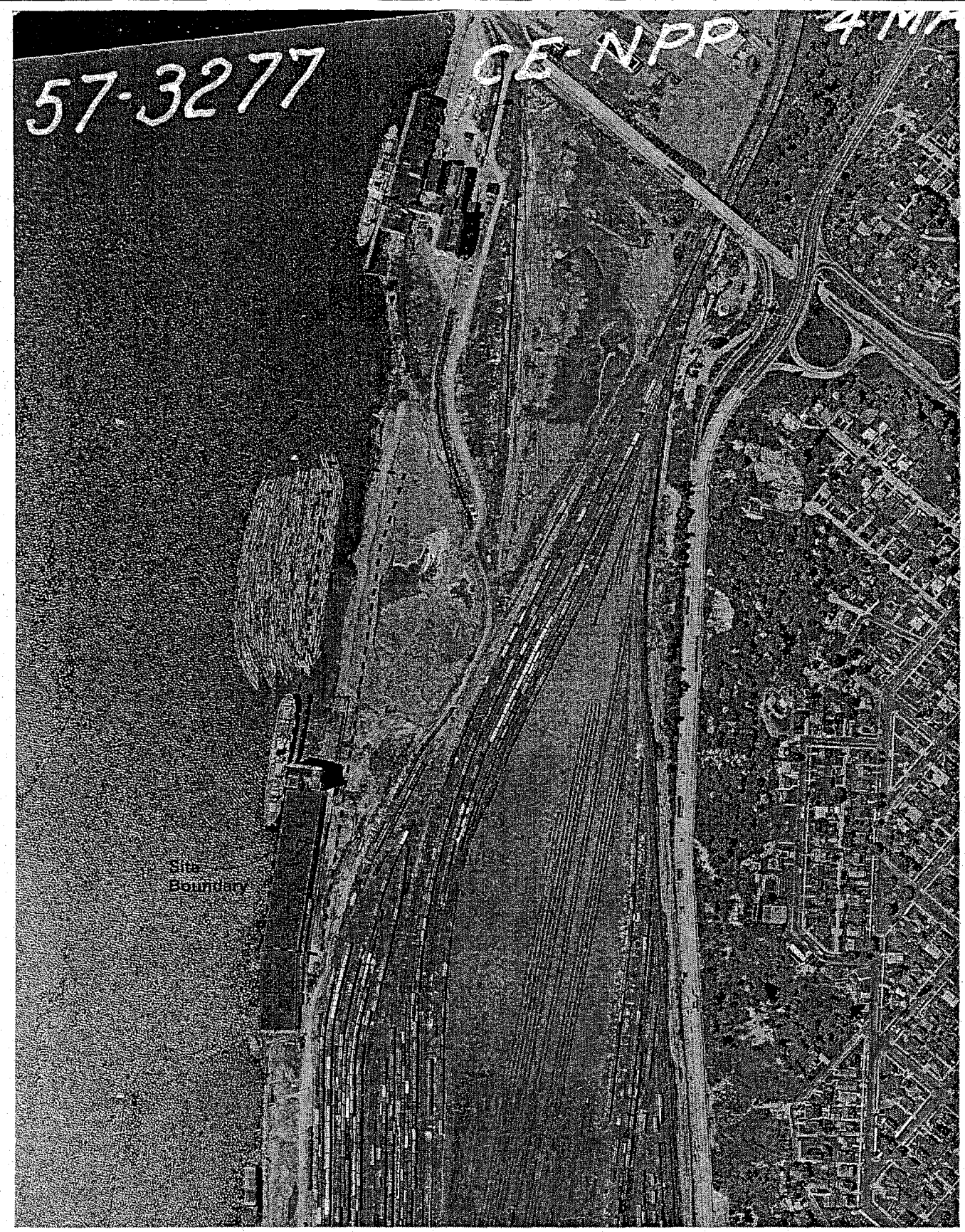


SOURCE: U.S. Army Corps of Engineers

Figure A-2

1948 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON



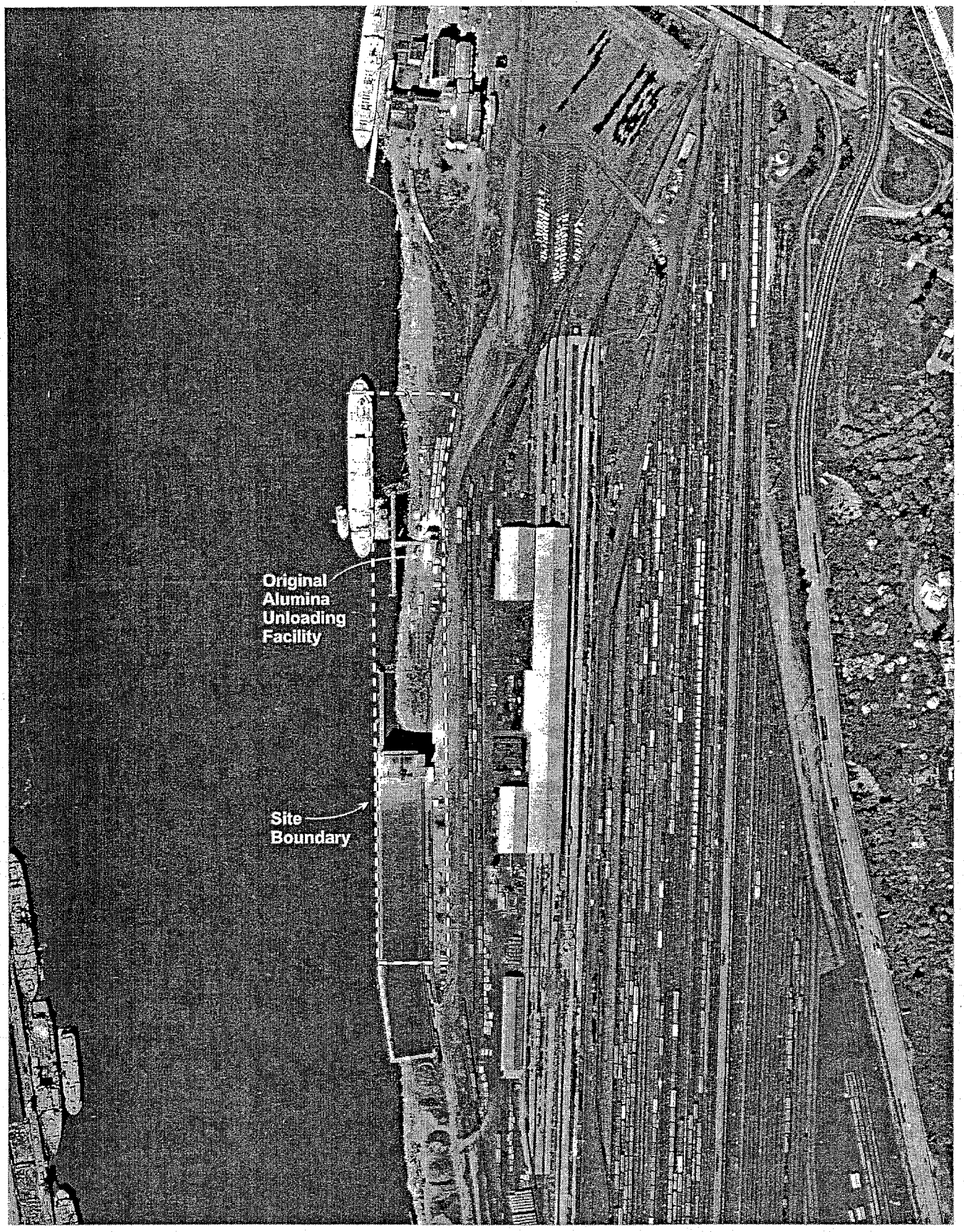
SOURCE: U.S. Army Corps of Engineers

Figure A-3

1957 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

CH2MHILL

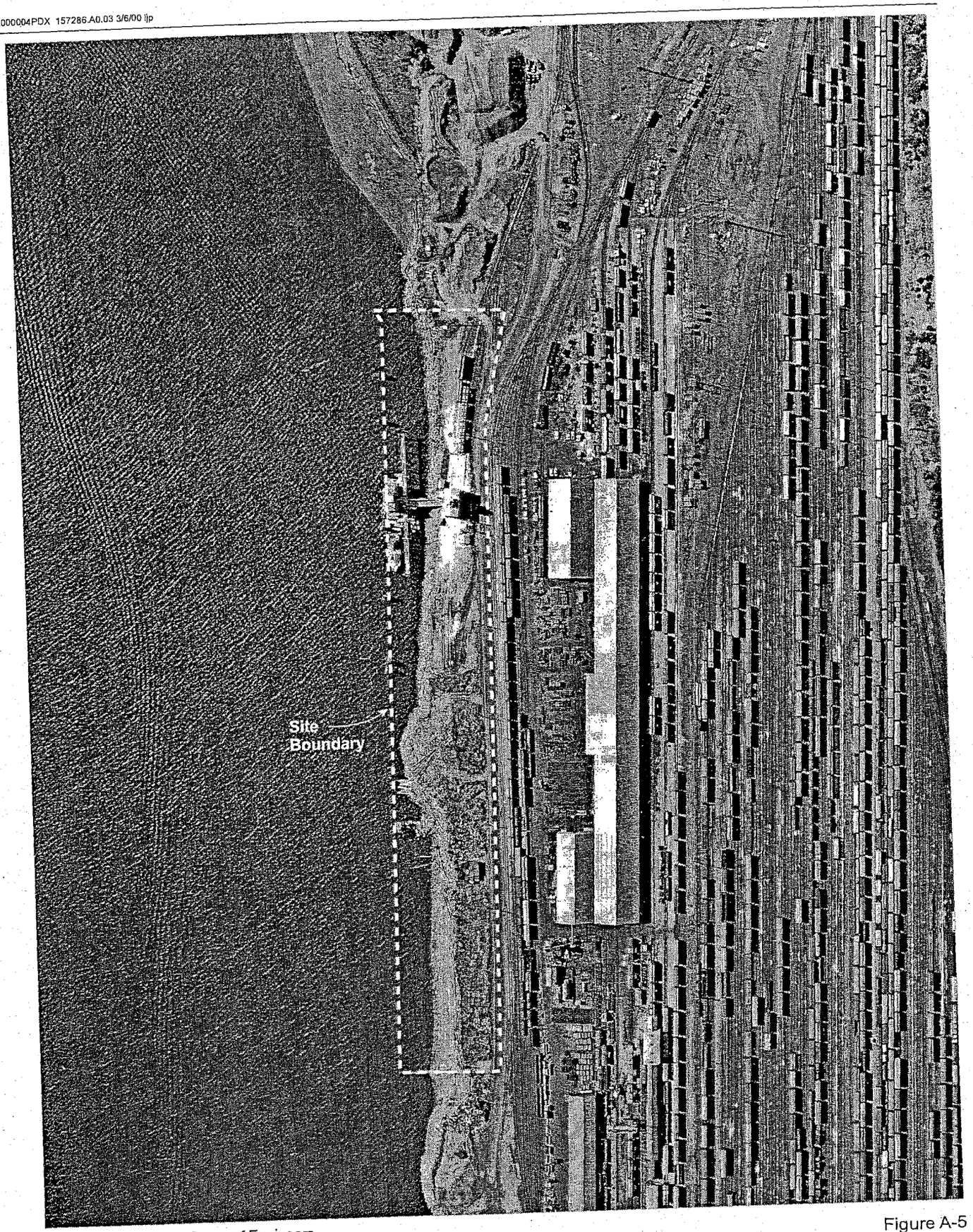


SOURCE: U.S. Army Corps of Engineers

Figure A-4

1961 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

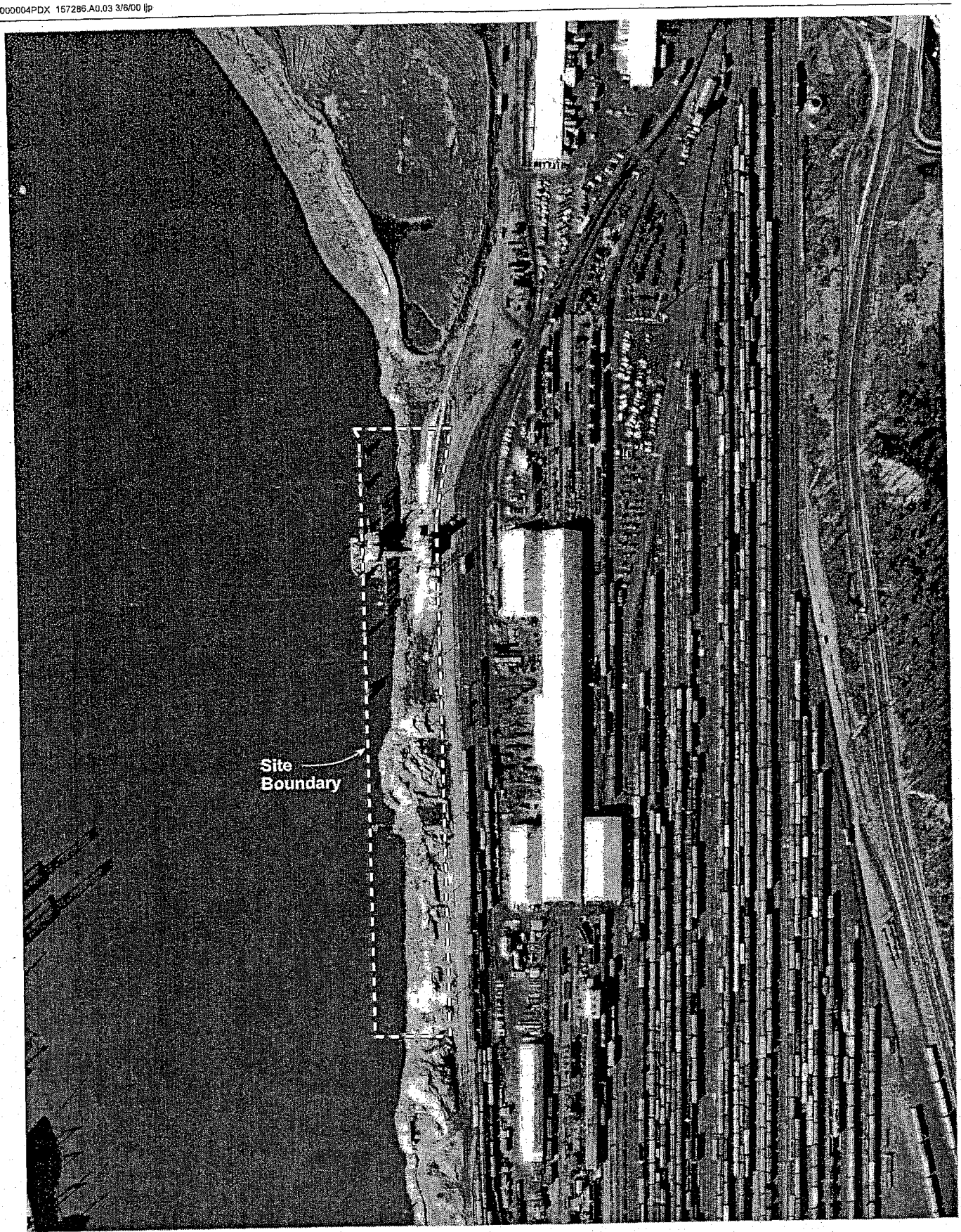


SOURCE: U.S. Army Corps of Engineers

Figure A-5

1972 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON



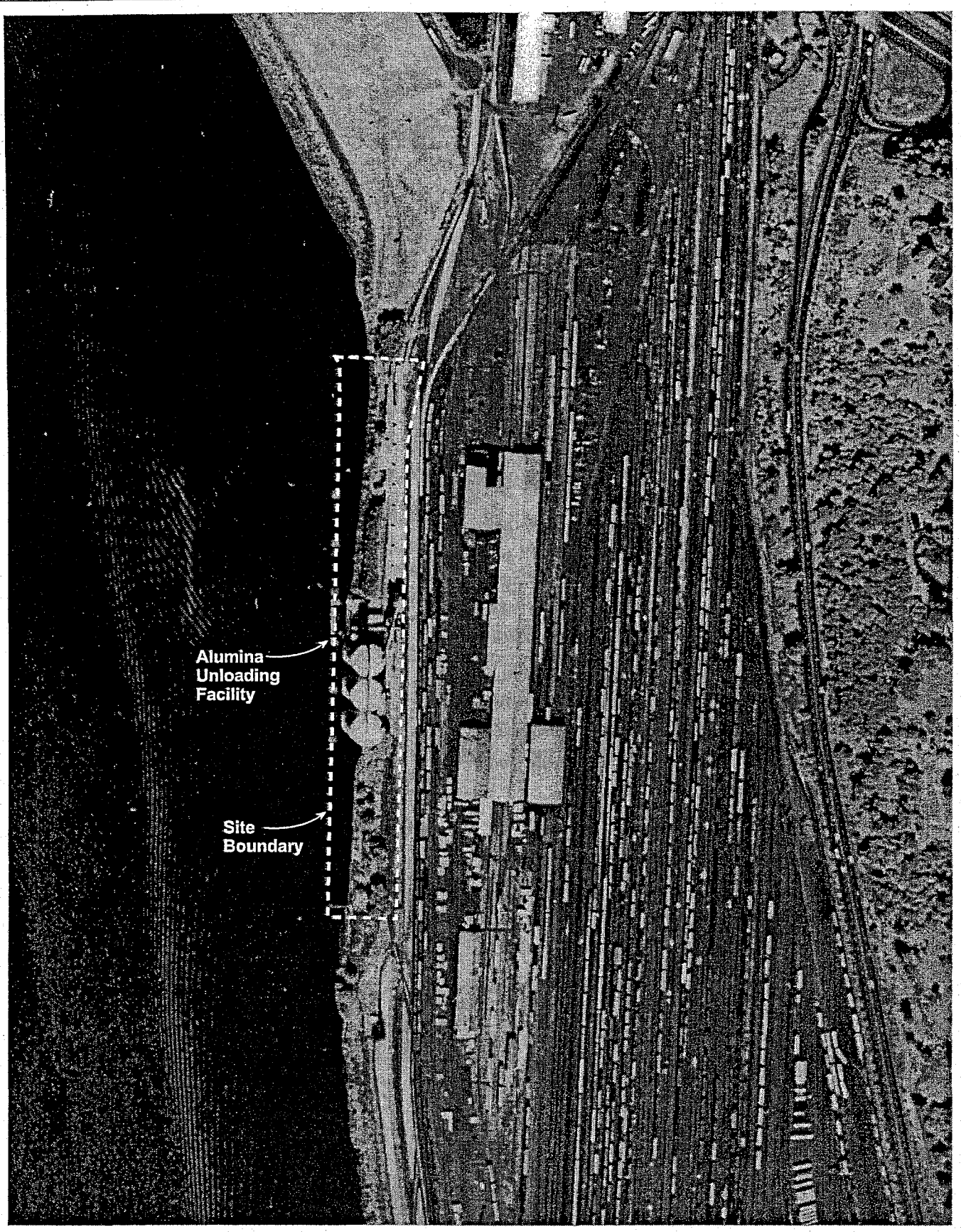
SOURCE: U.S. Army Corps of Engineers

Figure A-6

1980 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

CH2MHILL



SOURCE: U.S. Army Corps of Engineers

Figure A-7

1995 Aerial Photograph

GOLDENDALE ALUMINUM COMPANY
ALUMINA UNLOADING FACILITY
PORTLAND, OREGON

APPENDIX B

Sediment Characterization Investigation

Technico & Enviro Services Co.

(509) 735-7283 Suite 33 1776 Fowler Richland, WA 99352

April 5, 1990

Mr. Fred Rufner
Environmental Manager
Columbia Aluminum
85 John Day Dam Road
Goldendale, Washington 98620

RE: PORTLAND UNLOADING FACILITY PITCH SURVEY IN THE SEDIMENTS ADJOINING THE UNLOADING DOCK

Dear Mr. Rufner:

This letter provides documentation of the results obtained during our March 18th, 1990 survey of the subject facility.

Field Methods

A Wildco sediment coring device was used to take samples of the river bottom sediments immediately below the unloading facilities. The coring device is shown in Figure 1, it is essentially a steel tube which contains a plastic liner. The coring device is pushed into the sediment using a 3/4" pipe handle. ce retrieved, the coring device is opened by removing the nose cone, sliding the plastic tube out of the urer and using the brass rod to remove the sediment core from the inner plastic liner. Figure 2 shows a typical sample which was removed from the river bottom adjacent to the loading facilities. This particular sample came from location 3. Figure 5 shows the sediment core obtained from location 4. All locations were very similar in that the sampler obtained a core about 1-1/2' deep, Figures 6 and 7 illustrate the removal of the typical core with the materials being placed on deck for close examination. The cores typically had this brown color to the sediment which essentially appeared very much like the color of the river itself. There was no evidence of the black coal-like pitch in any of these cores. Some alumina was detected at stations 8, 9, and 10, but it appeared to be a relatively small amount and again there was no evidence of any significant accumluation of pitch. One place where a core could not be retrieved was at sampling location 1, this was directly below an area that would recieve any wash down water from the dock itself. At this location the bottom consisted of rip rap and no sediment could be obtained with the coring device.

Conclusion

The river bottom adjacent to the unloading facility was surveyed for the presence of pitch over its entire 720 foot length. Core samples taken to a depth of 1-1/2' indicated no presence of pitch.

Sincerely,

TECHNICO & ENVIRO SERVICES COMPANY

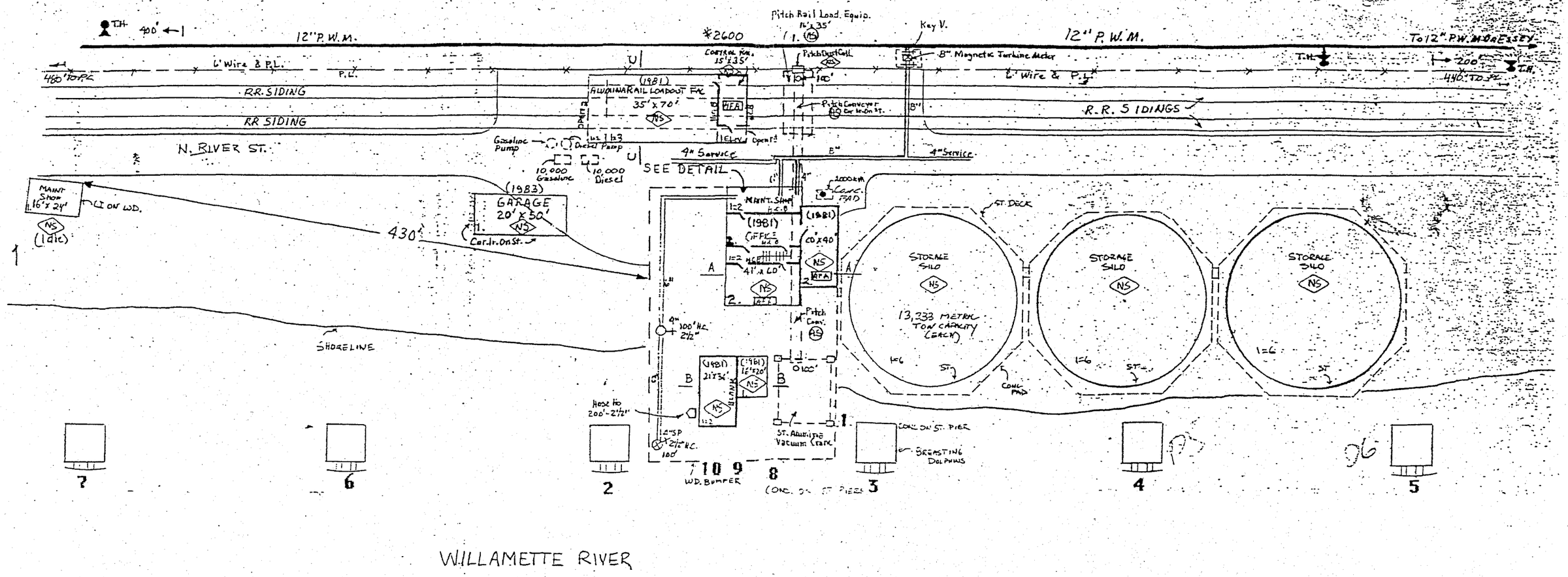
John A. Zillich

Project No. 90-6
Enclosures:

FIGURE 1.
COLUMBIA ALUMINUM PORTLAND UNLOADING FACILITY (PLAN VIEW) WITH NUMBERED SEDIMENT SAMPLING LOCATIONS

SCALE 1" = 50'

LEGEND:
1= SEDIMENT SAMPLE LOCATION



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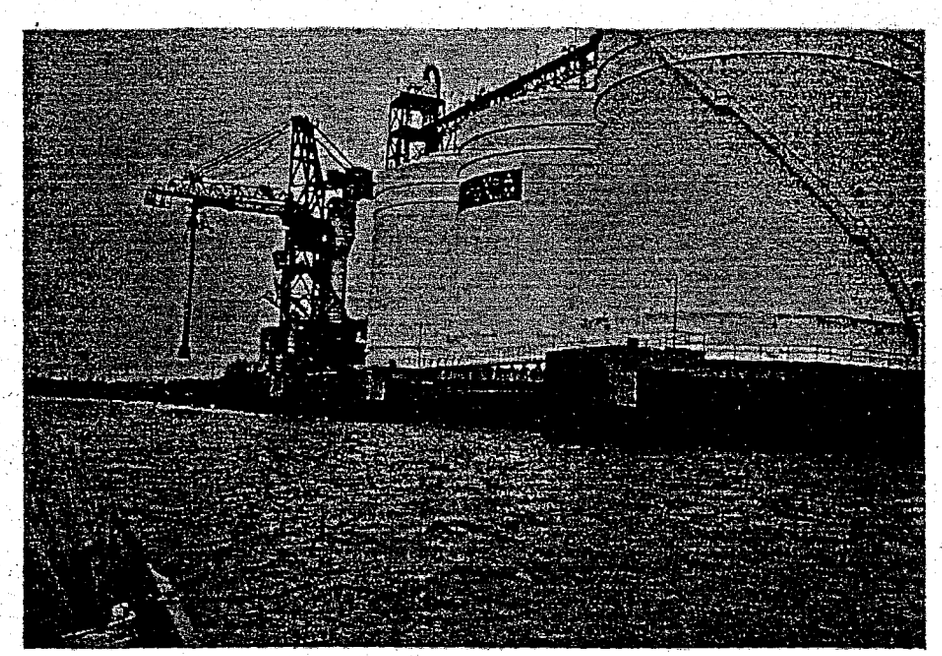

FIGURE 2. COLUMBIA ALUMINUM PORTLAND UNLOADING FACILITY RIVER VIEW WITH SAMPLING LOCATIONS 5,4 AND 3.

FIGURE 3. SEDIMENT CORE SAMPLING DEVICE

FIGURE 4. SEDIMENT CORE FROM LOCATION 3

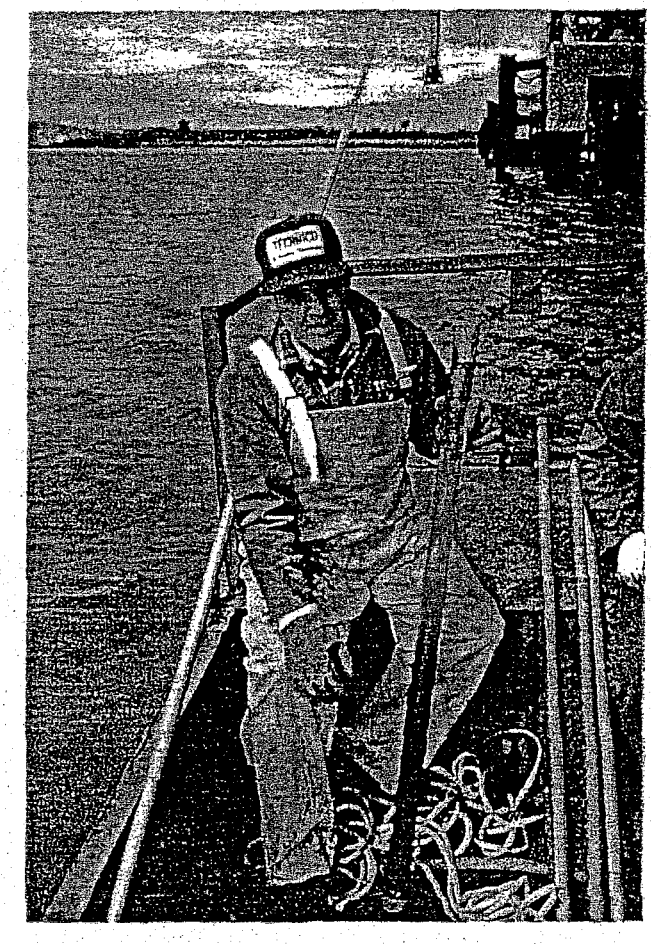

FIGURE 5. SEDIMENT CORE FROM LOCATION 4

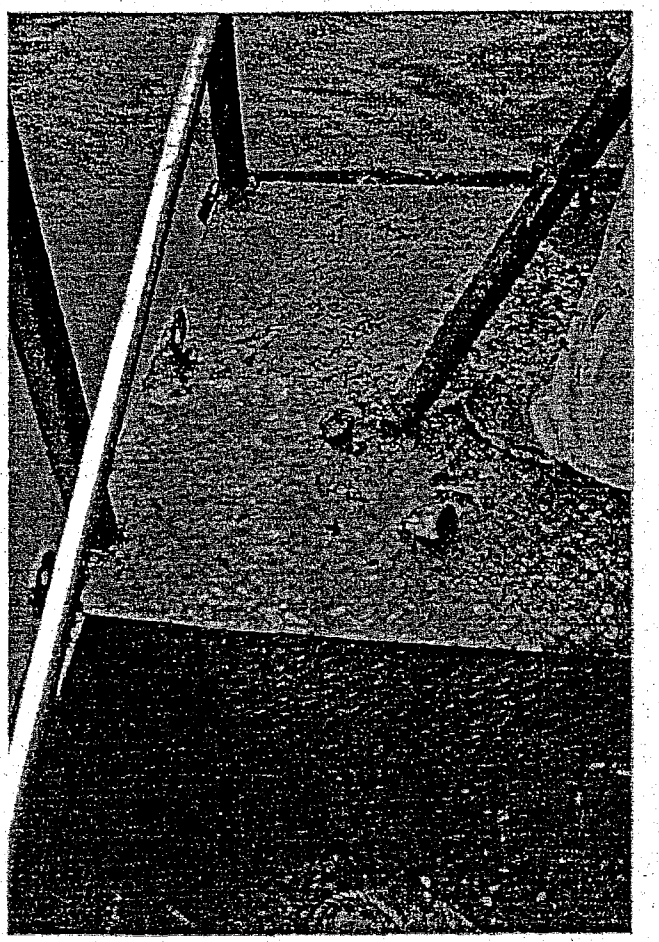

FIGURE 6. TYPICAL SEDIMENT CORE BEING PUSHED FROM SAMPLE TUBE

FIGURE 7. SEDIMENT CORE ON DECK (NOTE: COLOR IN RELATIONSHIP TO WATER AND LACK OF AND BLACK PITCH)

APPENDIX C

Phase I Environmental Site Assessment Report

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

Columbia Aluminum Corp.
Alumina Unloading Facility
2600 North River Street
Portland, Oregon

SEACOR Job No. F0132-001-01

Submitted by

SEACOR
for

Columbia Aluminum Corp.
8000 NE Parkway Drive, Suite 200
Vancouver, Washington

December 7, 1993

Science & Engineering Analysis Corporation
7614 Southwest Mohawk Street
Post Office Box 1508
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Prepared by:

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Appendix B Photographs of Site

EXECUTIVE SUMMARY

Science & Engineering Analysis Corporation (SEACOR) performed a Phase I Environmental Site Assessment of the Columbia Aluminum Corp. Alumina Unloading Facility located at 2600 N. River Street in Portland, Oregon. The field inspection, completed on November 3, 1993, consisted of a walk-through inspection of the interior and exterior areas of the property. A review of pertinent readily available records of local, state, and federal agencies, historical reviews, interviews, and a review of aerial photographs of the subject property were also conducted.

The subject property is used by Columbia Aluminum to unload alumina from ships, store the alumina, and load alumina into railcars for shipment to Columbia's Goldendale, Washington smelter. The site covers approximately five acres on the east bank of the Willamette River, just south of the Swan Island industrial area. The central portion of the property contains three large alumina storage silos and five other structures. The northern and southern portions of the site are largely undeveloped, gravel-covered property. Two railroad lines run from north to south across the length of the property. The property is adjoined on three sides by the Union Pacific Railroad's Albina Yard.

No evidence of spills or other releases of hazardous materials was observed, and no observable indications of contamination were noted. Two aboveground storage tanks are present on the site for storage of diesel fuel and waste oil. Relatively small quantities of various lubricants and other hazardous materials are also stored on the site.

No evidence of currently existing underground storage tanks (USTs) was identified on the site. Two 1,000-gallon USTs were removed from the site in 1989. Limited laboratory testing data and information from interviews with the general foreman of the facility indicate that no petroleum concentrations exceeding typical Department of Environmental Quality (DEQ) cleanup requirements were present in soil beneath the tanks. Two other USTs, one associated with a previous alumina handling facility and one associated with a former grain handling facility, were removed from the site in 1982. The general foreman of the facility reported that no evidence of contamination was observed in the tank pits at the time of removal. Two other individuals who formerly worked at the facility corroborated these reports. No record of soil sampling is available.

Review of historical site use data indicates that the current alumina handling facility was constructed in 1982 to replace an older facility located on the northern portion of the property since 1957. A grain handling facility and a large warehouse structure occupied the southern portion of the site until the mid-1960s.

A review of local, state, and federal environmental agency records indicated the presence of several known or suspected contaminated properties within one-half mile of the subject property. DEQ records indicate that leaking USTs have been removed from the adjoining railroad yard facility, and that repeated spills of petroleum from diesel locomotive fueling and associated activities have occurred in the railroad yard. However, limited information available in the DEQ files indicates that the locations of the USTs and spills have been in the southern portion of the railroad yard, approximately one mile south of the subject property. Because of the distance, contamination at these locations would not be expected to affect the subject property. Other DEQ-listed sites are one-half mile or more distant, and also appear to pose a relatively low risk of impact to the subject property.

The results of this investigation represent a review of current conditions, based on available information, as described above. The scope and limitations of the Phase I Environmental Site Assessment is consistent with the guidelines published in ASTM E1527-93, *Standard Practice for Environmental Site Assessments:*

Phase I Environmental Site Assessment Process. Based on this investigation, the subject property appeared to be well maintained and did not exhibit observable indicators of environmental impairment. The overall risk of significant environmental contamination at the subject site appears to be primarily related to two factors:

- The general industrial nature of the property and adjoining railroad yard for more than 60 years represents a potential source for environmental contamination of the site. However, no visible indicators of such contamination were observed, and available records of environmental agencies do not document any record of known contamination concerns on or adjacent to the site.

- The former presence of four USTs on the subject property represent potential sources of subsurface petroleum contamination. Limited data regarding the removal of two of the USTs in 1989 indicates that significant contamination of soil directly beneath the tanks was not present, and an interview with the general foreman of the facility who observed the tank removals supports this conclusion. Although no written documentation is available about the removal of the other two USTs in 1982, three individuals who worked at the facility at the time reported that they recalled no evidence of leaks or contamination in the tank excavations.

1.0 INTRODUCTION

This report presents the results of a Phase I Environmental Site Assessment of the Columbia Aluminum Corp. Alumina Unloading Facility at 2600 North River Street in Portland, Oregon. Science & Engineering Analysis Corporation (SEACOR) was retained by Columbia Aluminum Corp. to perform the assessment in order to determine if a potential for significant contamination exists for the subject property.

This assessment consisted of a visual inspection of the site, interviews, a historical review, and a review of the pertinent records of local, state, and federal agencies. The scope of the investigation is consistent with the guidelines published in ASTM E1527-93, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. A copy of the complete Scope of Services agreement for this investigation is presented in Appendix A.

The results of the investigations are described below.

2.0 GENERAL SITE DESCRIPTION

2.1 Description of Facility

The subject property is a facility used by Columbia Aluminum to unload alumina from ships, store the alumina, and load alumina into railcars for shipment to Columbia's Goldendale, Washington smelter. Alumina is a granular solid form of aluminum oxide which occurs naturally in such minerals as corundum, bauxite, ruby, sapphire, and emery. It is used as a raw material in the production of aluminum. Raw alumina is not currently regulated as a hazardous material under federal or state environmental laws.

The site covers approximately five acres and is located on the east bank of the Willamette River, just south of the Swan Island industrial area. Although the site is listed as having an address on North River Street, the improved street ends some distance to the south. Access to the property is obtained via a driveway across the adjoining private property to the north.

The subject property includes the following principal structures:

- A two-story shop and administration building containing office space, a lunchroom, employee locker rooms, equipment control rooms, and a maintenance shop.
- An unloader building containing a large motor and air pump equipment for unloading alumina from the holds of ships.
- Three large silos for storage of alumina.
- A railcar load-out building where alumina is transferred from the silos into railcars.
- Associated pneumatic equipment and piping for transfer of alumina from ship to silos, and from silos to railcars.
- A garage used for storage of equipment and other supplies.

- A shed used for storage of lubricants and other hazardous materials.
- A concrete pier extending over the river and several associated concrete dolphins for ship moorage.
- Two rail lines which run from north to south across the length of the property.

The central portion of the property is paved with asphalt and concrete, while the north and south portions have a gravel surface. Grass, shrubs and small trees are present along the top of the riverbank. The property is bounded by railroad yards on the south, east, and north sides.

Figure 1 shows the location of the site. Figure 2 is a site map of the subject property. Photographs of the site are presented in Appendix B.

2.2 Legal and Plat Description of Property

The subject property is described as Tax Lots 15, 33, 75, and 77. The property is located in Township 1 North, Range 1 East, Section 21 of the Willamette Baseline and Meridian.

2.3 Topographical Features

The project site is located in the Portland basin along the east bank of the Willamette River, approximately nine miles south of its confluence with the Columbia River. The United States Geological Survey (USGS) 7.5-minute topographic map for the Portland quadrangle was reviewed. The map shows the subject property to be at an elevation of approximately 30 feet above mean sea level (MSL). The topography in the immediate vicinity of the subject site is generally flat, as the site is located on the river's flood plain. Aerial photographs of the site from the 1930s and 1950s suggest that fill may have been placed on the property to raise the grade above the river's wetlands. At the western edge of the subject property, the bank slopes steeply to the river approximately 15 feet below. Bluffs rising to an elevation of 100 feet or more are located approximately one-quarter mile to the east.

The Portland area receives an average of about 40 inches of precipitation per year. In an average year, about 70 percent of precipitation occurs within a five-month period from November through March.

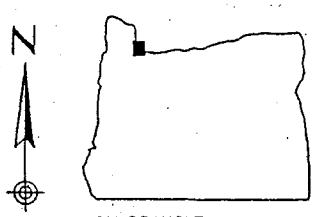
3.0 HISTORICAL REVIEW

Based on a review of historical records, it appears that the subject property has been used largely for waterfront commerce for at least the past 54 years.

3.1 Aerial Photograph Review

Aerial photographs for the years 1939, 1956, 1961, 1964, 1968, 1971, 1973, 1977, 1980, 1984, 1986, 1988, 1990, and 1992 were reviewed at Northern Light Studio in Portland. Historic aerial photographs are a valuable tool for evaluating former property uses, since the general type of activity on a property can often be discerned from the type and layout of structures visible in the photograph. However, specific elements of a site operation cannot normally be determined from the photographs, and the structures visible in the photograph cannot be definitively linked to other property records such as street addresses or title records. By reviewing a chronological series of aerial photographs, it is possible to discern the general type and trend of property use and development over a period of time. However,

Reference: U.S. Geological Survey, 7.5 min. Portland Quadrangle, 1977.

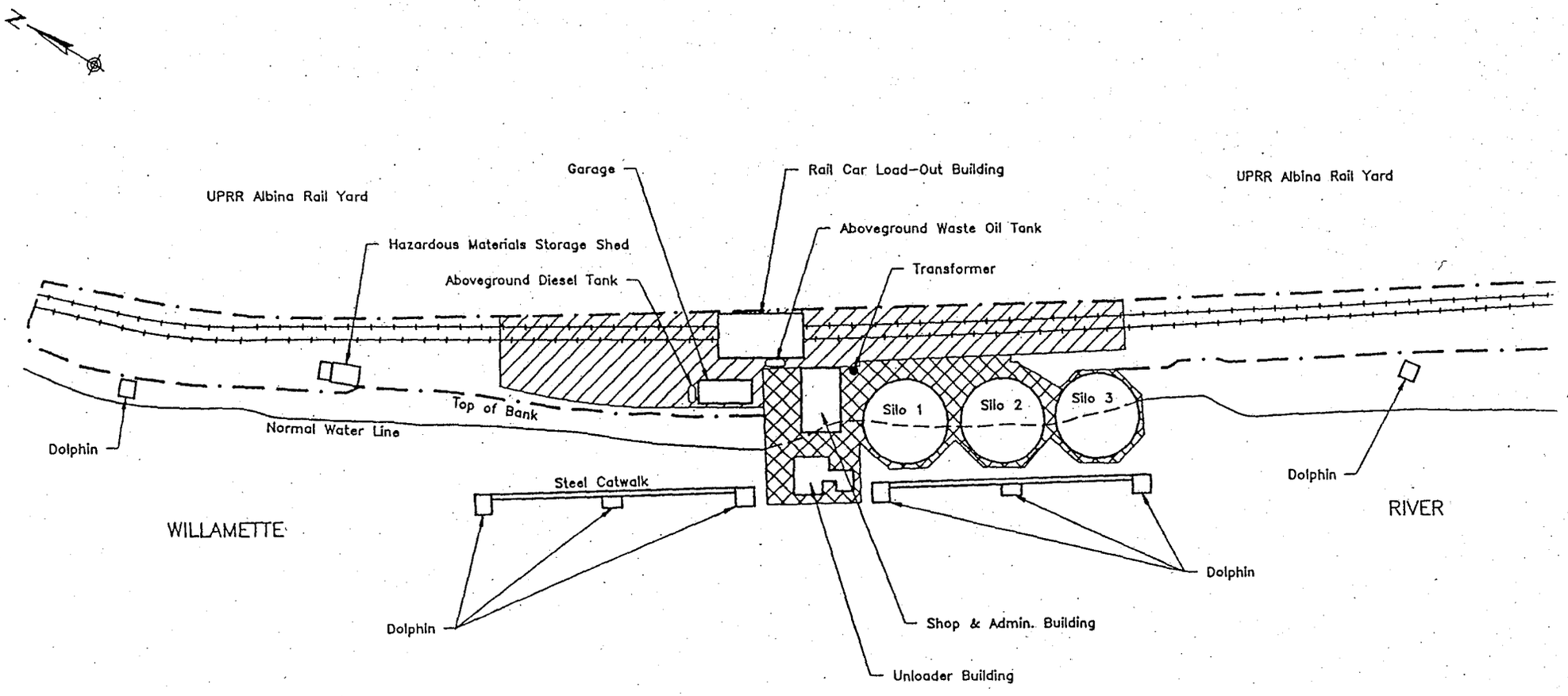


QUADRANGLE LOCATION

1000 0 1000 2000

Scale in Feet

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	VICINITY MAP	FIGURE: 1
	JOB: F0132-001-01 DRAWN: KPW DATE: 10/04/93	APPROVED: RPS DATE: 11-9-93	



LEGEND

- Asphalt – Paved Area
- Concrete Area
- Subject Property Boundary

120 0 120 240

Scale in Feet

SEACOR ENVIRONMENTAL ENGINEERING
TUALATIN, OREGON

COLUMBIA ALUMINUM CORPORATION
ALUMINA UNLOADING FACILITY
2600 N. RIVER STREET
PORTLAND, OREGON

SITE PLAN

JOB: F0452-001-01 DRAWN: KPW DATE: 11/19/93 APPROVED:

since each photograph provides only a snapshot of the area at the time the photograph was taken, it is not possible to determine with certainty the uses of a specific property during the period between photographs.

Observations of photographs reviewed for the subject property are listed below:

- The 1939 photograph showed a dock in the river at approximately the location of the current Columbia Aluminum pier. A large warehouse-type structure is visible extending from that point southward along the riverbank for approximately 1,000 feet, occupying both the southern portion of the current Columbia Aluminum site and a large area of the adjacent property to the south. A small boat moorage was observed in the river adjacent to the northern portion of the subject property. The northern portion of the property was undeveloped vacant land, partially wooded and partially covered by unvegetated soil which appeared to be fill placed on the site. Sediment dredged from the river bottom has often been used as fill material along the waterfront in the Portland area. Additional structures were present along the riverbank approximately three-quarters of a mile to the south, and approximately one-quarter of a mile to the north. Railroad yards were present to the east, although they were less extensive than they currently are.

- The 1956 photograph showed the subject property and surrounding properties to be substantially the same. However, the boat moorage in the river was no longer present, the portion of the subject property covered by trees had decreased in size, and additional development of the adjoining railroad yards had occurred.

- The 1961 and 1964 photographs showed a moderate-sized facility on the northern portion of the subject property, near the location of the current hazardous materials storage shed. Based on information obtained from other sources, this appears to have been the original alumina handling facility on the property. The photograph shows the facility to include a dock in the river, some sort of overhead piping or conveyance between the dock and the shore, and two small buildings adjacent to railroad lines through the site. No other significant changes to the subject property were visible. A large warehouse structure was added on the railroad yard property just east of the subject site.

- In the 1968 through 1977 photographs, the large warehouse was no longer present on the southern portion of the property. The subject property appeared to be vacant except for the alumina unloading facility on the northern portion. The facility one-quarter mile to the north was also no longer present. Other surrounding properties appeared to be generally unchanged.

- In the 1980 photograph, the area of the subject property occupied by the current facility appeared to have been cleared and graded. No other significant changes were noted.

- In the 1984 through 1992 photographs, the subject property and surrounding properties appeared generally as they do today. The old alumina facility on the northern portion of the property was no longer present in 1984, and the current facility was visible.

3.2 Ownership Record Review

Ownership records for the subject property were reviewed for the years 1942 to 1993. In 1952, the property owner was listed as Oregon/Washington Railroad and Navigation Co. Listed property transfers after 1942[1] are as follows:

- 1959, Oregon/Washington Railroad and Navigation Co. sold to Union Pacific Railroad.
- 1964, Union Pacific Railroad sold to Harvey Aluminum Co.
- 1987, Commonwealth Aluminum Corp. sold to Columbia Aluminum Corp.

3.3 City Directory Review

Reverse-index directories (R.L. Polk's City Directories) were reviewed at the Multnomah County Library to identify past occupants of the subject property and adjacent properties. Directories were reviewed for the years 1940, 1955, 1960, 1965, 1970, 1975, 1980, and 1985. The 1940, 1955, and 1960 directories included no listings north of the 1600 block of North River Street. Subsequent directories included the following listings:

1965	1900 North River Street	Oregon Portland Cement
	2000 North River Street	Pacific Building Material (concrete plant)
	2100 North River Street	Union Pacific Dock
	2240 North River Street	NW Dock & Elevator (grain elevator)
	2600 North River Street	General Ore, Inc.
1970	1900 North River Street	Oregon Portland Cement
	2600 North River Street	General Ore, Inc.
	3005 North River Street	Willamette Hi Grade Concrete
1975	1900 North River Street	Vacant
	2600 North River Street	General Ore, Inc.
1980	2600 North River Street	General Ore, Inc.
1985	2600 North River Street	Martin Marietta Aluminum
	3000 North River Street	Vacant

3.4 Interviews

Mr. Donald Leffler, general foreman for the Columbia Aluminum unloading facility, was interviewed about the history of the facility. Mr. Leffler stated that he had worked at the facility for Columbia Aluminum and its predecessor companies for 28 years. According to Mr. Leffler, the current facility was constructed in 1982 to replace a smaller alumina handling facility on the north portion of the subject property. The old facility had been in operation since at least 1957, he said. The southern portion of

[1] Information was obtained by SEACOR employees from the Multnomah County Assessor's Office and is merely intended to be a review of past ownership. This should not be considered to be a chain-of-title as performed by qualified title professionals.

the property, where the current facility is located, was formerly occupied by a grain handling facility. According to Mr. Leffler, the grain facility burned in 1966.

Mr. Leffler said two 1,000-gallon underground storage tanks (diesel and gasoline) were removed from the site in 1989. He said two other underground storage tanks (USTs) had been previously removed from the site. A 1,000-gallon UST was removed in approximately 1982 from the old facility when it was demolished after construction of the new facility. At about the same time, a 1,000-gallon UST was removed from the site of the former grain facility during construction of Columbia Aluminum's new facility.

Mr. Leffler said the facility had always used various lubricants for its loading and unloading equipment, as well as small quantities of paint, and solvent for parts cleaning. "Stoddard" solvent was used until about 1989. Waste solvent, approximately one drum every two years, was shipped to the Goldendale smelter where off-site disposal was arranged. Since 1989, the company has used solvent supplied by "Safety Kleen."

Mr. Leffler said the facility is occasionally used for transfer of coal tar pitch from ships to railcars for shipment to the Goldendale smelter. He said the subject property is only used as an emergency backup location for pitch handling when Columbia Aluminum's usual pitch facility is unavailable. He said pitch has been handled at the facility only once since 1988. From 1982 to 1988, approximately five shiploads of coal tar pitch per year were handled at the facility. The pitch was not stored on the site, but was transferred directly from the ship to railcars. Pitch was not handled at the former facility on the northern portion of the site, Mr. Leffler said.

SEACOR interviewed two other individuals regarding removal of the former USTs. Mr. Larry Fry, a former employee of Martin Marietta Aluminum who worked at the site from 1981 to 1986, stated that he personally observed removal of the UST at the old alumina facility in the fall of 1981. He said he recalled that the tank had been located in the north portion of the subject property, near the office shack for the old facility. He said the tank appeared to be intact with no obvious holes when it was removed, and that he did not recall any visible evidence of fuel leakage in the tank excavation. Mr. Fry said the UST at the former grain facility had been removed shortly before he became employed at the site, probably in the spring of 1981. He said he had been told that the tank still contained fuel at the time of removal, indicating that major leaks had not occurred. He said he had not heard any discussion about leaks or contamination being observed at the time of removal, and took that as an indication that none existed. Mr. Roger Gardner is an engineer formerly employed by Swan-Wooster Engineering, the firm that oversaw demolition of the grain facility and construction of the new alumina facility. Mr. Gardner said he did not have any personal recollection regarding removal of the tanks, but was sure he would have been made aware of any significant evidence of leaks if any had been observed. Since he had not been told about such leaks, he said he assumed that none were observed.

4.0 PROPERTY INSPECTION

4.1 General Description of Subject Property

SEACOR performed the site inspection on November 3, 1993. Weather conditions during the inspection were cloudy and rainy, with a temperature of approximately 50 degrees Fahrenheit. The subject property is a narrow strip, approximately 120 feet wide, stretching 1,650 feet from north to south along the east bank of the Willamette River (see Appendix B, Photograph 1). The northern third of the site, the location of the old alumina handling facility, is gravel-covered. The only structure in this area is the

hazardous materials storage shed. The central third of the site contains the current alumina handling facility. The southern third of the site is gravel-covered and contains no structures.

The topography of the subject property was level. Along the west property boundary, the ground surface drops off sharply to the Willamette River approximately 15 feet below. Surface water flows toward catch basins in the central part of the site, and toward the river in the remainder of the site. No topographical features that would likely contribute to environmental contamination of the property were observed during the inspection.

4.2 Uses of Nearby Properties

The Willamette River forms the western border of the subject property. Adjoining property to the north, east, and south is occupied by the Union Pacific Railroad Albina rail yards. Industrial facilities are located along the riverbank approximately one mile to the north and south of the subject site. A large warehouse structure is located in the rail yard, approximately 200 feet to the east. Other structures associated with the rail yards are located further to the east and southeast. Subsurface contamination is sometimes associated with rail yards because various hazardous materials have, over the years, been transported by rail, and because of railcar maintenance activities. However, as observable from the subject property and public right-of-way, no obvious signs of significant environmental contamination was apparent on the adjacent property.

4.3 Exterior Storage Areas

One area of the asphalt parking lot, north of the garage building, was used for storage of various spare equipment. No evidence of hazardous materials was observed in this area.

A 500-gallon aboveground tank located on the north side of the garage building stores diesel fuel for use in vehicles at the facility (Photograph 6). The tank was installed in 1989. Another aboveground tank adjacent to the west wall of the railcar load-out building is used to store waste oil (Photograph 7). The tank has a capacity of 360 gallons and is used to accumulate waste oil of all types, including motor oil, hydraulic oil, and lube oil. Waste oil is removed from the tank for off-site recycling by a contractor approximately twice a year, according to Mr. Leffler. The tanks are located on concrete pads surrounded by asphalt paving. There are no containment berms around the tanks. No evidence of spills or leaks from the either tank were observed.

No other exterior storage areas or evidence of storage areas were observed.

4.4 Exterior Waste Disposal Areas

A small accumulation of alumina was observed on the soil surface between silo #2 and silo #3. No other exterior waste disposal areas were observed.

4.5 Off-Property Sources of Surface Contamination

No streams pass through the subject property. Surface runoff from the adjoining railroad yard may flow onto the subject property. However, no evidence of surface water flow, nor any evidence of surface discoloration was observed on the immediately adjoining areas of the railroad yard. The Willamette River has the potential to serve as a pathway for contaminants to migrate onto the subject property. However, no visible indications of contamination were observed on the river or along the riverbank on the west perimeter of the subject property.

4.6 Exterior Subsurface Structures

Several stormwater catch basins were observed in the area of the tracks to the south of the railcar load-out building. According to Mr. Leffler, these catch basins drain to a subsurface storm water system which, in turn, discharges to the river. Each of the drains contained a clear liquid which appeared to be water. Mr. Leffler said an application for a NPDES discharge permit is currently in process. He said no sampling of the discharge has occurred to date.

Two additional storm water lines were reported by Mr. Leffler to pass beneath the property, carrying stormwater from properties to the east toward the river.

Hydraulic car mover systems are located adjacent to each of the railroad tracks through the property. The car mover systems propel railcars through the load-out building at a prescribed rate to facilitate loading of alumina into the cars. Hydraulic pumps are located next to each track on the south end of the load-out building. Subsurface hydraulic lines run to the north and south along the tracks from the main pumps.

No evidence of water wells, septic tanks, or other subsurface structures was observed on the subject property.

4.7 Underground Storage Tanks

No reports or other evidence which would indicate the current presence of USTs were discovered in the investigation of the subject property. Two 1,000-gallon USTs were located near the northwest corner of the railcar load-out building until 1989. One tank stored diesel and was replaced by the aboveground tank currently located near the garage building. The other tank stored gasoline. According to Mr. Leffler, gasoline needed for vehicles at the facility is now supplied by an off-site commercial fueling station. Mr. Leffler provided a copy of a hand-written report of laboratory testing from Coffey Laboratories of Portland. The laboratory report does not indicate specific sampling locations or methods, and does not specifically identify the Columbia Aluminum site or the removed USTs. However, Mr. Leffler stated that this report summarizes the results of eight soil samples collected from the pit where the USTs were removed. The laboratory reports indicate that concentrations of Total Petroleum Hydrocarbons (analyzed by modified EPA Method 418.1) in the eight samples ranged from 5.3 to 8.4 milligrams per kilogram (mg/Kg). The report also contains the notation "okayed by Larry Frost - DEQ." At the time of the UST decommissioning in May 1989, the Department of Environmental Quality (DEQ) had not established numeric cleanup levels for petroleum in soil. Adequate cleanup of petroleum-contaminated soil at UST sites was typically judged by DEQ staff on a "sight and smell" basis. Current cleanup levels under Oregon's Soil Matrix Cleanup Rules (OAR 340-122-305 through 340-12-360) range from 40 to 130 mg/Kg for gasoline contamination and from 100 to 1,000 mg/Kg for diesel or other petroleum products. The reported petroleum hydrocarbon concentrations in the 1989 samples were well below these current cleanup requirements.

Two other USTs are reported to have been formerly located on the site. A 1,000-gallon gasoline UST was reportedly located at the old alumina handling facility at the site. The old facility was located on the northern portion of the subject property, generally in the vicinity of the current hazardous materials storage shed. According to Mr. Leffler, the former UST was located near the east property boundary, approximately 150 feet south of the current hazardous materials storage building. He said the UST was removed in 1982 after completion of the new alumina handling facility.

During construction of the new alumina handling facility in 1982, another 1,000-gallon gasoline UST was discovered which had apparently been part of the grain handling facility located on the site until 1966. This UST was located in the area of the current railcar load-out building. Mr. Leffler said this UST was also removed in 1982.

Mr. Leffler said he observed the removal of both tanks, and that no evidence of contamination was observed in the pits at the time. Two other individuals who worked at the site during the early 1980s also stated they did not believe any evidence of contamination had been observed at the time of the tank removals. No documentation of the 1982 UST removals is available.

5.0 BUILDINGS AND STRUCTURES

5.1 General Description

The primary structures on the site are the three large silos used for storage of alumina. Interiors of the silos were not inspected. Five other buildings are located on the site. These are described below:

Unloader Building. This concrete block building is located on the concrete pier over the river, near the ship mooring location. The unloader building contains primarily a large motor/vacuum pump system which provides pneumatic lift to remove alumina from ship holds and transfer it to the silos for storage (Photograph 3). A small fireproof cabinet in the building is used to store quart-size bottles of lubricants for routine maintenance of the equipment. The unloader building also includes a small separate room known as the Unloader Motor Control Center (MCC). The Unloader MCC includes electrical switch panels for controlling the unloader equipment, as well as two small electrical transformers.

Railcar Load-Out Building. The load-out building is a large metal shed, open on the north and south ends to allow railcars to pass through the structure (Photograph 2). Two sets of tracks pass through the building, with an asphalt-paved surface along the tracks. Suspended above the tracks within the building are a control room where the car-moving and loading equipment is controlled. The load-out building also contains alumina transfer piping which attaches directly to the loading hatches of the railcars. This allows transfer of the alumina into the cars with a minimal amount of dust or spillage. Only small amounts of alumina were observed to be accumulated on and adjacent to the tracks.

Shop and Administration Building. This is a two-story concrete block building with concrete floors. The ground floor contains the following:

- Lunchroom and employee locker rooms
- Electrician's workshop, including a fireproof cabinet used for storage of small quantities of spray paint, varnish, and lubricating oil.
- First floor Motor Control Center (MCC), the location of various electrical switches and controls for the motors which operate the alumina handling system. Two small electrical transformers were also present in the first floor MCC.
- Maintenance shop where the primary maintenance and repair of the facility's equipment and vehicles are performed (Photograph 8). A parts washing solvent bin was observed. According to Mr. Leffler, solvent is supplied by Safety Kleen, and spent solvent is removed from the bin by Safety Kleen. Other hazardous materials observed in the maintenance shop included approximately six gallons of antifreeze, one drum of motor oil, one drum of hydraulic oil, and

a small container of grease. Some minor oily staining was evident on the concrete floor, and absorbent material was observed in a couple of areas, apparently placed to clean up small spills of oil. Generally, the shop appeared quite clean and well organized, with relatively small quantities of hazardous materials present.

The second floor of the Shop and Administration Building contained the following:

- Administrative offices for the facility.
- Storage room containing various small equipment parts and a metal cabinet used for storage of spray paint.
- Second floor MCC, similar to the first floor MCC.
- Electrical room where two electrical transformers were located to receive and distribute the main electric power for the facility.

Garage Building. The garage building is used to store rubber-tired front loaders, forklifts, a spare engine for the alumina handling equipment, and various maintenance supplies. The garage building had a concrete floor. No hazardous materials storage was observed in this area.

Hazardous Materials Storage Building. This is a small metal shed with a concrete floor (Photograph 4). Stored in the building were eight 55-gallon metal drums of various lubricants and approximately twenty 5-gallon pails of various petroleum products (Photograph 5). No evidence of spills was observed. No waste materials were observed in the building. According to Mr. Leffler, the only hazardous materials waste produced at the facility is waste oil of various types. All waste oil is placed into the aboveground waste oil storage tank pending pickup for off-site disposal by a contractor.

5.2 Interior Storage Areas

Primary hazardous materials storage at the facility is in the hazardous materials storage building. Small quantities of lubricants and other hazardous materials are stored in the maintenance shop, electrician's shop, and the unloader MCC room. When used, stored, and disposed of in the manner for which they are intended, small quantities of chemicals such as those observed on the subject site do not ordinarily represent a significant environmental contamination risk.

5.3 Interior Waste Disposal Areas

Interior waste disposal areas were limited to those typical of office and commercial structures. No evidence of improper disposal of chemicals was observed.

5.4 Interior Discharges

No potential sources of surface contamination were observed within the subject site's structures.

5.5 Interior Subsurface Structures

Potential migration pathways for contaminants to the subsurface environment observed in the interior of the buildings were limited to plumbing drainage systems typical of office and commercial structures. No evidence of improper disposal of chemicals was observed.

5.6 Asbestos

A preliminary asbestos assessment was included in this investigation. The asbestos assessment consisted of visual observation of the accessible structural areas and exposed material which most commonly contain asbestos. Findings and conclusions are based upon limited access to all areas. Hidden spaces between walls and similar conditions may, at times, harbor asbestos-containing materials (ACM).

Because of the 1982 construction date of the facility, it is not expected that significant amounts of ACM would be present in the structure. Manufacture of most ACM building products was discontinued in 1979. No suspected ACM was observed in the unloader building, load-out building, garage, or hazardous materials storage building. Some insulated water piping was observed in the shop and administration building. Based on appearance and feel, the insulation appeared to be fiberglass. However, ACM insulation may be present in some segments of the pipe runs, particularly at pipe joints, elbows, and fittings. All of the observed insulation was in good repair.

Vinyl flooring was present in the office areas. Such flooring, the paper backing on the flooring material, or the mastic used to adhere the flooring to the subfloor sometimes contains asbestos.

The office area had a ceiling of suspended tiles. There is a potential that the ceiling tiles or insulation in the area above the suspended tiles may contain asbestos. However, based on the construction date of the building, this is unlikely.

Asbestos is generally believed to become a hazard to human health primarily if the fibers are airborne and inhaled. As long as ACM is not exposed to physical disturbance and is in good condition, it normally presents minimal hazard to building occupants.

Federal and state environmental regulations require that friable asbestos be removed prior to demolition and renovation which involves disturbing the asbestos-containing materials. This work must be done by licensed asbestos abatement contractors in most cases. Non-friable asbestos-containing materials, such as certain floor coverings, roofing materials, and cement products, must also be handled in accordance with the regulations, but the requirements vary depending on specific circumstance. Specific discussions regarding potential health risks of asbestos-containing materials at this property and evaluations of indoor air quality, development of asbestos abatement specifications, and/or cost estimates were not part of this project.

5.7 Polychlorinated Biphenyls

Electrical transformers, capacitors, and similar equipment may contain polychlorinated biphenyls (PCBs) in dielectric insulating fluids within the unit. The federal Toxic Substances Control Act (TSCA) generally prohibited the domestic manufacture of PCBs after 1979. There is potential for the dielectric fluid in electrical equipment manufactured prior to that date to contain PCBs.

Several transformers were located on the subject property. Small transformers were present in the three motor control centers. According to Mr. Leffler, all of these units were dry-type transformers that do not contain insulating fluids. Thus, these transformers do not contain PCBs.

One large transformer containing insulating oil is located outside of the southeast corner of the Shop and Administration Building. According to Mr. Leffler, the transformer was purchased in 1982 and contains less than 1 part per million PCBs in the insulating oil.

No leakage, staining, soil discoloration, or stressed vegetation was observed on the ground surface around the transformer.

Fluorescent light fixtures were present throughout the structures on the subject property. Fluorescent light fixtures have ballasts which may contain PCBs. Light fixtures manufactured prior to 1979 may contain PCBs. Due to the 1982 construction date of the facility, the light fixtures at the facility are unlikely to include PCB-containing ballasts. Individual fixtures were not inspected in this survey.

5.8 Air Emissions

The facility has a current air contaminant discharge permit from the DEQ for emissions from eight different locations within the facility. Emissions of a total of 6.8 tons of alumina dust per year are permitted from the suction unloader, unloader airlift, the three silos, the reclaim airlift, and the railcar load-out building. The permit also allows emission of up to 10 tons per year of pitch particulate from the pitch loading filter. The pitch emission rates are calculated on 100 hours per year of pitch handling operations.

6.0 ENVIRONMENTAL RECORDS REVIEW

6.1 Environmental Protection Agency Records

The Environmental Protection Agency's (EPA) National Priority List (NPL) of hazardous waste sites, dated October 13, 1993, indicates no sites located within a one-mile radius of the property. The NPL list is a federal priority listing of sites where no sources of private cleanup funds have been identified, and where releases or threatened releases of hazardous materials pose a threat to human health or the environment.

The EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) inventory of potential hazardous waste sites under investigation was reviewed. This list includes sites that are, or have previously been, evaluated for possible inclusion on the NPL. The CERCLIS inventory, as of October 8, 1993, lists no sites located within one-half mile of the subject site.

6.2 Department of Environmental Quality Records

The DEQ Environmental Cleanup Division's listings of known or suspected contaminated sites were reviewed. The Inventory of Hazardous Substance Sites lists sites where a confirmed release of hazardous substances has occurred and where, based on a Preliminary Assessment and hazard ranking, it has been determined that further investigation, removal, or remedial action is required. As of June 16, 1993, the Inventory list included no sites within a one-mile radius of the subject property.

The DEQ Environmental Cleanup Division also maintains a Confirmed Release List of sites where confirmed releases of hazardous substances have occurred, but where no further action is required or where no Preliminary Assessment and hazard ranking have yet been completed. As of June 16, 1993, the Confirmed Release List included no sites within a one-mile radius of the subject property.

The DEQ's Environmental Cleanup Site Information (ECSI) database lists known or suspected contaminated sites. This listing includes all sites currently or previously reported by the DEQ as potentially having a release. Listing of a site on the ECSI database does not necessarily indicate that a release has occurred or that the site poses a risk to nearby properties. The ECSI database, as of October 14, 1993, includes five sites within a one-half-mile radius of the subject site:

- Union Pacific Railroad Yard, 2525 N. Larrabee Avenue. The railroad yard adjoins the subject property on the north, east, and south sides, but covers a large area extending one-half mile north and more than a mile south of the subject site. According to information reviewed in DEQ files, this site is listed because of repeated known spills of petroleum during the 1970s. The DEQ data indicates that most of the spills have been cleaned up, but that there is a potential that soil and surface water are contaminated by petroleum. The exact location of the reported spills on the railroad property could not be determined from information in the DEQ file, but the locomotive fueling facilities referenced in the file are believed to be in the southern portion of the railroad yards, approximately one mile south of the subject property.

- Sulzer-Bingham, 2800 NW Front Street, approximately one-half mile southwest of the subject property. This metals fabrication facility has confirmed soil and groundwater contamination by petroleum and solvents, with up to 240 micrograms per liter (μg/L) of solvent reported in the groundwater. Because the Willamette River is located between this site and the subject property, it appears unlikely that the contamination would impact the subject property.

- Industrial Battery Building, 3166 N. Greeley Avenue, approximately one-half mile northeast of the subject property. This site, formerly used for battery manufacturing, has lead-contaminated soil. There is no report in the DEQ file of groundwater impact. Because lead is a relatively immobile contaminant, it is not expected that the lead contamination at this site would affect the subject property.

- Henry Wong Property, N. Prescott Street and Albina Avenue, approximately one-half mile northeast of the subject property. This site is listed because of a complaint received from the DEQ in 1988 alleging the improper disposal of paint solvent on the ground. There was no information in the DEQ file to indicate that any further investigation of the site had occurred. Although the site is located at a potentially upgradient point relative to the subject property, the distance of the site reduces the potential that contamination from the site would reach the subject property.

- DeWitt Construction. The DEQ's ECSI database lists this site at 3125 NW Front Avenue, approximately one-half mile west of the subject property. However, information reviewed in the DEQ file lists the address as 10910 NE Holman Street, several miles to the east of the site. No other information about the site was present in the DEQ file. The presence of the Willamette River between the subject property and the NW Front Avenue address minimizes the risk of contamination reaching the subject property from this site.

6.3 Underground Storage Tank Records

The DEQ's list of permitted UST facilities, as of September 28, 1993, lists no registered underground storage tanks at the subject site address. Three permitted USTs are listed at the Union Pacific Albina Railroad Yard. Three decommissioned USTs are listed at the Lone Star Northwest, Swan Island Plant at 3005 N. River Street.

The DEQ UST Cleanup List for Leaking Underground Storage Tank (LUST) sites, as of October 4, 1993, showed only one record of a LUST within a one-half-mile radius of the subject site. This was the Union Pacific Railroad, Albina Yard, at 2525 N. Larrabee Avenue. According to the DEQ Northwest Region office files, petroleum-contaminated soil was removed after removal of a diesel UST in 1989. No reported impact to groundwater was indicated by the data in the file. The exact location of the LUST on the railroad property could not be determined from information in the DEQ file, but the locomotive

fueling facilities referenced in the file are believed to be in the southern portion of the railroad yards, approximately one mile south of the subject property.

The Portland Bureau of Fire and Emergency Services was contacted regarding UST permits issued for the subject property and adjacent sites. According to the bureau's UST permit file, one permit for installation of a 1,000-gallon UST was issued to the address of 2600 N. River Street in 1961. A permit for removal of two USTs was issued in April 1989. No other permits were on file for addresses of 2000 through 3000 on N. River Street.

6.4 Hazardous Waste Activity

Generators of hazardous waste are required under the federal Resource Conservation and Recovery Act (RCRA) to obtain a generator identification number from the EPA. The EPA's RCRA Notifiers list, dated February 10, 1993, lists the Union Pacific Railroad, Albina Yard, at 2525 N. Larrabee Avenue, as a registered generator of hazardous waste. No other generators are listed within one-half mile of the subject property.

6.5 Hazardous Materials Incidents

The Oregon State Fire Marshal's list of emergency hazardous material responses dating to June 15, 1993 was reviewed. No record of an emergency response for hazardous materials to the subject property or adjacent properties was found. Such records were not maintained by the State Fire Marshal prior to 1987.

6.6 Water Supply and Sewage Disposal

Potable water supply and sewer service for the subject property are provided under contract by the neighboring Union Pacific Railroad, Albina Yard. According to Mr. Chris Stern of the railroad, the Albina Yard is, in turn, connected to City of Portland municipal water and sewer services.

7.0 SUMMARY AND CONCLUSIONS

SEACOR performed a Phase I Environmental Site Assessment of the Columbia Aluminum Corp. Alumina Unloading Facility located at 2600 N. River Street in Portland, Oregon. The assessment consisted of a walk-through inspection of the exterior and interior areas of the property on November 3, 1993. Historical interviews, as well as a search of the pertinent records of local, state, and federal agencies, were conducted.

The subject property is used by Columbia Aluminum to unload alumina from ships, store the alumina, and load alumina into railcars for shipment to Columbia's Goldendale, Washington smelter. The site covers approximately five acres on the east bank of the Willamette River, just south of the Swan Island industrial area. The central portion of the property contains three large alumina storage silos and five other structures. The northern and southern portions of the site are largely undeveloped, gravel-covered property. Two railroad lines run from north to south across the length of the property. The property is adjoined on three sides by the Union Pacific Railroad's Albina Yard.

No evidence of spills or other releases of hazardous materials was observed, and no observable indications of contamination were noted. Two aboveground storage tanks are present on the site for storage of diesel fuel and waste oil. Relatively small quantities of various lubricants and other hazardous materials are also stored on the site.

No evidence of currently existing underground storage tanks was identified found on the site. Two 1,000-gallon USTs were removed from the site in 1989. Limited laboratory testing data and information from interviews with the general foreman of the facility indicate that no petroleum concentrations exceeding typical DEQ cleanup requirements were present in soil beneath the tanks. Two other USTs, one associated with a previous alumina handling facility and one associated with a former grain handling facility, were removed from the site in 1982. The general foreman of the facility reported that no evidence of contamination was observed in the tank pits at the time of removal. Two other individuals who formerly worked at the facility corroborated these reports. No record of soil sampling is available.

Review of historical site use data indicates that the current alumina handling facility was constructed in 1982 to replace an older facility located on the northern portion of the property since 1957. A grain handling facility and a large warehouse structure occupied the southern portion of the site until the mid 1960s.

A review of local, state, and federal environmental agency records indicated the presence of several known or suspected contaminated properties within one-half mile of the subject property. DEQ records indicate that leaking USTs have been removed from the adjoining railroad yard facility, and that repeated spills of petroleum from diesel locomotive fueling and associated activities have occurred in the railroad yard. However, limited information available in the DEQ files indicates that the locations of the USTs and spills have been in the southern portion of the railroad yard, approximately one mile south of the subject property. Because of the distance, contamination at these locations would not be expected to affect the subject property. Other DEQ-listed sites are one-half mile or more distant, and also appear to pose a relatively low risk of impact to the subject property.

The results of this investigation represent a review of current conditions, based on available information, as described above. The scope and limitations of the Phase I Environmental Site Assessment is consistent with the guidelines published in ASTM E1527-93, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Based on this investigation, the subject property appeared to be well maintained and did not exhibit observable indicators of environmental impairment. The overall risk of significant environmental contamination at the subject site appears to be primarily related to two factors:

- The general industrial nature of the property and adjoining railroad yard for more than 60 years represents a potential source for environmental contamination of the site. However, no visible indicators of such contamination were observed, and available records of environmental agencies do not document any record of known contamination concerns on or adjacent to the site.

- The former presence of four USTs on the subject property represent potential sources of subsurface petroleum contamination. Limited data regarding the removal of two of the USTs in 1989 indicates that significant contamination of soil directly beneath the tanks was not present, and an interview with the general foreman of the facility who observed the tank removals supports this conclusion. Although no written documentation is available about the removal of the other two USTs in 1982, three individuals who worked at the facility at the time reported that they recalled no evidence of leaks or contamination in the tank excavations.

8.0 LIMITATIONS

The conclusions and recommendations in this report/assessment are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location, and are subject to the following inherent limitations:

1. SEACOR derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals having information about the site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration at the site, analysis of the data, and reevaluation of the findings, observations, and conclusions in the report.

2. The data reported and the findings, observations, and conclusions expressed in the report are limited by the scope of work. The scope of work was defined by the request of the client, the time and budgetary constraints imposed by the client, and availability of access to the site.

3. Because of the limitations stated above, the findings, observations, and conclusions expressed by SEACOR in this report are not, nor should not be, considered an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state, or local law or regulation.

4. No warranty or guarantee, whether express or implied, is made with respect to the data reported of findings, observations, and conclusions that are based solely upon site conditions in existence at the time of investigation.

5. SEACOR Phase I Environmental Assessment Reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of federal, state, or local government agencies. Any use of the Phase I report constitutes acceptance of the limits of SEACOR's liability. SEACOR's liability extends only to its client and not to any other parties who may obtain the Phase I report. Issues raised by the report should be reviewed by appropriate legal counsel.

6. The conclusions and recommendations presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such. An evaluation of subsurface soil and groundwater conditions was not performed as part of this investigation. No sampling or chemical analyses were performed or assessment of asbestos-containing materials was completed as part of this study unless explicitly stated.

7. This report is based, in part, on unverified information supplied to SEACOR by third-party sources. While efforts have been made to substantiate this third-party information, SEACOR cannot guarantee its completeness or accuracy.

LIST OF REFERENCES

Aerial Photographs:

Source: Northern Light Studio, Portland, Oregon.

Year:	Photo Identification:
1992	PO92 10-18
1990	PO90 10-17
1988	PO88 10-17
1986	PO86 10-16
1984	PO84 10-17
1980	PO80 10-30
1977	PO77 10-18
1973	PO73 10-22
1971	PO71 10-23
1968	MCW 10-31
1964	MET 11-50
1961	CM 9-54
1956	OHP 23-15
1939	No identification number

Maps Used: US Geological Survey, Portland Quadrangle, 7.5 Minute Series (topographic)

Regulatory File Source:

EPA National Priority List, October 13, 1993.

EPA CERCLIS inventory (zip codes 97209, 97210, 97217, 97227), October 8, 1993.

EPA RCRA Notifiers List (zip code 97227), February 10, 1993.

DEQ Inventory of Hazardous Substance Sites, June 16, 1993.

DEQ Confirmed Release List, June 16, 1993.

DEQ Environmental Cleanup Site Information database, October 14, 1993.

Oregon State Fire Marshal's Hazardous Material Emergency Incident Report, June 15, 1993.

DEQ Permitted Underground Storage Tank Facilities List (zip code 97227), September 28, 1993.

DEQ UST Cleanup List (zip codes 97217 and 97227), October 4, 1993.

Interview Record:

Name:	Relationship:
Larry Fry	Jeddeloh Hays, Inc., (223-7799), former employee of General Ore (Martin-Marietta), December 2, 1993.
Roger Gardner	Engineer (635-9461), former employee of Swan-Wooster Engineering, December 2, 1993.
Donald R. Leffler	Columbia Aluminum, General Foreman, Portland Alumina Unloading Facility, November 3, 1993.
Chris Stern	Union Pacific Railroad (249-2474) (via Jodie Hueske of Columbia Aluminum), November 10, 1993.

APPENDIX A
SCOPE OF SERVICES FOR PHASE I ASSESSMENT

Phase I Environmental Site Assessment Report
Columbia Aluminum Corp. Alumina Unloading Facility
SEACOR PN: F0132-001-01
December 7, 1993

ATTACHMENT A

PHASE I ENVIRONMENTAL ASSESSMENT SCOPE OF SERVICES

I. HISTORICAL DATA

- Ownership records will be reviewed to identify past owners of the property.
- A check of past building permits and/or plumbing permits issued to the subject property will be conducted to identify past uses of the site.
- Available persons knowledgeable about the property will be interviewed.
- Aerial photos will be reviewed for as far back as they are available, or 40 years whichever is less.
- Reverse index directories listing previous site occupants will be reviewed, if available.

II. PHYSICAL INSPECTION—PROPERTY

SEACOR will perform a walk-through inspection of the property to identify visual or olfactory evidence of potential contamination. Specific observations will be made of the following:

- Topography, ground cover
- Swales, Waterways
- Roads, Railroad Tracks
- Other Landmarks
- Storage Areas, Waste Disposal Areas
- Containers (e.g., drums, tanks)
- Pits, Ponds, Lagoons
- Surface Staining of Soil, Pavement, Walls
- Stressed Vegetation
- Sources of Surface Runon and Runoff
- Drainage Pipes and Drainage Ditches
- Presence of Wells
- Evidence of Underground Voids of Structures
- Evidence of Air Emission Fallout

III. ADJACENT PROPERTIES

The general condition of adjacent properties, as can be seen from public right-of-ways and the subject property, will be observed to identify activities or conditions which have the potential of causing environmental impairment of the subject property. Specific observations will be made of the following:

- Suspect Activities (i.e., activities whose nature commonly requires the use, storage or disposal of hazardous materials or hazardous waste;

- Storage Areas, Waste Disposal Areas
- Containers (e.g., drums, tanks)
- Surface Staining of Soil, Pavement, Walls
- Stressed Vegetation

IV. PHYSICAL INSPECTION—BUILDINGS & STRUCTURES

SEACOR will perform a walk-through inspection of buildings and structures on the subject property to identify visual or olfactory evidence of potential contamination. Specific observations will be made of the following:

- Size, use and general condition of all buildings and structures on the property
- Storage Areas, Waste Disposal Areas
- Processing Equipment
- Stained or cracked floor surfaces, stained walls
- Presence of floor drains, sinks, sumps
- Presence of electrical or lighting equipment potentially containing PCB's

V. LIMITED ASSESSMENT FOR EXPOSED POTENTIALLY FRIABLE ASBESTOS

This limited asbestos assessment consists of visual observation of structural materials for exposed potentially friable asbestos. The assessment is limited to areas which are readily accessible and visible. A limited number of samples will be collected of materials which visually appear to potentially contain exposed friable asbestos. These samples will be analyzed by an EPA-accredited laboratory, using Polarizing Light Microscopy with Dispersion Staining to determine asbestos content. This limited asbestos assessment can be a useful tool in evaluating the likelihood that exposed friable asbestos is present, or the general extent of asbestos containing materials. **However, this limited asbestos assessment does not constitute a comprehensive survey for the presence of asbestos in the structure.**

VI. MAGNETOMETER SURVEY

Selected accessible exterior areas of the property will be scanned with a portable, hand held magnetometer. The magnetometer scan serves to indicate the presence of buried metal (ferromagnetic) debris which may indicate the presence of underground storage tanks or buried drums. Areas to be scanned will be selected based on the probability that USTs are present, or that dumping or other waste storage or disposal has occurred.

VII. POLYCHLORINATED BIPHENYLS (PCBs)

An evaluation will be made of any visible transformers or other electrical equipment on or adjacent to the property. Specific observations will include the owner of the equipment and whether or not it is labeled as to PCB content. Local electric utility companies will be contacted regarding the PCB content of utility-owned transformers.

VIII. ENVIRONMENTAL AGENCY RECORDS REVIEW

A check of environmental regulatory agency records and other relevant records will be conducted for evidence of environmental concerns related to the subject property. Agencies contacted will generally include the US Environmental Protection Agency (EPA), state environmental agency, local fire department, state fire marshall, and local police. These record reviews will specifically look for the following:

- Records of spills or other incidents involving hazardous materials on the subject property or on adjacent properties;
- Records of current, past or pending investigations or enforcement actions by environmental agencies on the subject property or on adjacent properties;
- The presence of any site on the EPA's National Priority List of hazardous waste (Superfund) sites within a one-mile radius of the subject property;
- The presence of any site on the EPA's CERCLIS list of potential hazardous waste sites under investigation within a one-half mile radius of the subject property;
- The presence of any site on state or local data base listings of potential hazardous waste sites under investigation within a one-half mile radius of the subject property;
- A limited review of files related to such NPL, CERCLIS or state-listed sites as to potential impact on the subject property.
- Records of Underground Storage Tanks registered on the property.
- Records of Leaking Underground Storage Tanks on the property or in the immediate vicinity.

IX. FINAL REPORT

SEACOR will prepare a report describing the investigatory activities and the information collected, and providing conclusions and recommendations for any further investigation or remediation. This report will include drawings of the site showing significant features and photographs illustrating observations of the site.

CONDITIONS AND LIMITATIONS

The proposed scope, schedule and fees are subject to the following conditions and limitations:

- Client to provide legal description, plat map and generalized site plan of property to SEACOR prior to start of project.

- Client to arrange access to property for SEACOR inspectors, including access to all work spaces, storage areas, maintenance areas and other areas of the structures.

- The conclusions presented in the Phase I report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. The conclusions presented are based on the assumption that site conditions do not deviate from those observed during the study and as described in the report.

- The site assessment will be based on conditions existing on the date of the inspection. Past conditions at the site will be evaluated based on a review of reasonably ascertainable records and interviews which can provide qualitative information relative to prior conditions.

- A Phase I Environmental Assessment Report is not a definitive study of contamination at the site and should not be interpreted as such. An evaluation of subsurface soil and groundwater conditions will not be performed as part of the Phase I investigation unless explicitly included as an additional task in the scope of services.

- Achieving a CERCLA "due diligence" assessment of environmental issues is a combination of technical, legal and other considerations. Review of the proposed Phase I scope of services by legal counsel or other interested parties may be appropriate. If requested, SEACOR will assist the client and the client's legal counsel on any proposed modifications or clarifications to the proposed scope of services.

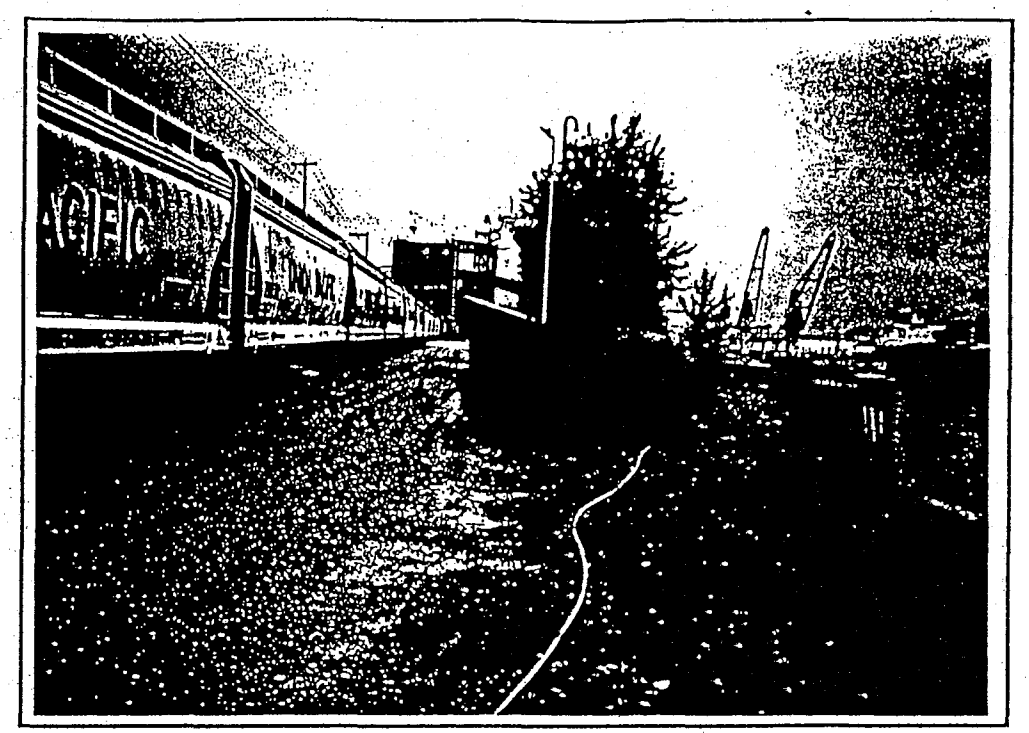
- No assessment of asbestos-containing materials will be completed as part of this study except as explicitly stated in the scope of services.

- The Phase I report will be based, in part, on unverified information supplied to SEACOR by third-party sources. While efforts will be made to substantiate this third-party information, SEACOR does not guarantee its completeness or accuracy.

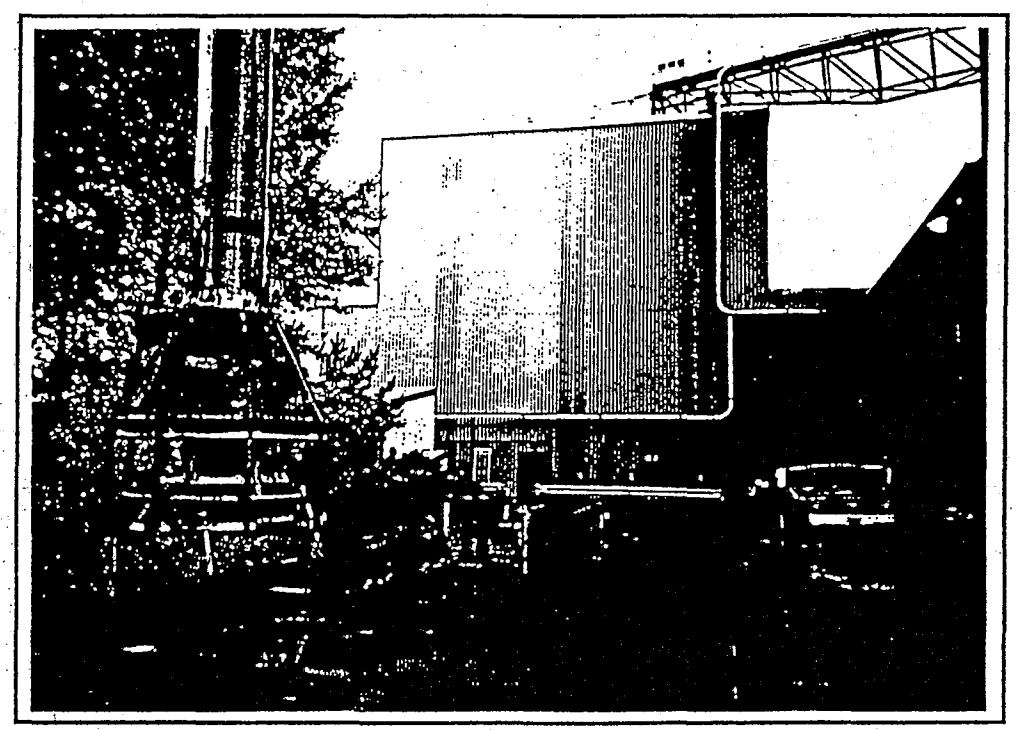
- The Phase I report presents professional opinions and findings of a scientific and technical nature. While attempts will be made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of or compliance with environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies. Issues raised by the Phase I report should be reviewed with appropriate legal counsel.

APPENDIX B
PHOTOGRAPHS OF SITE

Phase I Environmental Site Assessment Report
Columbia Aluminum Corp. Alumina Unloading Facility
SEACOR PN: F0132-001-01
December 7, 1993



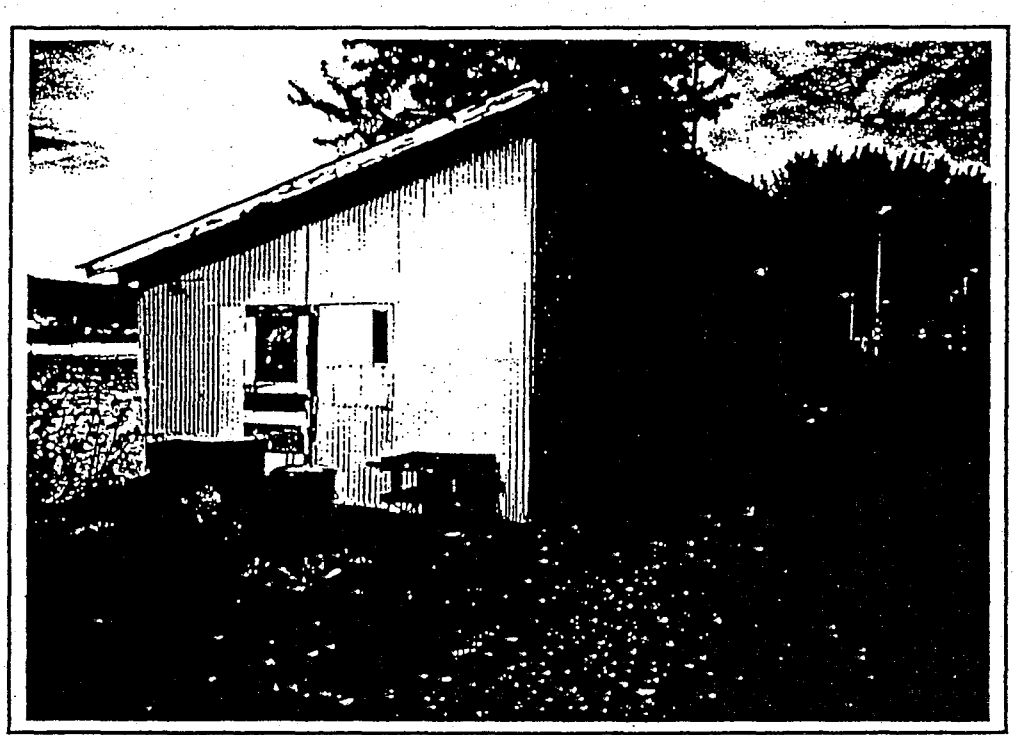
1. View South from North Property Boundary



2. View from Pier Toward Car Load-Out Building

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-1
	JOB: F0132-001-01 DRAWN: KPW DATE: 11/10/93 APPROVED: RRS DATE: 11-11-93		

3. Pneumatic Equipment Near Unloader and Silo 1



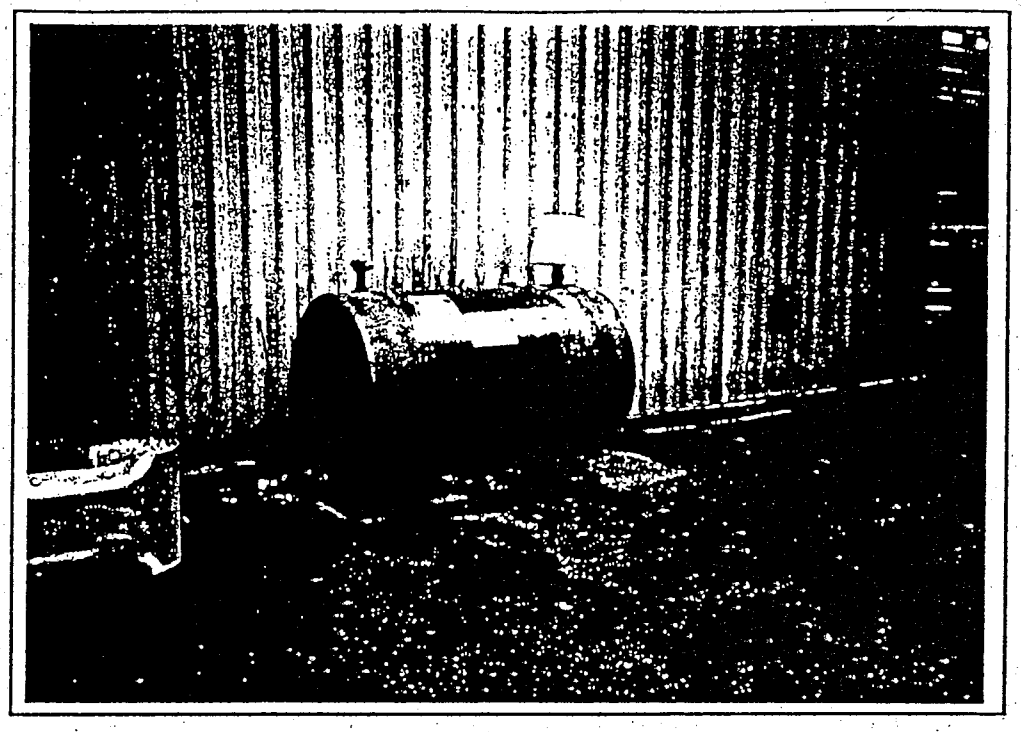
4. Hazardous Materials Storage Shed

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-2
	JOB: F0132-001-01 DRAWN: KPW DATE: 11/10/93 APPROVED: RRS DATE: 11-11-93		

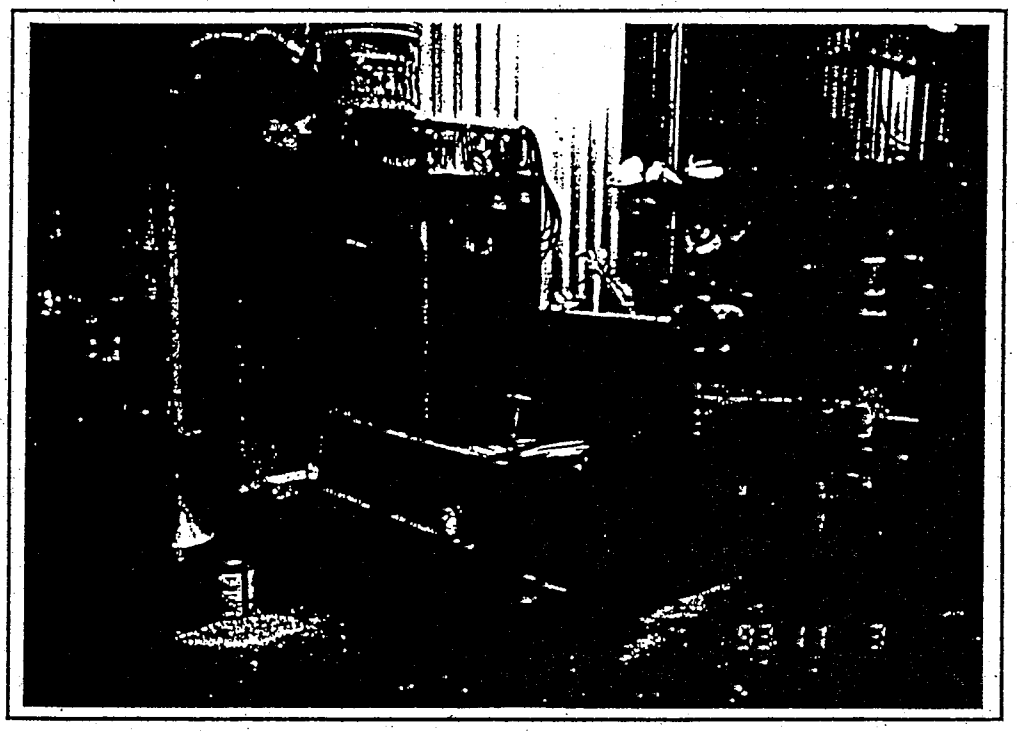
5. Hazardous Materials Storage Shed Interior

6. Diesel Storage Tank

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-3
	JOB: F0132-001-01 DRAWN: KPW DATE: 11/10/93 APPROVED: RRG DATE: 11-11-93		



7. Waste Oil Storage Tank



8. Maintenance Shop Interior

SEACOR ENVIRONMENTAL ENGINEERING TUALATIN, OREGON	COLUMBIA ALUMINUM CORPORATION ALUMINA UNLOADING FACILITY 2600 N. RIVER STREET PORTLAND, OREGON	SITE PHOTOGRAPHS	FIGURE: B-4
	JOB: F0132-001-01 DRAWN: KPW DATE: 11/10/93	APPROVED: RRS DATE: 11-11-93	

APPENDIX D

Material Safety Data Sheets

PDX/003671158.DOC

KAISER ALUMINUM CORPORATION
300 LAKESIDE DRIVE, OAKLAND, CALIFORNIA 94643

ATERIAL SAFETY DATA SHEET

COMPANY/PLANT:
QUEENSLAND ALUMINA LTD. (QAL)
GLADSTONE PLANT
PARSONS POINT
GLADSTONE Q. 4680 AUSTRALIA

ISSUE DATE: REVIEWED 12/1/91. NO REVISION.

IDENTIFICATION NUMBER: KDS-1

TRADE NAME (COMMON NAME OR SYNONYM): ALUMINA

EMERGENCY PHONE NUMBER:
AUSTRALIA - 011*61*7*976*2211
U.S. CONTACT - (504) 869-5111 (ASK FOR JOE ANJIER)

CHEMICAL NAME: ALUMINUM OXIDE

FORMULA: Al2O3

DOT IDENTIFICATION NUMBER: NA

I. INGREDIENTS

ATERIAL OR COMPONENT:

INGREDIENTS CAS NUMBER	ACGIH TLV (MG/M3)	OSHA 1910.1000 TWA (MG/M3)	WISHA PEL (MG/M3)
ALUMINA 1344-28-1	10.0 AS TOTAL DUST	10.0 AS TOTAL DUST 5.0, AS RESPIRABLE FRACTION	10.0, AS TOTAL DUST 5.0, AS RESPIRABLE FRACTION

KEY: PEL = PERMISSIBLE EXPOSURE LIMIT
TWA = TIME WEIGHTED AVERAGE

II. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):
( ) LIQUID (X) SOLID ( ) GAS ( ) OTHER

APPEARANCE AND ODOR: GRANULAR POWDER - WHITE IN COLOR.

ACIDITY/ALKALINITY: pH = N/A

ELTING POINT: N/A DEG. F

BOILING POINT: N/A DEG. F

SPECIFIC GRAVITY (H2O = 1): 3.99

SOLUBILITY IN WATER (% BY WEIGHT): INSOLUBLE

VAPOR PRESSURE (mm Hg AT 20 DEG. C): NA

III. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: NIOSH/MSHA APPROVED RESPIRATORS FOR PARTICULATES.

HANDS, ARMS, AND BODY: NOT NORMALLY REQUIRED.

EYES AND FACE: EYE PROTECTION IN DUSTY SITUATIONS.

OTHER CLOTHING AND EQUIPMENT: NOT NORMALLY REQUIRED.

IV. EMERGENCY MEDICAL PROCEDURES

INHALATION: REMOVE FROM EXPOSURE.

SKIN CONTACT: WASH THOROUGHLY WITH SOAP AND WATER.

DUST IN EYES: FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

V. HEALTH/SAFETY INFORMATION

HEALTH:

INHALATION:
NUISANCE DUSTS HAVE LITTLE ADVERSE EFFECT ON LUNGS AND DO NOT PRODUCE SIGNIFICANT ORGANIC DISEASE OR TOXIC EFFECTS WHEN EXPOSURES ARE KEPT BELOW OCCUPATIONAL EXPOSURE LIMITS.

INGESTION: NEGLIGIBLE RISK.

SKIN: LOW RISK.

EYES: NEGLIGIBLE RISK.

THRESHOLD LIMIT VALUE: SEE SECTION I. INGREDIENTS.

FIRE AND EXPLOSION

FLASH POINT: N/A DEG. F
(X) NOT FLAMMABLE

AUTOIGNITION TEMPERATURE: N/A DEG. F

FLAMMABLE LIMITS IN AIR: LOWER N/A %
UPPER N/A %

EXTINGUISHING MEDIA: N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS: N/A

EXTINGUISHING MEDIA NOT TO BE USED: N/A

REACTIVITY

STABILITY: (X) STABLE ( ) UNSTABLE

INCOMPATIBILITY (MATERIALS TO AVOID): N/A

CONDITIONS TO AVOID: N/A

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

VI. ENVIRONMENTAL

SPILL OR LEAK PROCEDURES:
WE RECOMMEND THAT THE PURCHASER ESTABLISH A SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN. THIS PLAN SHOULD INCLUDE PROCEDURES FOR PROPER STORAGE AS WELL AS CLEAN-UP OF SPILLS AND LEAKS. THE PROCEDURES SHOULD CONFORM TO SAFE PRACTICES AND PROVIDE FOR PROPER RECOVERY OR DISPOSAL. DEPENDING ON THE QUANTITY SPILLED, NOTIFICATION OF THE NATIONAL RESPONSE CENTER (800/424-8802) MAY BE REQUIRED IN THE CASE OF HAZARDOUS SUBSTANCES. (SEE EPA, DOT AND VARIOUS STATE AND LOCAL REGULATIONS).

WASTE DISPOSAL METHODS:
USED OR UNUSED PRODUCT SHOULD BE TESTED TO DETERMINE HAZARD STATUS AND DISPOSAL REQUIREMENTS UNDER FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

VII. ADDITIONAL INFORMATION

STORE MATERIAL IN DRY LOCATION BECAUSE OF TENDENCY TO ABSORB MOISTURE.

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, REGARDING THE ACCURACY OR CORRECTNESS.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

MANUFACTURER : KOREA STEEL CHEMICAL CO., LTD.	REGULAR TELEPHONE No. : 822-3705-7000
ADDRESS : SAMDO BLDG. 13TH FLOOR 1-170 SUNHWA-DONG, CHUNG-GU, SEOUL, KOREA	REGULAR FAX No. : 822-771-0745
PRODUCT NAME : COAL TAR PITCH (SOLID/LIQUID)	
FORMULA : MIXTURE	MOLECULAR WEIGHT : -
SYNONYMS : ELECTRODE BINDER PITCH, HARD PITCH	

UN No. : -	CAS No. : 65996-93-2	IMDG HAZARD CLASS : NIL COMBUSTIBLE LIQUID

2. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	CAS No.	%	HAZARD DATA
TAR PITCH VOLATILES WARNING : THIS PRODUCT CONTAINS CARCINOGENIC COMPOUNDS	65996-93-2		TLV- TWA 0.2㎎/m³

3. PHYSICAL DATA

BOILING POINT, 760mm Hg	> 250℃	MELTING POINT	110° TO 120℃
SPECIFIC GRAVITY(H_2O=1)	@15.5℃ 1.30 TO 1.34	VAPOUR PRESSURE	<1mm Hg
VAPOUR DENSITY(AIR=1)	> 1	SOLUBILITY IN WATER (% BY WEIGHT)	NIL
% VOLATILES BY VOLUME	-	EVAPORATION RATE (BUTYL ACETATE - 1)	-
APPEARANCE & ODOUR	- BLACK VISCOSITY LIQUID : STRONG COAL TAR ODOUR - BROWN TO BLACK SOLID		

4. FIRE & EXPLOSION DATA

FLASH POINT(TEST METHOD)	> 270℃(PMOC)		AUTO-IGNITION TEMPERATURE	NA
FLAMMABLE LIMITS IN AIR(% BY VOLUME)	LOWER	NA	UPPER	NA

EXTINGUISHING MEDIA	FOAM, CARBON DIOXIDE, DRY CHEMICAL, WATER FOG.
SPECIAL FIRE FIGHTING PROCEDURES	FIRE FIGHTERS SHOULD USE BREATHING APPARATUS AND GOGGLES. COOL EXPOSED PRODUCT CONTAINERS WITH WATER SPRAYS.
UNUSUAL FIRE AND EXPLOSION HAZARD	COAL TAR PRODUCTS GIVE OFF DENSE VAPOURS WHEN HEATED STRONGLY. VAPOURS MAY CAUSE HEADACHES, DIZZINESS, IRREGULAR BREATHING AND CONFUSION WHEN INHALED.

5. HEALTH HAZARD INFORMATION

HEALTH HAZARD DATA	TLV-TWA 0.2mg/m³(BENZENE SOLUBLE FRACTION)
ROUTES OF EXPOSURE	CONTACT WITH FUMES FROM HOT LIQUID OR DUST FROM SOLID MAY CAUSE IRRITATION TO SKIN, EYES, NOSE, THROAT.
INHALATION	DUST OR VAPOUR MAY CAUSE HEADACHES, DIZZINESS, IRREGULAR BREATHING AND CONFUSION.
SKIN CONTACT	SPLASHES OF HOT LIQUID PITCH WILL CAUSE BURNS. FUME CONTACT WITH SKIN MAY CAUSE PHOTOSENSITIVITY OF SKIN AREAS AND SUNBURN ON SUBSEQUENT EXPOSURE TO UV ALPHA RAYS.
SKIN ABSORPTION	-
EYE CONTACT	WITH FUME OR DUST MAY CAUSE SEVERE IRRITATION AND DISCOMFORT.
INGESTION	LONG TERM EXPOSURE TO DUST MAY CAUSE PROBLEMS WITH LUNGS. (CHRONIC BRONCHITIS OR CANCER.)
EFFECTS OF OVER- EXPOSURE ACUTE OVER-EXPOSURE	TO FUMES MAY CAUSE HEADACHES, DROWSINESS AND DIZZINESS.
CHRONIC OVER-EXPOSURE	TO HIGHER VAPOUR CONCENTRATION MAY CAUSE IRREGULAR BREATHING, COLLAPSE AND COMA.
EMERGENCY AND FIRST AID PROCEDURES	
EYES	HOLD EYES OPEN AND FLUSH IMMEDIATELY WITH WATER FOR AT LEAST 15 MINUTES. CALL A DOCTOR.
SKIN	WASH ALL AREAS CONTACTED BY PRODUCT WITH WARM SOAPY WATER AND WASHCLOTH. APPLY BROAD SPECTRUM UV BLOCKOUT CREAM TO AFFECTED AREAS. KEEP OUT OF SUN.
INHALATION	REMOVE TO FRESH AIR. IF NOT BREATHING APPLY MOUTH TO MOUTH RESUSCITATION. KEEP PATIENT WARM. CALL A DOCTOR. IF PRODUCT SWALLOWED GIVE MILK OR VEGETABLE OIL. DO NOT INDUCE VOMITING. CALL A DOCTOR.
NOTES TO PHYSICIAN	

6. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY	HEATING LIQUID PITCH MAY CAUSE VOLATILE VAPOURS TO BE EMITTED.
INCOMPATIBILITY	AVOID CONTACT WITH OXIDIZING MATERIALS.
HAZARDOUS DECOMPOSITION PRODUCTS	DENSE FUMES ARE FORMED ON DECOMPOSITION OR OVERHEATING.
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION	NONE KNOWN.

7. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED. CONTAIN MOLTEN PITCH WITH SAND OR EARTH DAMS AND ALLOW TO COOL AND SOLIDIFY. WHILE PITCH IS HOT AVOID BREATHING VAPOURS, VENTILATE AREA, REMOVE ALL SOURCES OF IGNITION. (FLAMES, ELECTRICAL, STATIC OR FRICTIONAL SPARKS).

WASTE DISPOSAL METHOD WHEN SOLID, MATERIAL CAN DE PICKED UP AND DUMPED AND BURIED AT RECOGNISED LOCATIONS IN ACCORDANCE WITH LOCAL REGULATIONS. WHEN SOLID, PITCH MAY BE WET DOWN WITH A WATER SPRAY IF NECESSARY TO REDUCE DUST.

8. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS
USE LOCAL EXHAUST VENTILATION TO COLLECT OR DISPERSE FUMES IN CONFINED AREAS.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY	USE ORGANIC VAPOUR CANISTERS IF OXYGEN CONTENT OF AIR IS ADEQUATE AND VAPOUR CONCENTRATION IS LOW. OTHERWISE USE AIR SUPPLIED RESPIRATORS.
EYES	USE OF CLOSE FITTING CHEMICAL GOGGLES PREFERRED. OTHERWISE USE SAFETY GLASSES FITTED WITH SIDE SHIELDS.
GLOVES	USE HEAVY LEATHER OR INSULATED GLOVES SUITABLE FOR USE WITH HOT LIQUIDS.

OTHER CLOTHING AND EQUIPMENT
WEAR CLOTHING TO LIMIT SKIN EXPOSURE. LONG SLEEVED SHIRT OR OVERALLS. LONG LEGGED TROUSERS WITH TROUSER LEGS WORN OUTSIDE OVER BOOT TOPS, BOOTS, SOCKS, AND SAFETY HAT. (PVC APRON IF THERE IS RISK OF SPLASH.)

9. SPECIAL PRECAUTIONS

PRECAUTIONARY
STATEMENTS

1. USE SOUND METAL CONTAINERS TO PREVENT LEAKAGE AND SPILLAGE OF PRODUCT.
2. AVOID NAKED FLAMES, WELDING SPARKS AND OTHER POSSIBLE SOURCES OF IGNITION NEAR PRODUCT.
3. AVOID BREATHING DUST, VAPOUR OR FUMES FROM PRODUCT.
4. AVOID SKIN AND EYE CONTACT FROM DUST, FUMES OR LIQUID PRODUCT.
5. AVOID WEARING CONTAMINATED CLOTHING. WASH CONTAMINATED CLOTHING BEFORE REUSE.
6. AVOID INGESTION (SWALLOWING) OF THE PRODUCT.

OTHER HANDLING AND
STORAGE REQUIREMENTS

1. WEAR PROTECTIVE CLOTHING.
2. BEFORE WORKING WITH THIS PRODUCT, APPLY A BARRIER CREAM TO ALL EXPOSED SKIN AREAS.
3. MAINTAIN GOOD PERSONAL HYGIENE. AFTER WORKING WITH THE PRODUCT USE WARM SOAPY WATER AND WASH CLOTH TO THOROUGHLY WASH ALL AREAS OF SKIN THAT HAVE BEEN CONTACTED WITH PRODUCT.
4. AFTER WASHING, APPLY A BROAD SPECTRUM UV BLOCKOUT CREAM OR LOTION ON EXPOSED SKIN AREAS BEFORE GOING INTO SUNLIGHT. KEEP OUT OF STRONG SUNLIGHT FOR SEVERAL DAYS WHERE POSSIBLE IF AFFECTED BY THE PRODUCT.

PREPARED BY : KOSCO

ADDRESS : SAMDO BLDG. 13TH FLOOR 1-170
SUNHWA-DONG, CHUNG-GU SEOUL, KOREA

DATE : Sep. 1997

REVISION No. : 0

APPENDIX E

Spill Report, Sample Locations, and Additional Cleanup Information

PA FOURTH DRAFT.DOC

FROM: DON LEFFLER

TO: WAYNE WOOSTER

DATE: 01-27-94
TIME: 10:45

CC: BILL BELL
DENNIS SAGER
DON LEFFLER
ED NELSON

SUBJECT: SPILL
PRIORITY:
ATTACHMENTS:

INITIAL SPILL INFO:

1. DATE: JAN. 27, 1994
2. TIME: approx. 0200
3. DETAILS:

At approx. 0300 Columbia Guard Service(CAC on-site security) notified Dave Kannard(CAC 1st call employee) of an incident involving a Union Pacific Railroad switch engine which resulted in a diesel oil spill. Dave came to the CAC property and verified that the switch engine had indeed ran through a derailer device, located on Union Pacific property, while in the process of removing loaded rail cars located on CAC property.

It appears that when the switch engine ran over the derailer device, the device punctured the diesel tank on the switch engine, causing an undetermined amount of diesel to spill on CAC property. This includes the river side rail track and the ajoining grass-tree area immediately west of the rail track. This incident occurred on the north d of CAC property.

Rail officials have not determined the amount of diesel spilled, but have indicated to CAC employees that the contaminated area will have to be excavated for proper disposal.

I have taken the position that since Union Pacific Railroad did in fact cause the incident, they are the responsible party, and that they shall take the proper steps in notifying the necessary OFFICIALS. I have notified Jerry Miller - CAC legal.

FROM: DON LEFFLER

TO: WAYNE WOOSTER

DATE: 01-27-94
TIME: 15:47

CC: BILL BELL
DENNIS SAGER
DON LEFFLER
ED NELSON

SUBJECT: SPILL
PRIORITY:
ATTACHMENTS:

Report #2.

Excavation began on the diesel contaminated area. Union Pacific has contracted this job out to a contractor that specializes in this type of work. Actual work began shortly after noon. Removed spoils are temporarily being placed on laid down plastic sheeting in the adjacent area.

On site guests have been Jerry Miller(CAC legal) and a rep. from the local DEQ office, of which a report was made. Union Pacific Haz. Mat. assisted in the report.

A video tape is being produced by CAC to capture all the "scenes".

ROM: DON LEFFLER

O: WAYNE WOOSTER

DATE: 01-28-94
TIME: 12:00

C: BILL BELL
)ENNIS SAGER
DON LEFFLER
ED NELSON

UBJECT: SPILL
RIORITY:
TTACHMENTS:

Union Pacific Railroad doing a good job in the spill repair area. All contaminated spoils were removed yesterday. They have began today with backfilling with clean material for the excavated hole, first with dirt, then with ballast rock for the track areas. Grassy areas will be returned to their original "green" condition.

Estimates are that about 400 gallons of diesel fuel spilled.

We should be restored with rail track service by the end of today.

Job Completed Jan 31,

0J91 08:56 94/034 U0178 I250112 .ON N0610 BY TCS FROM H#20276 (R7) LCTS016

ADMINISTRATIVE MESSAGE NO. 399 FROM LATA H#20276 D.L. WHITELEY
DATE 02/03/94 08:50

****TRAIN MANAGEMENT****
*****OIL SPILL FORM******

DATE:...1/27/94.....
LOCATION:
(STATION/MILE POST/TRACK). COLUMBIA ALUMINUM ALBINA YARD, PORTLAND, OR...
DATE/TIME OF INCIDENT:..0200.....
DATE/TIME REPORTED:...0245.....
PERSON REPORTING:..BRYAN BENNETTE, MYIO PORTLAND, OR.....
TRAIN I.D. YPD72-26.....
CAR NO(S). AND PLACEMENT IN TRAIN
OR FACILITY:...UP 1314, LOCOMOTIVE WITH FUEL TANK RUPTURE
.....
CAUSE:... ENGINE OVER DERAIL. THE ENGINE DID NOT DERAIL.....
.....
.....
MATERIAL SPILLED:...300-400 GALLONS DIESEL FUEL.....
AMOUNT SPILLED:.....
WATER SOURCE/SEWERS AFFECTED:.WILLAMMETTE RIVER100 FEET AWAY. FUEL HAS NOT ...
LEAKED INTO THE WATERWAY.....
NATL. RESPONSE CENTER NOTIFIED:
(INDIVIDUAL, TIME). 0405 REPORT # 218904 PO DEEGAN.....
STATE NOTIFICATION:
(INDIVIDUAL, TIME)..0435 ORDEQ IAN FINSETH INCIDENT #94-0133 BY DEAN WHITELEY
CLAIMS NOTIFIED: CHEMICAL TRANSPORTATION SAFETY
(INDIVIDUAL, TIME).....
PUBLIC RELATIONS NOTIFIED:
(INDIVIDUAL, TIME).....
ENVIRONMENTAL CLEANUP CONTRACTOR NOTIFIED:
(INDIVIDUAL, TIME)....0415 RICK FRANKLIN BE ON SCENE 0700 HRS.....
CLEAN-UP MEASURES/CONTAINMENT:.....ABSORBTION PADS AND LOCOMOTIVE MOVED TO ...
A DRIP PAD ---CONTRACTOR BE ON SCENE 0700.
.....REMOVE CONTAMINATED SOIL--ENGINEERING SERV
A.C. WINEGAR FORCES ON SCENE 0700 REMOVE TRACK...

FILE:

R.B. KING

(SW DUP OILSPILL OS)
EOM

Case Number: WCRHM3A9413515

1. Date (MDY) - 01/27/94 and Time (Military) - 210 of incident

2. Item Founded: -D
A. Diesel Fuel
B. Other Petroleum
C. Chemical
D. Air Quality
E. Hazardous waste
F. Non-Hazardous waste
G. Lading Petroleum
H. Lading Chemical
I. OSHA violation
J. Fires
K. Un-auth. dumping

Description of Item:
-DIESEL FUEL 400 GALLONS FROM SWITCH ENGINE UP 1314.
-

3. Notice of Violation Received (Y/N):N Fine Expected (Y/N):N

4. Location of incident:
City - PORTLAND State - OR
County - MULTNOMAH Route/Street - PORTLAND SUBDIVISION

4. Shipper name and address (Principal place of business)
Shipper name - N/A
Address -
- Person:
City - State - Zip- Phone:
5. Proper Shipping Name - DIESEL FUEL
-
6.. Chemical/Trade Name - DIESEL FUEL

7. Is material a hazardous substance? (Y/N) - N

8. Estimated quantity Hazardous Material Release? 400 GALS
(Include units of measurement)
9. Estimated Dollar amount of loss and/or property damage.
A. Product Loss - 500.00 B. Carrier Damage - 350.00
C. Public/Private property damage - 0
D. Decontamination/Cleanup - 5000.00 E. Other

10. Consequences associated with the incident - 03 -

01 - Vapor (Gas)
02 - Material Entered Water/Sewer
03 - Spillage
04 - Fire
05 - Explosion
06 - Environmental Damage
07 - None
08 - Other Describe -

11. Indicate Type(s) of Vehicle(s) involved - 08

01 - Cargo Tank
02 - Van Truck/Trailer
03 - Flat bed truck/Trailer
04 - Tank car
05 - Rail car
06 - TOFC/COFC
08 - Locomotive
09 - None
10 - Other Describe -

Case Number: WCRHM3A9413515

12. Transport. phase during which incident occurred or was discovered - 06

01 - En route between origin/destination
02 - Loading
03 - Abandoned
03 - Unloading
04 - Temporary/Terminal
05 - Not Applicable

13. Land use at incident site - 01

01 - Industrial
02 - Commercial
03 - Residential
04 - Agricultural
05 - Undeveloped

14. If Railroad property: 01
01 - RR Operating
02 - RR Subsideries
03 - Adjoining Property
If Subsidiary, describe:
04 - Leased Property

15. Community type at site - 01 01 - Urban 02 - Suburban 03 - Rural

16. Was the spill the result of a Vehicle accident(Y/N) - N

17. Type of packaging (Tank Car, Drum, etc.) -LOCOMOTIVE

18. Capacity or weight per unit Package. -1100 GALS

19. Package specifications I.D. -N/A

20. Any Other Packaging markings -N/A

21. Name and address, Symbol or Registration number of pack. -N/A

22. Type of labeling or placard -N/A

23. Action contributing to packing failure: (Enter up to eight)

1-G 2- 3- 4- 5- 6- 7- 8-
Other -

A -Transport Vehicle collision
B -Transport Vehicle overture
C -Overloading/Overfilling
D -Loose Fittings, Valves
E -Defective fittings, Valves
F -Dropped
G -Struck/Rammed
H -Improper Loading
I -Improper blocking
J -Corrosion
K -Metal Fatiuge
L -Friction/Rubbing
M -Fire/Heat
N -Freezing
O -Venting
P -Vandalism
Q -Incompatible Materials
R -Other

Case Number: WCRHM3A9413515

24. Object causing failure: (Enter up to eight)

1-I 2- 3- 4- 5- 6- 7- 8-
Other -DERAIL

A -Other freight
B -Forklift
C -Nail/Protrusion
D -Other Transport vehicle
E -Water/Other Liquid
F -Ground/Floor/Roadway
G -Roadside Obstacle
H -None
I -Other

25. How package(s) failed: (Enter up to eight)
1-A 2- 3- 4- 5- 6- 7- 8-
Other -

A -Punctured
B -Cracked
C -Burst/Internal Pressure
D -Ripped
E -Crushed
F -Rubbed/Abraded
G -Ruptured
H -Other

26. Package area that failed: (Enter up to eight)
1-F 2- 3- 4- 5- 6- 7- 8-
Other -

A -End, Forward
B -End, Rear
C -Side, Right
D -Side, Left
E -Top
F -Bottom
G -Center
H -Other

27. What failed on package(s): (Enter up to eight)
1-A 2- 3- 4- 5- 6- 7- 8-
Other -

A -Basic package material
B -Fitting/Valve
C -Closure
D -Crime
E -Weld/Seam
F -Hose/Piping
G -Inner Liner
H -Other

Your name (Last name only): WHITELEY

Cost Accumulation Number: Job Number:

Time Key route is out of service (Due to incident - In hours): 0

Travel time to route (To/From): 1
This case was closed on:

WCRHM3A9413515

AT 0210 HOURS JANUARY 27, 1994, ALBINA JOB YPD72-26, PREPARING TO PULL/SPOT COLUMBIA ALUMINUM, 2600 NORTH RIVER, ROAD, PORTLAND, STRUCK DERAIL AND PUNCTURED FUEL TANK ON SWITCH ENGINE UP 1314. INCIDENT RESULTED IN THE LOSS OF 400 GALLONS DIESEL FUEL. CLEAN-UP CONTRACTOR RICK FRANKLIN, LEBANNON, OR., WAS NOTIFIED. MAINTENANCE OF WAY FORCES REMOVED TRACK AND CONTAMINATED SOIL WAS REMOVED AND STORED ON PROPERTY PENDING DISPOSAL. OREGON DEPARTMENT ENVIRONMENTAL QUALITY WAS FURNISHED ALL DETAILS. THIS INCIDENT WAS LOCATED 110 FEET FROM THE WILLAMETTE RIVER. THERE IS NO EVIDENCE ANY DIESEL REACHED THIS RIVER. THIS CONTAMINATED SOIL WILL BE TRANSPORTED TO EAST CARBON DEVELOPMENT COPRORATION, SUNNYSIDE, UTAH, IN RAILROAD GONDOLA CARS, TO BE RECYCLED BY THAT FIRM.

SPILL REPORT

General Information EMD Spill No: 94-0133

Company/Individual Name Union Pacific Railroad

Address 2745 N. Interstate, Portland, OR 97227

Contact Person at Company Dean L. Whiteley (503) 249-2354

Spill Information

General Information

- Date and Time of Spill 01/27/94 0200 hours
- Date and Time Spill was reported 01/27/94 0245 hours

Location of Spill Columbia Aluminum, 2600 North River Road Portland, OR., next to Union Pacific Albina Yard.

(Please provide a vicinity map of the site showing area(s) where spill occurred, area(s) sampled (if any), and locations of roads, surface waters, and other relevant information).

1. Name, Quantity and Physical State (solid, liquid, gas) of material released

Diesel fuel, liquid, 400 gallons

2. Describe how the release occurred

Union Pacific switching job YPD 72-26 with unit UP 1314 preparing to switch Columbia Aluminum struck de-rail which resulted punctured fuel tank and loss of 400 gallon diesel fuel.

Site Cleanup

The Department requires that complete and detailed information be provided which describes all aspects of spill response and cleanup. Please attach all relevant information which pertains to spill cleanup, such as contractor/consultant reports and/or laboratory analytical results of sampling.

1. Who performed the site cleanup?

Name

Company Rick Franklin Corporation

Street Address 101 Industrial Way

City Lebanon St OR Zip

Phone Number 503-451-1275

Owner/Contractor/other (specify) Contractor

- Estimated volume of contaminated soil removed 225 cubic yards

- Estimated volume of contaminated soil remaining in place and description of basis for estimate None

2. If cleanup was not performed, describe why not:

3. Please provide a complete narrative of the cleanup activities including a detailed description which documents the following: (NOTE: Attach additional sheets as necessary)

a. ♦ what actions were taken
b. ♦ the date and time actions were taken
c. ♦ the volume and disposition of contaminated materials removed from the site
d. ♦ how a determination that cleanup is complete was made

a. Contractor Rick Franklin was notified, railroad forces removed rail and ties from impacted area to facilitate removal of contaminated soil.
b. January 27, 1994 starting at 0700 hours.
c. 225 cubic yards stored on plastic and covered near spill site awaiting disposition.
d. Soil samples were taken.

SITE INFORMATION

(NOTE: Please include additional sheets, as necessary)

1. Describe adjacent land uses

____ Residential ____ Commercial

_X_ Industrial ____ Agricultural

____ Other (please specify)

2. Estimate of population density within 1/2 mile radius of spill site: 3000

3. Is the site secured by fencing or other means?

Yes (No) (Please describe)

4. Describe physical conditions at site (topography, geology, and soils) Railroad right of way, ballast rock, river loam underneath ballast.

5. Name and distance to nearest surface water: (Note: Include ditches that discharge to a creek, stream, or river. Please locate ditches, creeks, streams, and rivers on vicinity map).

- Name of water body Willamette River
- Distance from release 110 feet

6. Has the release reached the surface water identified above?:

Yes (No) (Please circle)

7. Does the release have the potential to reach the surface water identified above?

Yes (No) (Please circle)

8. Depth to groundwater 30 feet

9. What are the uses of groundwater in the vicinity of the spill? (Please circle and describe)

livestock irrigation potable supply

other

10. Has release impacted groundwater? (Please describe)

No

11. Release location (At minimum, please specify to nearest quarter section)

Quarter Section Section

Township Range

16. Other Impacts from release (i.e. emergency evacuation, fish kill) Yes No N/A (Please circle). Describe

None

SITE SAMPLING

1. Was sampling conducted?

Yes No (Please circle)

(Note: If Yes, provide the following information and attach analytical results)

Type of Sample (Please circle)

- Soil
- Water
- Removed material

Purpose for Sample (Please circle)

- Initial contaminant levels
- Hazardous waste determination
- Final cleanup verification
- Specified waste characterization

(NOTE: Please provide a response to the following information. Attach additional sheets as necessary)

a. ♦ Description of where samples were collected and why the locations were chosen
b. ♦ A map showing the location of the samples in sufficient detail to allow the sampling sites to be identified and referenced to laboratory results
c. ♦ A detailed description of how samples were collected
d. ♦ Identification of who collected samples
e. ♦ Description of quality assurance measures taken (how sampling equipment was decontaminated, collection of duplicates, etc.
f. ♦ Description of quality control measures taken (field blanks, travel/trip blanks, etc.
g. ♦ Description of how samples were stored and transported to the analytical laboratory
H. ♦ Attachment of proper chain of custody

2. Hazardous waste characterization can be completed by either analytical evaluation or by applying "knowledge of process". As such, please provide a list of analytical testing results and/or a written justification for applying "knowledge of process" (NOTE: Attach additional sheets as necessary)

3. Based on the determination, is the spill material a hazardous waste?

Yes No (Please circle)

a. Samples 1, 2, and 3, detailed attached map. Site 1 selected account area where bulk of oil spilled. Site 2 and 3 account down gradient towards river.

b. Attached map.

c. Samples were collected clean sampling spoon and placed into sterile sampling jars completely full sealed and stored in refrigerator pending shipment

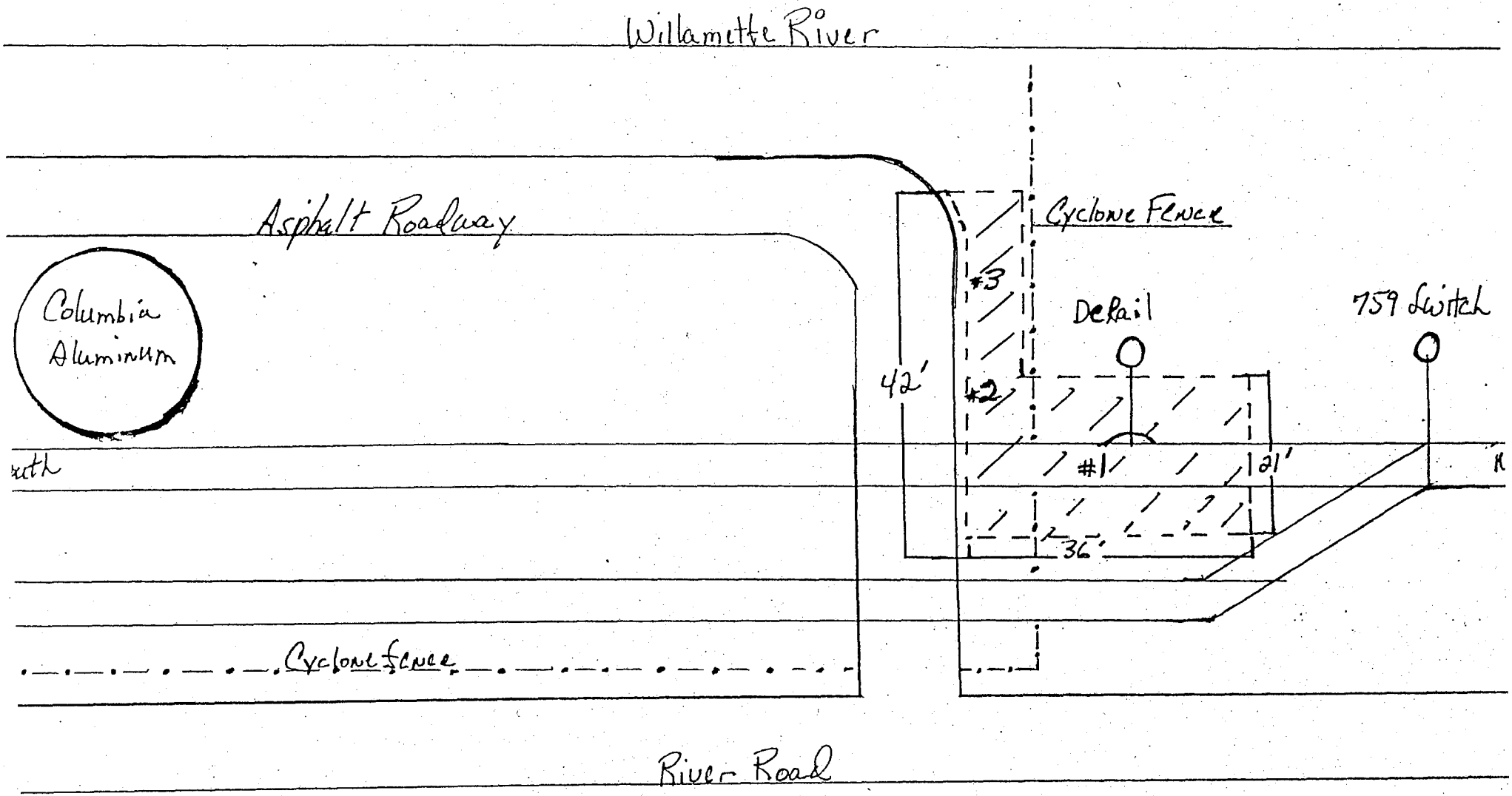
d. Dean L. Whitley

e. Sampling spoon washed soapy water into sterile lab jars.

f. Clean sterile equipment.

g. Stored overnight in refrigerator, shipped Federal Express in insulated ice chest with "Blue Ice". Samples protected from contact with blue ice with newspaper the following day 01/28/94 to Century West lab Bend, OR.

H. Attached



Sample # 1 located 10' from marked rail 7'3" deep.
Sample # 2 located 16'9" from marked rail 6'0" deep.
Sample # 3 located 12' from marked rail 4'0" deep.

4. Were contaminated materials disposed of at an off-site location?

Yes (No) N/A Disposition Pending

(If yes, provide the name and address of the facility and attach any applicable receipts. If location is remote, identify by Section, Township, and Range)

Facility Name Facility Contact

Street Address City ST ZIP

Phone Number ____Section ____Township ____Range

5. Are contaminated materials being stored and/or treated either on-site or off-site?

(Yes) No N/A Temporary storage on-site.

(Note: The Department may require additional information and/or require pre-approval related to storage/treatment of cleanup debris. Contact the Department's regional contact, as necessary)

If yes, please describe storage and/or treatment area and methods utilized (NOTE: A specified waste treatment application may be required. Please coordinate with the Department's regional contact)

6. Describe any proposed, future site activities/cleanup or justify a recommendation for no further action (Attach additional sheets as necessary) None

11. Spill Prevention Plan

(Yes) No N/A

(If Yes, include details on what actions or changes have been implemented to prevent this type of release in the future. Attach additional sheets as necessary)

Spill caused by non-power failure. Switch Crew was interviewed and performance discussed.

APPENDIX F

DEQ Strategy Recommendation

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

December 7, 1999

Mr. Tim Furlong
Environmental Manager
Goldendale Aluminum Co.
85 John Day Dam Road
Goldendale, Washington, 98620

Re: Request for Performance of Preliminary Assessment with Sampling – Goldendale Aluminum Site

Dear Mr. Furlong:

This letter informs you of the results of our review of information regarding hazardous substance contamination at the Goldendale Aluminum facility located at 2600 N. River Street in Portland, Oregon. The Oregon Department of Environmental Quality (DEQ) has determined that the Goldendale Aluminum site is a high priority for a preliminary assessment with sampling and requests that Goldendale Aluminum Co. perform a preliminary assessment with sampling in accordance with the Environmental Cleanup Law, Oregon Revised Statutes (ORS) 465.200 *et seq.*

The Goldendale Aluminum facility is located within or near a portion of the Willamette River known as the Portland Harbor. A 1997 investigation revealed significant contamination of sediments within the harbor. DEQ has undertaken review of available information regarding properties throughout the harbor to identify potential sources of the sediment contamination. The results of DEQ's review for the Goldendale Aluminum facility are summarized in the enclosed Strategy Recommendation

Based on this review, DEQ has determined additional information is necessary to determine whether hazardous substances have been released or threaten to be released at the Goldendale Aluminum facility and come to be located in Willamette River sediments. The preliminary assessment with sampling will fully evaluate all upland, in-water and over-water activities that might have resulted in the release of hazardous substances and include sufficient sampling to assess whether hazardous substances have come to be located in Willamette River sediments at or near the Goldendale Aluminum facility. At a minimum, sampling will include the collection of surface and subsurface sediment samples at appropriate points adjacent to the Goldendale Aluminum facility.

DEQ proposes that your performance of the preliminary assessment with sampling be governed by the enclosed Voluntary Cleanup Letter Agreement. The facility's preliminary assessment with sampling will be coordinated with harbor-wide sediments investigations currently being pursued by DEQ. This will require commencement of the preliminary assessment with sampling at the Goldendale Aluminum facility in the near future. DEQ therefore requests that you review the enclosed Strategy Recommendation and Voluntary Cleanup Letter Agreement, and inform DEQ whether will perform a preliminary assessment with sampling by signing and returning one original of the enclosed Voluntary Cleanup Letter Agreement within 30 calendar days of mailing of this letter. Please retain one signed original for your records. It is DEQ's expectation that a preliminary assessment and sampling work plan will be completed and submitted to DEQ within six weeks of signing the Voluntary Cleanup Letter Agreement.

Should you not agree to perform the preliminary assessment with sampling by execution of the Voluntary Cleanup Letter Agreement, DEQ will assume you are not willing to perform the requested work. In this case, as with other facilities within the Portland Harbor, DEQ will complete the preliminary assessment with sampling itself, with subsequent cost recovery from liable parties.

Finally, please be advised that DEQ is required by ORS 465.330 to recover remedial action costs incurred by DEQ, including for site assessment activities. You will be receiving an invoice in the near future for DEQ's costs of preparing the Strategy Recommendation for the Goldendale Aluminum facility. Reimbursement of future DEQ costs will be provided through the Voluntary Cleanup Letter Agreement for the facility, if one is entered.

Please Contact me at 503 229-5648 if you have any questions regarding the enclosed Strategy Recommendation .

Sincerely,

Eric Blischke,
Coordinator
Portland Harbor Study Area
Waste Management and Cleanup Division

Enclosures

c: Kurt Burkholder, DOJ
Dave St. Louis, Manager, NWR Site Assessment Program
Mike Rosen, NWR Voluntary Cleanup Program
Gil Wistar, Coordinator, Site Assessment Program
ESCI File No.: 2440

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

December 6, 1999

Mr. Tim Furlong
Environmental Manager
Goldendale Aluminum Co.
85 John Day Dam Road
Goldendale, Washington, 98620

SUBJECT: Voluntary Cleanup Letter Agreement

Dear Mr. Furlong:

This letter serves as an agreement between the Oregon Department of Environmental Quality (DEQ) and Goldendale Aluminum Co. for performance of a preliminary assessment with sampling regarding hazardous substances at your property located at: 2600 N. River Street in Portland, Oregon.

You agree to perform a preliminary assessment and submit it to DEQ within 30 business days of your execution of this Letter Agreement. The preliminary assessment will provide the information described in DEQ guidance for the completion of a preliminary assessment and a proposed sampling program. DEQ will review documents submitted by you or on your behalf regarding the preliminary assessment and investigation of the above referenced site.

A sub-account of the Hazardous Substances Remedial Action Fund has been established to be drawn upon by DEQ as project costs are incurred. When you have signed this letter agreement, you will be invoiced monthly for DEQ project costs, including the costs of preparing the DEQ strategy recommendation and any ongoing review and oversight costs. You will pay DEQ invoices within 30 days of receipt. A sample invoice is attached.

DEQ project costs will include direct costs and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are those general management and support costs of the DEQ and of the Waste Management and Cleanup Division (WMCD) allocable to DEQ oversight of this Letter Agreement which are not charged as direct, site-specific costs. Review and oversight costs shall not include any unreasonable costs or costs not otherwise recoverable by DEQ under ORS 465.255.

This Letter Agreement is not and shall not be construed as an admission by Goldendale Aluminum Co. of any liability under ORS 465.255 or any other law or as a waiver of any defense to such liability. This Letter Agreement is not and shall not be construed as a waiver, release or settlement of claims DEQ may have against Goldendale Aluminum Co. or any other person or as a waiver of any enforcement authority DEQ may have with respect to Goldendale Aluminum Co. or the property. Upon DEQ's request and as necessary to oversight of your work under this Letter Agreement, Goldendale Aluminum Co. shall provide DEQ with data and records related to investigation and cleanup activities at the property, excluding any privileged documents identified as such by you.

Following execution of the letter agreement, a DEQ Project Manager will be assigned for the review of the preliminary assessment and oversight of investigation activities associated with your property.

DEQ looks forward to working with you.

Sincerely,

Michael E. Rosen
Manager
Voluntary Cleanup and Portland Harbor
Northwest Region

If the terms of this Letter Agreement are acceptable to Goldendale Aluminum Co., please have it executed by an authorized representative in the space provided below and returned to us.

Accepted and agreed to this _____ day of_____,

By: _____

Title: _____

Attachment

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
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DEQ looks forward to working with you.

Sincerely,

Michael E. Rosen
Manager
Voluntary Cleanup and Portland Harbor
Northwest Region

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Accepted and agreed to this _____ day of_____,

By: _____

Title: _____

Attachment

DEQ SITE ASSESSMENT PROGRAM - STRATEGY RECOMMENDATION

Site Name: Goldendale Aluminum Company

Site CERCLIS Number: (none)

DEQ ECSI Number: 2440

Site Address: 2600 N. River Street
Portland, Oregon 97227

Recommendation By: Tom Gainer, Voluntary Cleanup and Site Assessment Section, DEQ Northwest Region

Approved By: Michael E. Rosen, Portland Harbor Manager, DEQ Northwest Region

FOR MER

Date: November 18, 1999

NOTE: This site is upstream of a 6-mile stretch of the Lower Willamette River in which the U.S. Environmental Protection Agency (EPA) conducted a sediment study in 1997. This area, referred to as the *Portland Harbor*, is between the upstream ends of Sauvie Island (River Mile 3.5) and Swan Island (RM 9.5). The purpose of this Strategy Recommendation is to determine whether a specific hazardous substance release or a specific past operation at the site can be linked to contamination in sediments adjacent to the site. Because of this focus, the Strategy Recommendation may omit some historical site information, regulatory issues, or further-action conclusions that might otherwise be included in a DEQ Strategy Recommendation.

Background, Portland Harbor Sediment Evaluation

In September and October 1997, EPA's contractor, Roy F. Weston, Inc., collected 187 near-shore sediment samples within the Portland Harbor area defined above. Most samples (150) were collected as shallow grab samples within the upper 6 to 17 centimeters (cm) of sediments. 37 deeper composite core samples, from depths of between 5 and 139 cm, were also collected. All samples were analyzed for total metals, semi-volatile organic compounds (SVOCs), total organic carbon (TOC), and sediment grain size. Selected samples were also variously analyzed for organotins (TBTs), pesticides,

polychlorinated biphenyls (PCBs), chlorinated herbicides, and polychlorinated dioxins and dibenzofurans.

Based on analytical results from this study, which showed extensive sediment contamination, EPA is currently considering Portland Harbor for inclusion on the federal National Priority List (NPL - also known as Superfund).

Between late 1998 and mid-1999, DEQ examined EPA's analytical data to determine potential sources for sediment contamination in the Harbor. Potential sources associated with the most contaminated areas of sediment were sites already active in DEQ's Cleanup Programs.

DEQ categorized other areas of sediment contamination (i.e., those areas not thought to be associated with active Cleanup Program sites) by defining the areas:

- having the highest detected concentration of a given contaminant;
- with contaminant concentrations in the upper five percent of a given contaminant's detected concentrations; and
- having contaminant concentrations above an apparent "baseline range" most commonly detected throughout the harbor area.

DEQ categorized in this manner because there are no established freshwater sediment contaminant concentration guidelines or well-defined background contaminant concentrations for the harbor area. The contaminant "baseline range" was developed by examining the geometric distribution of concentrations for each contaminant detected. Any sediment concentrations that appeared to depart significantly from the ranges most commonly detected were suspected of lying near a potential contaminant source.

The Goldendale Aluminum Company site is located at about River Mile 10, approximately one-half mile upstream from the southern extent of the Portland Harbor Sediment study area (Figure 1). Therefore, no sediment samples were collected adjacent to the Goldendale site during the EPA's 1997 Portland Harbor Sediment Investigation.

Investigation History

Portland Shipyard Investigation

The Port of Portland and Cascade General, Inc. conducted a sediment investigation of the Portland Shipyard in April 1998 and issued a report in November 1998 that contained additional sediment data.

One of their shallow sediment sampling locations, PSY76, was located approximately 100 feet upstream of the subject site and 340 feet from shore (Figure 2). This sample location is relatively far from shoreline and may exceed the lateral zone of potential impact from activities at the subject site. As shown on Table 1, sample PSY76 had concentrations of lead, zinc, bis(2-ethylhexyl)phthalate, and butylbenzylphthalate that moderately exceed Portland Harbor baseline levels.

The two samples collected about 700 feet downstream of the Goldendale site, PSY71 and PSY77, had concentrations of arsenic, bis(2-ethylhexyl)phthalate, and di-n-octylphthalate that slightly to moderately exceed baseline levels.

Sediment Sampling for Maintenance Dredging
As part of planned maintenance dredging in front of their facility, Goldendale Aluminum collected three sediment samples adjacent to their dock (Figure 3) on February 12, 1999. Analytical results from a composite of the three samples show elevated levels of dibenzofuran and low molecular weight polynuclear aromatic hydrocarbons (LPAHs, Table 1). The LPAH concentration is over twice the Portland Harbor baseline level.

Operational History

The 8-acre facility is used to transfer alumina from ocean-going ships to rail cars, and conduct maintenance of associated equipment. Three large above ground storage tanks/silos located along the current dock at the waterfront first appear in 1983 aerial photographs (Figure 3). The 1936 and 1957 aerial photographs show a different dock located towards the northwestern portion of the site (downstream) adjacent to a large building along the waterfront. In 1977, the building was gone but the dock remained. Detailed information on site activities was not readily available.

Sediment adjacent to the facility's dock has been dredged (Figure 3) and the sediment was apparently disposed of at Ross Island. It is not clear to what extent sediment accumulation around the dock is due to material loss during ship offloading vs. natural/background sedimentation in Portland harbor.

The facility changed its name from Columbia Aluminum to Goldendale Aluminum in 1996, and is associated with an aluminum smelter in Goldendale, Washington. The site was labeled Martin Marietta on a 1984 survey map, although activities associated with this time period are not known.

Regulatory History

Spills
There are no documented spills from the facility in DEQ records.

RCRA Issues
The facility is not registered with DEQ as a hazardous waste generator.

Underground Storage Tanks (USTs)
There are no DEQ records of USTs at this site.

Storm Water Discharge
Goldendale has a permit with the DEQ for storm water discharge. Lead, zinc, and oil/grease have been detected in storm water monitoring data from 1994-1999. The facility received a Notice of Noncompliance from DEQ dated January 2, 1996 for elevated levels of oil/grease, and their November 1998 and June 1999 storm water monitoring data showed continued oil/grease concentrations at three to nine times the permitted level. The source of oil/grease contamination may be associated with leaks from trains and/or maintenance activities. The elevated LPAH concentration observed in the "dredge composite" sediment sample may be from contaminants migrating from the subject site via storm water discharges.

Stormwater runoff from the site may be contributing towards aluminum, lead, zinc, and petroleum hydrocarbon sediment contamination, although there is limited sediment data adjacent to the site to evaluate this. The dredge composite sample was not analyzed for aluminum, and lead and zinc concentrations did not exceed Portland Harbor baseline levels.

Air Quality
The facility operates under a DEQ Air Contaminant Discharge Permit #26-3069.

Site Hydrogeology

The site lies in the northern-most Portland Basin, a major north-southeast trending sediment filled structural depression found in the northern part of the Willamette River valley and adjoining Columbia River valley (Swanson et al, 1993). The basin is filled with recent alluvium, Pleistocene cataclysmic flood deposits, Miocene to Holocene nonmarine sedimentary rocks, and is underlain by Eocene to Miocene volcanic and sedimentary rocks that are exposed along the basin margins.

The youngest deposits are recent alluvium (silt, sand and gravel mixtures) characteristic of an active fluvial environment. These

are made up of shoreline, river channel, and adjacent floodplain deposits.

Terraces that rise 50 to 100 feet above the northeastern shore of the Willamette were formed during Pleistocene cataclysmic flooding related to glacial Lake Missoula, and consist of unconsolidated mixtures of silt, sand, and gravel that generally are coarser than the recent deposits. Fill comprised of fine to medium sands and silt was also placed in many areas along the river during site development. The total thickness of recent alluvium and flood deposits appears to be about 100 feet in the vicinity of the site.

Coarse gravel to conglomerate of the Troutdale Formation, deposited by the ancestral Columbia River, underlies the cataclysmic flood deposits and appears to be about 100 feet thick in the vicinity of the site. Sandy River mudstone underlies the Troutdale Formation and appears to be about 100 feet thick. Basalt of the Columbia River Basalt (CRB) group forms the basement rock of the Portland Basin, and may be as much as several hundred feet thick in the vicinity of the site.

Aquifers in the unconsolidated sedimentary deposits generally are unconfined and localized due to heterogeneity of the deposits. The Troutdale Formation is an important regional aquifer and is widely tapped for both potable and non-potable uses. Interbedded Claystone and/or siltstone, or cementation often promotes confined aquifer conditions within the Troutdale Formation. Deep wells installed in fractured CRB can be very productive and important supply wells. Site elevation is about 30 feet above mean sea level.

Pathway Summary

The Goldendale facility lies in an area of mixed industrial, commercial, and residential use. Over 100 residences lie within 1/4 mile of the facility, although the majority are located on a bluff over 100 feet higher in elevation.

Site workers at the facility or trespassers could be exposed to contaminants in surface soil. Utility trench workers could potentially be exposed to subsurface contaminants through direct contact, inhalation, or incidental ingestion.

Oregon Water Resources Department has no well logs for domestic wells within one mile of the Goldendale facility.

The nearest significant wetland is located approximately 2,000 feet southwest of the subject site at the head of the Swan Island Basin. However, the hydraulic connection between the site and this wetland is not clear.

Overlook and Madrona Parks are located within one-quarter mile of the site. Since the two parks are located on a bluff over 100 feet higher in elevation, the site would not likely impact the parks.

Both recreational and subsistence fishing occur within the Lower Willamette River. Commercial fishing within the Portland Harbor is limited to a small Pacific lamprey fishery. Recreational boating, water skiing, swimming, and beach use also occur within the Harbor.

The Lower Willamette River provides habitat for 39 fish species, including populations of wild cutthroat trout, rainbow trout, and mountain whitefish. White sturgeon are plentiful within the Harbor. The Harbor is also an important migratory corridor, nursery habitat, and adult foraging area for two runs of chinook salmon, two runs of steelhead trout, and individual runs of coho and sockeye salmon.

Upper Willamette River populations of chinook and steelhead, which migrate through the Harbor, are listed as threatened species under the Federal Endangered Species Act. The Pacific lamprey is considered a federal species of concern.

Great blue herons, cormorants, osprey, mergansers, kingfishers, peregrine falcons, and bald eagles routinely forage within the Harbor. The area is also part of the wintering range for the Aleutian Canada goose. All are protected under the Migratory Bird Treaty Act. The peregrine falcon is federally listed as an endangered species, while the Aleutian Canada goose is federally listed as threatened species. The bald eagle also is a threatened species, but was recently proposed to be removed from this list.

There is little data on the nature and extent of the benthic community within Portland Harbor sediments. However, it is known that contamination in the benthos, which is a protected beneficial use, can be the source of food-chain effects that radiate up to the species listed above, including humans.

The Lower Willamette River is water quality limited for the following toxic compounds:

- Dioxins/furans (water column and sediments);
- Mercury (fish tissue);
- Pesticides (water column and sediments);
- Polynuclear Aromatic Hydrocarbons - PAHs - (water column and sediments); and
- Trace metals (water column and sediments).

DEQ's Water Quality Division is developing Total Maximum Daily Load requirements (TMDLs) within the lower Willamette River for these contaminants. A TMDL for 2,3,7,8-TCDD was established in 1991.

Conclusions/Recommendations

NOTE: As indicated previously, this review is limited to establishing a link between site activities and contamination in adjacent Portland Harbor sediments. It does not necessarily represent a thorough review of available site data, and the conclusions and recommendations presented below may reflect this limited focus.

The following conclusions are based on the contents of this review:

- Due to contaminants in their storm water discharge, possible material (alumina) loss during offloading, and petroleum products leaked from ships using their dock, site activities may be contributing towards aluminum and petroleum sediment contamination adjacent to the site. A recent composite sediment sample collected adjacent to the site showed elevated dibenzofuran and LPAHs, indicating that on-site activities and/or use of the site's dock may be contributing petroleum hydrocarbons to sediment.

There may be contamination of river sediments adjacent to the Goldendale site that represents a threat to human health and aquatic life within the river. An Expanded Preliminary Assessment (XPA) on the subject property should be conducted to evaluate sediment contamination, potential upland site contaminant sources, migration pathways, and past waste management practices and to determine sources of observed sediment contamination. Sediment sampling should include subsurface samples in the vicinity of the stormwater outfalls to further define the extent of contamination. As necessary, the XPA should present recommendations aimed at preventing potential further contamination of adjacent sediment. DEQ has determined that these actions warrant a high priority for follow-up.

There is insufficient information to propose adding the site to DEQ's Confirmed Release List or Inventory.

References

DEQ consulted the following general references in preparing this Strategy Recommendation:

1. Portland Harbor Sediment Investigation Report, prepared by Roy F. Weston, Inc. for USEPA, May 1998.

2. Portland Shipyard Sediment Investigation, prepared by Striplin Environmental Associates, Inc. for Port of Portland and Cascade General, Inc., November 9, 1998.

3. Sediment Sampling Results, Goldendale Aluminum Company Corps Permit Application ID No. 97114, transmitted to U.S. Army Corps of Engineers by CH2M Hill, March 22, 1999.

4. DEQ LUST Database.

5. DEQ HWIMSy Hazardous Waste Generator Database.

6. DEQ SPINS Spill Database.

7. MetroScan Property Records, Multnomah County, Oregon.

Attachments

Table 1: River Sediment Contaminant Concentrations

Figure 1: Site Location Map

Figure 2: Surface Sediment Sample Locations

Figure 3: Site Layout

TABLE 1

River Sediment Contaminant Concentrations
Goldendale Aluminum

Contaminant	Units	Upstream PSY76	Goldendale Dredge Composite	Downstream PSY71	Downstream PSY77	Apparent Portland Harbor Sediment Baseline Maximum Value
Antimony	ppm	<0.1	0.12	<0.1	<0.1	<5
Arsenic	ppm	4	3	4	6	<5
Cadmium	ppm	0.3	0.2	0.2	0.1	0.6
Chromium	ppm	26	22	26	25	41
Copper	ppm	36	29	36	32	60
Lead	ppm	48	12	13	15	30
Mercury	ppm	0.09	0.06	0.05	<0.05	0.1
Nickel	ppm	24	21	23	23	32
Silver	ppm	0.4	0.08	0.2	0.2	1.4
Zinc	ppm	130	68	86	85	118
bis(2-Ethylhexyl)phthalate	ppb	418	180	452	307	390
Butylbenzylphthalate	ppb	25	<20	18	11	<20
Di-N-Butylphthalate	ppb	<10	<20	15	<10	<20
Di-N-Octylphthalate	ppb	<10	<20	21	10	<20
Dibenzofuran	ppb	<10	180	<10	13	100
Dimethylphthalate	ppb	<10	<20	<10	<10	<20
Pentachlorophenol	ppb	<100	<60	<100	<100	Detect
Phenol	ppb	<50	<20	<50	<50	<20
LPAHs (total)	ppb	90	1706	19	628	700
HPAHs (total)	ppb	476	1832	326	1195	2400
DDTs (total)	ppb	5	3	<10	3	220
PCBs (total)	ppb	88	<10	<10	<10	<180
Pore Water Organotins (total)	ppb	<0.025	<0.02	<0.025	<0.025	NA
TOC	%	1.7	1.6	1.8	2	2
Sediment Sample Depth	cm	0-10	0-10	0-10	0-10	

100 = Value exceeds Portland Harbor Baseline Value

100 = Value is Greater than 2X Portland Harbor Baseline Value

NA = not available

PSY sample data from Portland Shipyard (November 9, 1998)

Dredge composite sample collected for Goldendale Aluminum on February 12, 1999

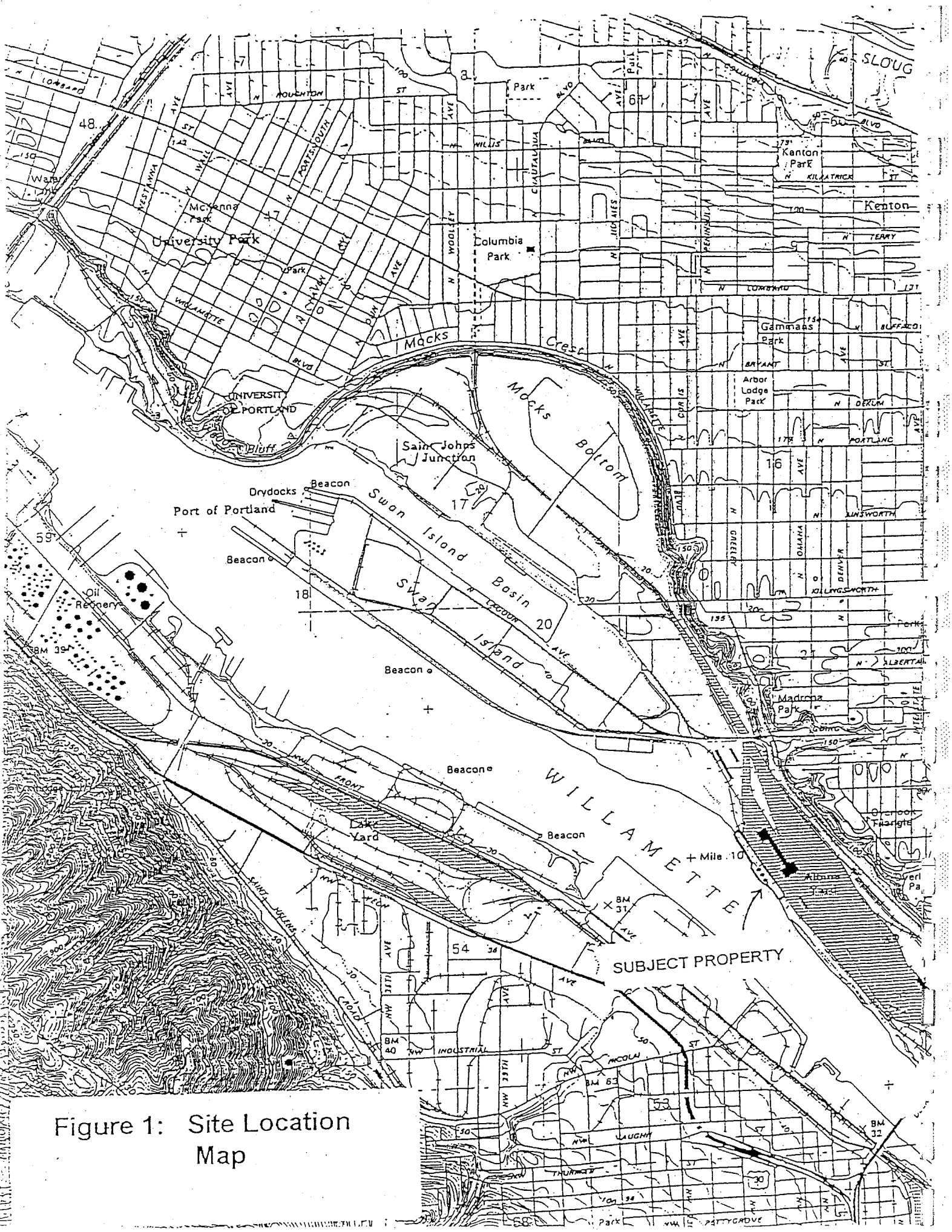
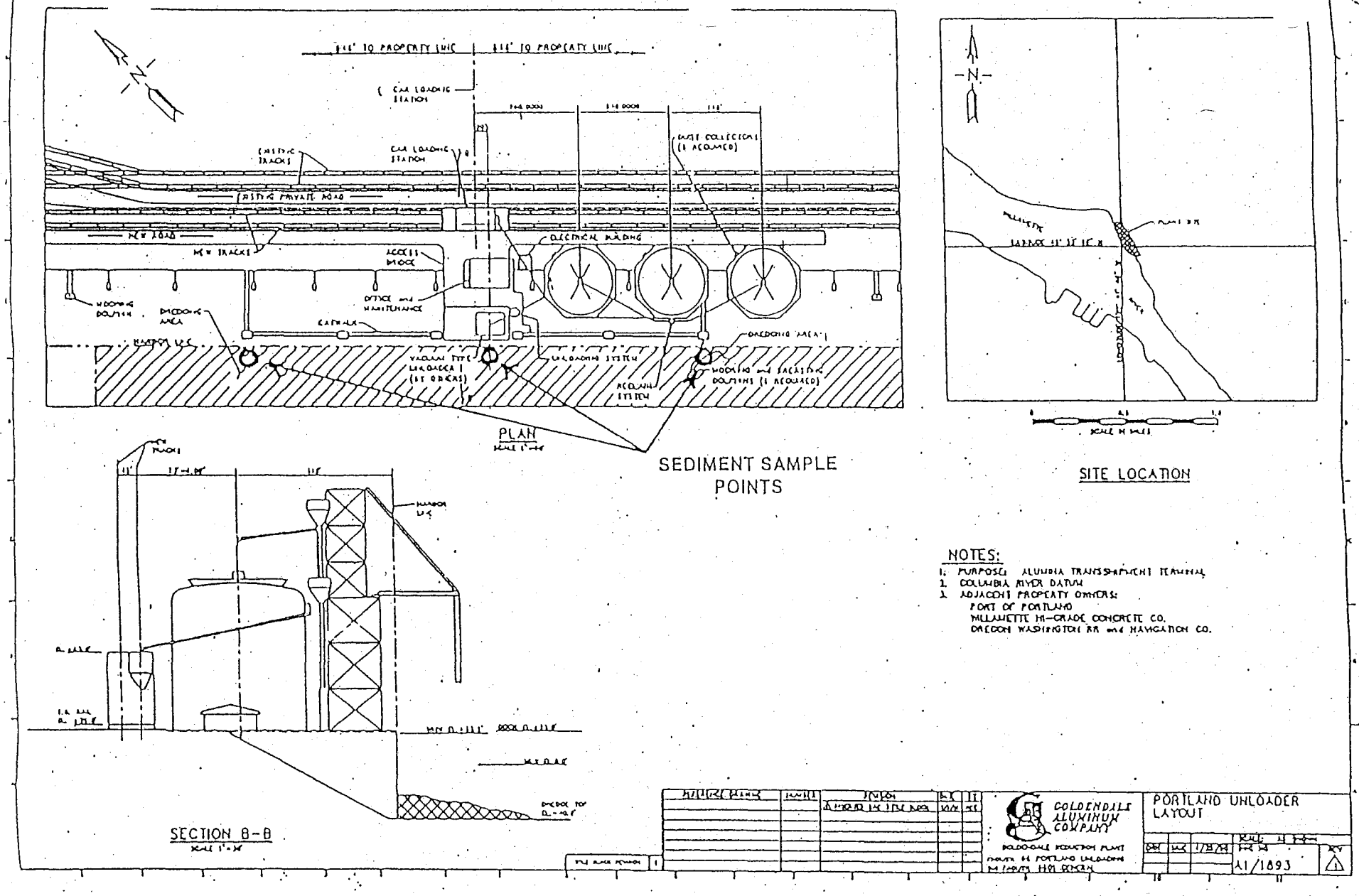


Figure 1: Site Location Map



(Willamette River - Maintenance Dredging)

Figure 3

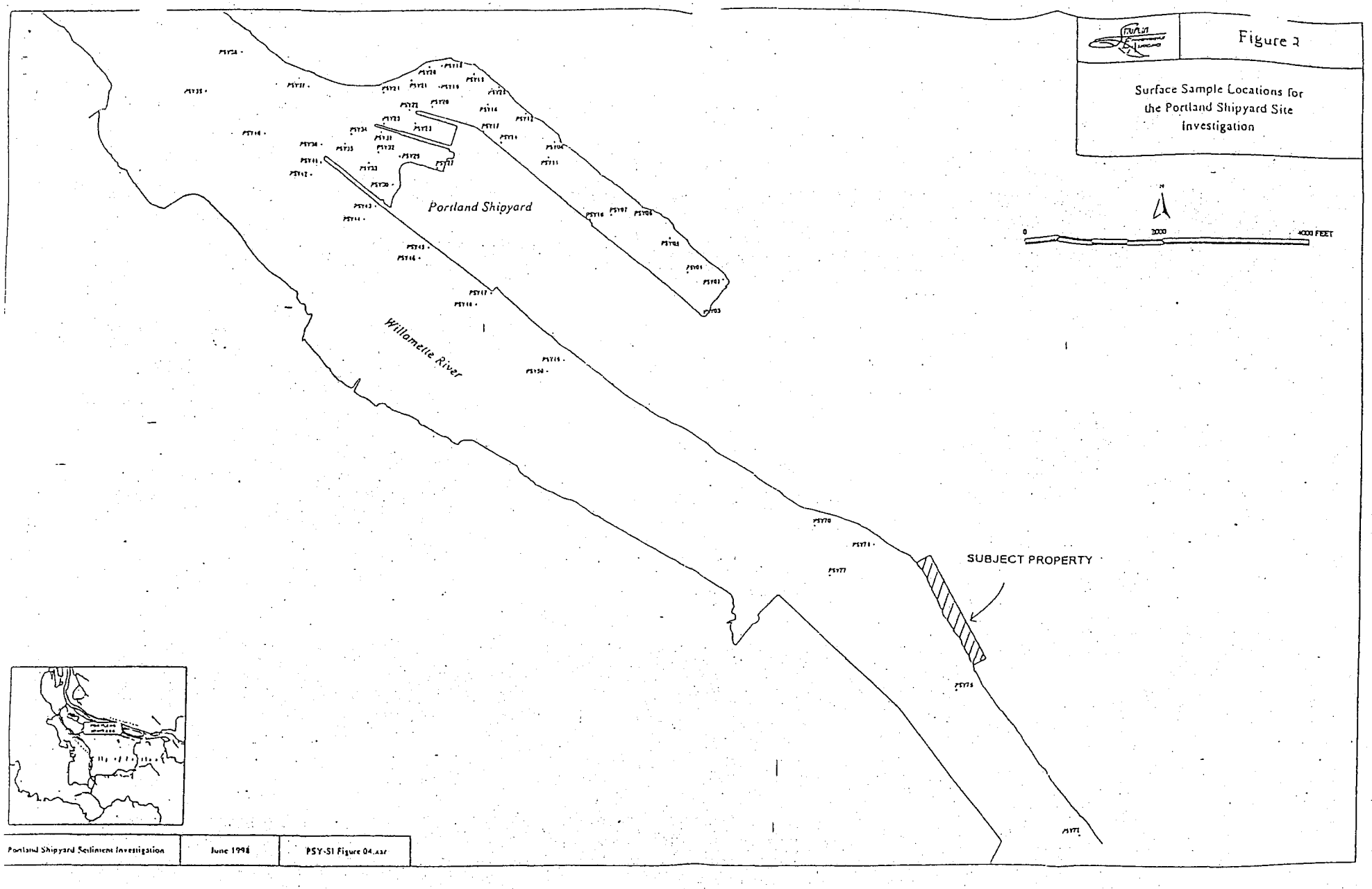


Figure 2

Surface Sample Locations for the Portland Shipyard Site Investigation

Portland Shipyard Sediment Investigation	June 1998	PSY-SI Figure 04.xsr

After Recording Mail To:

Ash Grove Cement Company
Attn.: Steve Ryan
11011 Cody Street
Overland Park, Kansas 66210

Recorded in MULTNOMAH COUNTY, OREGON
C. Swick, Deputy Clerk
A37 5 ATLJH
Total : 41.00

2005-252919 12/29/2005 11:10:14am

Until a change is requested, all tax statements shall be sent to:

Ash Grove Cement Company
Attn.:Steve Ryan
11011 Cody Street
Overland Park, Kansas 66210

Tax Parcel Nos.: 1N1E21CD-00100 (R316054); 1N1E21CD-00200 (R316000); 1N1E21CD-00300 (R316051); 1N1E21CD-00400 (R316011)

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY SPECIAL WARRANTY DEED

FOR VALUE RECEIVED, **NSC SMELTER LLC**, a Delaware limited liability company, Grantor, hereby conveys and specially warrants to **ASH GROVE CEMENT COMPANY**, a Delaware corporation, Grantee, the real property described on Exhibit A attached hereto, free of encumbrances created or suffered by Grantor, except as specifically set forth on Exhibit B hereto.

The true and actual consideration for this conveyance is $20,088,000.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

DATED this 22 day of Dec., 2005.

NSC SMELTER LLC

By: _____
Eugene I. Davis, President and CEO

FATCO. NO. NCS-181972

Portlnd1-2205494.5 0060970-00001

STATE OF NJ)
) ss.
County of Union)

The foregoing instrument was acknowledged before me this 22 day of Dec, 2005 by EUGENE I. DAVIS, as President and CEO of **NSC SMELTER LLC**, a Delaware limited liability company, on its behalf.

Notary Public for
My Commission Expires: July 8, 2008

ANA GONCALVES
NOTARY PUBLIC OF NEW JERSEY
Commission Expires 7/8/2008

Portlnd1-2205494.5 0060970-00001

EXHIBIT A
TO
STATUTORY SPECIAL WARRANTY DEED
(NSC SMELTER, LLC to ASH GROVE CEMENT)

Real Property Description

That real property in the City of Portland, Multnomah County, Oregon, described as follows:

A tract of land in Sections 21 and 28, Township 1 North, Range 1 East of the Willamette Meridian, in the City of Portland, County of Multnomah and State of Oregon, described as follows:

Beginning at the Harbor Monument set by the U.S. Engineers in the center line of Railroad Street in the City of Portland, produced Northwesterly and distant North 52° 30' West (a measured Lambert grid bearing of North 50°54'13" West) 988 feet measured along said center line of Railroad Street and said center line produced, from the City monument at the intersection of said Railroad Street and Harding Street; thence continuing North 52°30' West (a measured Lambert grid bearing of North 50°58'51" West), a distance of 3730.68 feet to an angle point in the harbor Line of Willamette River as said Harbor Line was established prior to 1968; thence North 29° 42' 39" West along said Harbor Line, 42.7 feet to the True Point of Beginning of the tract herein described; thence South 60°17'21" West perpendicular to said Harbor Line, 8.14 feet to the Harbor Line as re-established in 1968 by the Corps of Engineers; thence North 29°41'58" West along said re-established Harbor Line, 1675.09 feet to the angle point No. 69 therein; thence continuing along said re-established Harbor Line North 64°19'08" West, 20.92 feet; thence North 60°17'21" East, 19.67 feet to a point on the Harbor Line established prior to 1968, said point being North 29°42'39' West, 1692.30 feet from the True Point of Beginning; thence continuing North 60°17'21" East on a line perpendicular to said Harbor Line established prior to 1968, 247.50 feet; thence South 19°05'39" East on a line that forms an angle of 79°23' from Southwest to Southeast with the last described line, 257.69 feet; thence South 29°42'39" East on a line parallel with and 200.0 feet from said Harbor Line established prior to 1968, 189.17 feet; thence North 75°26'31" East on a line forming an angle of 74°50'50" from Southeast to Northeast with the Southeasterly extension of the last described line a distance of 2.8 feet; thence South 24°07'19" East along a straight line forming an angle of 80°26'10" from Northeast to Southeast with the Northeasterly extension of the last described line a distance of 27.75 feet; thence South 29°42'39" East along a straight line parallel with and 200 feet distant Northeasterly, measured at right angles, from said Harbor Line as established prior to 1968, 1221.51 feet; thence South 60°17'21" West on a perpendicular line, 200.00 feet to the True Point of Beginning.

TOGETHER WITH access rights over Tract A of PARTITION PLAT NO. 1992-164, a duly filed plat, as set forth in Private Road Crossing and Encroachment Agreement dated January 3, 1994 and recorded in Recorder's Fee No. 94016322.

EXHIBIT B
TO
STATUTORY SPECIAL WARRANTY DEED
(NSC SMELTER, LLC to ASH GROVE CEMENT)

Permitted Encumbrances

1. Real property taxes for the current tax year, a lien not yet due.

2. The rights of the public in and to that portion of the premises herein described lying within the limits of streets, roads, and highways.

3. Terms and conditions of that certain Unloader Agreement dated this same date, a memorandum of which is being recorded in the records of Multnomah County Oregon immediately following this deed.

4. Matters revealed on the ALTA Land Title Survey prepared by Caswell Hertel Surveyors Inc., Job No. 7133, dated September 26, 2005.[WAITING FOR RECERTIFIED/FINAL SURVEY].

5. Rights of the public and governmental bodies in and to that portion of the premises herein described lying below the high water mark of Willamette River and the ownership of the State of Oregon in and to that portion lying below the high water mark thereof.

6. Any adverse claim based upon the assertion that some portion of said land has been removed from or brought within the boundaries thereof by an avulsive movement of the Willamette River or has been formed by the process of accretion or reliction or has been created by artificial means or has accreted to such portion so created.

7. Reservations, including the terms and provisions thereof, pertaining to a concrete partition wall, as set forth in a deed from the Oregon-Washington Railroad and Navigation Co., to Portland Terminal Investment Co., recorded February 1, 1932, in Book 159, Page 469, Deed Records; further as set forth in a deed from Union Pacific Railroad Co. to Karr Grain Corporation, recorded August 14, 1959, in Book 1969, Page 601, Deed Records.

8. Mineral Reservation as contained in Deed recorded August 14, 1959 in Book 1969, Page 595 as set forth in a deed from Oregon-Washington Railroad & Navigation Co. to the Union Pacific Railroad Co..

9. Mineral Reservation as contained in Deed recorded August 14, 1959 in Book 1969, Page 601 as set forth in a deed from Union Pacific Railroad Co. to Kerr Grain Corporation.

10. Mineral Reservation as contained in Deed recorded January 23, 1961 in Book 2045, Page 300 as set forth in a deed from Oregon-Washington Railroad & Navigation Co. to the Union Pacific Railroad Co.

11. Mineral Reservation as contained in Deed recorded June 22, 1964 in Book 68, Page 357 as set forth in a deed from the Union Pacific Railroad Co. to Harvey Aluminum, Inc.

12. An easement for water pipe line and sewer and incidental purposes, recorded June 22, 1964 in Book 68, Page 357 and June 22, 1964 in Book 68, Page 362 of Official Records in favor of: the Union Pacific Railroad Co.

13. A deed conveying the minerals and mineral rights only from the Oregon-Washington Railroad & Navigation Co. to the Union Pacific Railroad Co., recorded July 25, 1979, in Book 1369, Page 995, Deed Records.

14. A deed conveying the minerals and mineral rights only from the Union pacific Railroad Co. to Union Pacific Land Resources Corporation, recorded July 25, 1979, in Book 1369, Page 998, Deed Records.

15. Covenants, conditions, restrictions and easements in the document recorded November 2,1979 as Book 1396, Page 2490 of Official Records.

16. The terms and provisions contained in the document entitled "License" recorded October 13, 1981 as Book 1555, Page 969 of Official Records.

17. The terms and provisions contained in the document entitled "Private Road Crossing & Encroachment Agreement" recorded January 31, 1994 as Fee No. 94016322 of Official Records.

18. Conditions and Restrictions contained in Land Use Review File No. LUR97-00299 GW, Recorded: June 6, 1997 as Fee No. 97084365.

19. Conditions and Restrictions contained in Land Use Review File No. LUR98-00475 GW, Recorded: September 2, 1998 as Fee No. 98158274.

CITY OF
PORTLAND, OREGON
OFFICE OF CITY ATTORNEY

Linda Meng, City Attorney
1221 S.W. 4th Avenue, Suite 430
Portland, Oregon 97204
Telephone: (503) 823-4047
Fax No.: (503) 823-3089

RECEIVED
MAY - 5 2008
LEGAL DEPARTMENT

April 30, 2008

MS. EILEEN FLINK
ASH GROVE CEMENT COMPANY
11011 CODY STREET
OVERLAND PARK, KANSAS 66210

Re: *City of Portland East Side Combined Sewer Overflow Project*

Dear Eileen:

Enclosed is a set of fully executed easement documents. Payment for the easements and the railroad switches is being processed and should be issued next week. I noticed that the applicable exhibits are not attached to the signed agreements. Shall I resend the exhibits electronically?

Thank you for your assistance and perseverance in finalizing this matter.

Very truly yours,

Jan V.V. Betz
Deputy City Attorney

Enclosures

JVVB:CoP
c. Linda Birth, PDOT
Patty Nelson, BES

An Equal Opportunity Employer
TDD (For Hearing & Speech Impaired) (503) 823-6868

PERMANENT TUNNEL EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **Ash Grove Cement Company, a Delaware corporation** (Grantor), in consideration of the sum of Five Hundred ($500) and no/100 Dollars, and other good and valuable consideration, to it paid by the City of Portland, a municipal corporation of the State of Oregon (Grantee), does hereby grant unto said City of Portland a non-exclusive perpetual easement for the purpose of constructing, reconstructing, operating, inspecting, monitoring and maintaining a subsurface sewer tunnel facility and appurtenances, through, under and along the following described parcel:

R/W #6246-3054

A portion of TRACT "B" in Partition Plat 1992-164, recorded December 18, 1992 Multnomah County Plat Records, situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Beginning at the most easterly point of said TRACT "B", said point being N 37° 54' 10" W, 30.00 feet from the most southerly point of TRACT "A" of Partition Plat 1992-164; thence along the arc of a 50.00 foot radius non-tangent curve to the right, through a central angle of 52° 40' 31", an arc distance of 45.97 feet, (the chord bears S 47° 06' 09" W, 44.37 feet); thence N 38° 59' 34" W, a distance of 92.43 feet; thence along the arc of 50.00 foot radius non-tangent curve to the right, through a central angle of 23° 31' 23", an arc distance of 20.53 feet, (the chord bears N 40° 20' 08" E, 20.38 feet) to a point of reverse curvature; thence along the arc of a 26.00 foot radius curve to the left, through a central angle of 90° 00' 00", an arc distance of 40.84 feet, (the chord bears N 07° 05' 43" E, 36.77 feet), to the southwesterly line of said TRACT "A"; thence S 37° 54' 10" E, along said southwesterly line of TRACT "A", a distance of 118.71 feet to the Point of Beginning.

Said easement area contains 4,544 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

1N1E28A 600 & 500

After Recording Return to:

106/800/Linda Birth

Tax Statement shall be sent to:

No Change

R/W #6246-3056-1

A portion of PARCEL 1 in Partition Plat 1992-164, recorded December 18, 1992 Multnomah County Plat Records, situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Commencing at the most southeasterly point of said PARCEL 1, said point being the most southerly point of TRACT "A" Partition Plat 1992-164; thence N 37° 54' 10" W, along the southwesterly line of said TRACT "A", a distance of 148.71 feet to the True Point of Beginning of the tract herein described: thence along the arc of 26.00 foot radius non-tangent curve to the right, through a central angle of 90° 00' 00", an arc distance of 40.84 feet, (the chord bears S 07° 05' 43" W, 36.77 feet) to a point of reverse curvature; thence along the arc of a 50.00 foot radius curve to the left, through a central angle of 23° 31' 23", an arc distance of 20.53 feet, (the chord bears S 40° 20' 08" W, 20.38 feet); thence N 38° 59' 34" W, a distance of 119.68 feet; thence along the arc of a 1,026.00 foot radius curve to the right, through a central angle of 16° 31' 27", an arc distance of 295.90 feet, (the chord bears N 30° 43' 51" W, 294.88 feet); thence N 22° 28' 07" W, a distance of 42.90 feet, to said southwesterly line of TRACT "A"; thence S 37° 54' 10" E, along said southwesterly line of TRACT "A", a distance of 423.42 feet to the True Point of Beginning.

Said easement area contains 16,384 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

R/W #6246-3056-2

A portion of PARCEL 1 in Partition Plat 1992-164, recorded December 18, 1992 Multnomah County Plat Records, situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Beginning at the most southeasterly point of said PARCEL 1, said point being the most southerly point of TRACT "A" Partition Plat 1992-164; thence S 52° 07' 10" W, a distance of 43.70 feet; thence N 38° 59' 34" W, a distance of 26.13 feet; thence along the arc of a 50.00 foot radius non-tangent curve to the left, through a central angle of 52° 40' 31", an arc distance of 45.97 feet, (the chord bears N 47° 06' 09" E, 44.37 feet), to the southwesterly line of said TRACT "A"; thence S 37° 54' 10" E, along said southwesterly line of TRACT "A", a distance of 30.00 feet to the Point of Beginning.

Said easement area contains 1,079 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

IT IS UNDERSTOOD and agreed that:

A. Grantor reserves the right to use the easement area for any lawful purpose not inconsistent with Grantee's permitted use, including the installation, maintenance, repair, removal, replacement or relocation of underground utilities and services, paths, roadways or driveways, parking lots, landscaping and continued operation and development of Grantor's property which do not materially interfere with the operation and maintenance of the tunnel facility or jeopardize the integrity of the facility. It is specifically agreed that the Grantor may construct buildings and other improvements within the Easement Area, if said improvements do not interfere with the Grantee's ability to operate and maintain the tunnel facility or jeopardize the integrity of the tunnel facility. Underground improvements within the Easement Area must be consistent with Exhibit B, which specifically prohibits any underground improvements within thirteen (13) feet of either side of the tunnel, and Grantor shall not install load bearing underground improvements within thirty-nine (39) feet above the crown of the tunnel and non-load bearing underground improvements within twenty-six (26) feet of the crown of the tunnel, as shown on Exhibit B, attached hereto. Grantor further agrees to provide prior notification of its intent to use the easement area for above or below surface installations, which must be approved by the Director of the Bureau of Environmental Services to ensure compliance with this easement.

B. This easement does not grant or convey to Grantee any right or title to the surface of the soil along the route of said tunnel.

D. This easement includes the right to make visual and photographic inspection of the surface and associated improvements during construction.

E. This easement shall bind the heirs and assigns of Grantor and shall inure to the benefit of the successors in title of Grantee.

F. Grantor represents and warrants that it has the authority to grant this easement, that, subject to all matters of record, the subject property is free from all liens and encumbrances that would materially affect the easement grant, and that it will defend the same to Grantee against the lawful claims and demands of all persons whomsoever, except as noted above.

G. This easement is granted pursuant to the exercise of the eminent domain power and authority of Grantee, with the consideration paid by Grantee accepted as just compensation for the property or property rights conveyed, which includes damage to the property remainder, if any, resulting from the acquisition or use of said property or property rights.

H. Grantee, by accepting this easement, is not accepting liability for any preexisting release of hazardous substances onto or from the subject property, and Grantor is not attempting to convey any such liability.

IN WITNESS WHEREOF, Ash Grove Cement Company, a Delaware corporation, pursuant to a resolution of its Board of Directors, duly and legally adopted, has caused these presents to be signed by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) on this 28th day of March, 2008.

Ash Grove Cement Company
A Delaware corporation

By: John H Ross III

By: Eileen Flink

STATE OF Kansas

County of Johnson

This instrument was acknowledged before me on March 28, 2008, by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) of Ash Grove Cement Company, a Delaware corporation.

NOTARY PUBLIC - State of Kansas
MELISSA S. RUSCH
My Appt. Exp. 10-17-12

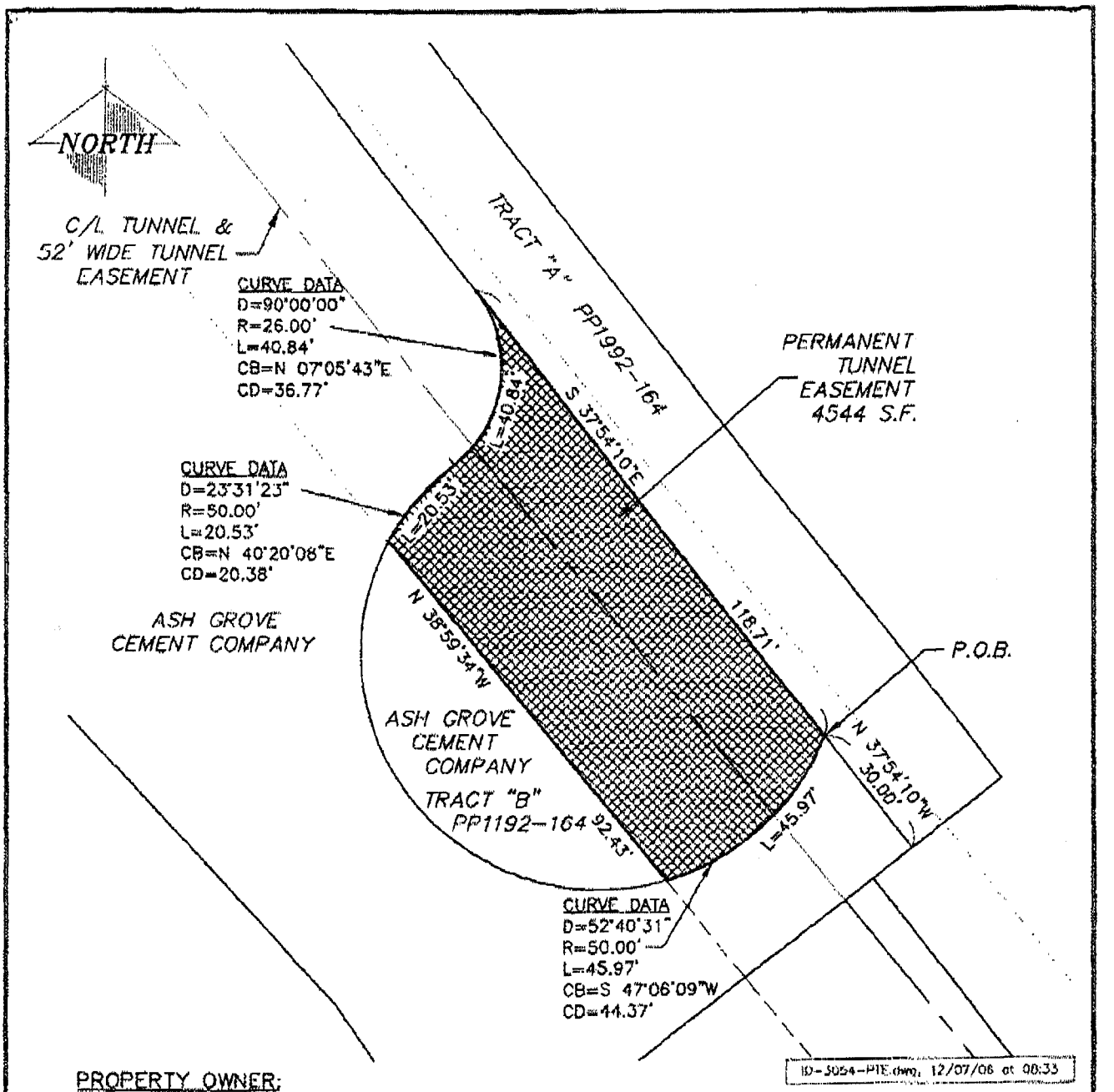
Melissa S. Rusch
Notary Public for State of Kansas
My Commission expires 10-17-12

APPROVED AS TO FORM:

Jan V.V. Body
City Attorney

APPROVED:

Dean C Marr
Bureau of Environmental Services Director or designee



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E28A 600
RNO: R237739
PROJECT ID: 3054

1 INCH

BAR EQUALS ONE INCH WHEN DRAWING IS PLOTTED FULL SIZE. IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

30 0 15 30 60

SCALE: 1"=30'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. Sixth Ave, Portland OR 97204

EAST SIDE CSO TUNNEL PROJECT
PERMANENT TUNNEL EASEMENT
PROJECT ID NO. 3054
STATE ID NO. 1N1E28A 00600
OWNER: ASH GROVE CEMENT COMPANY

T/A SECTION
JOB NO. 5516
SHEET NO. 1 of 1

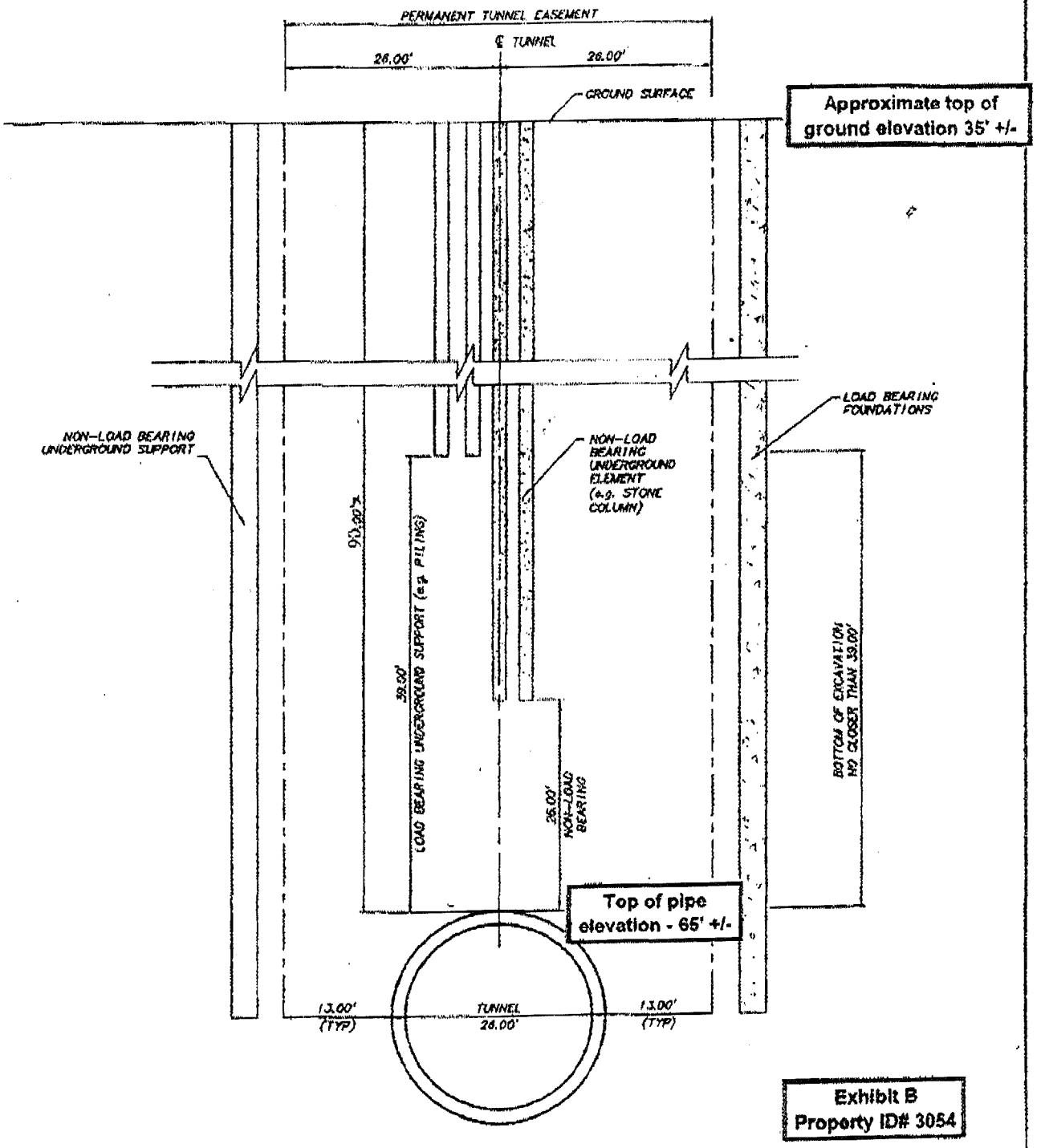
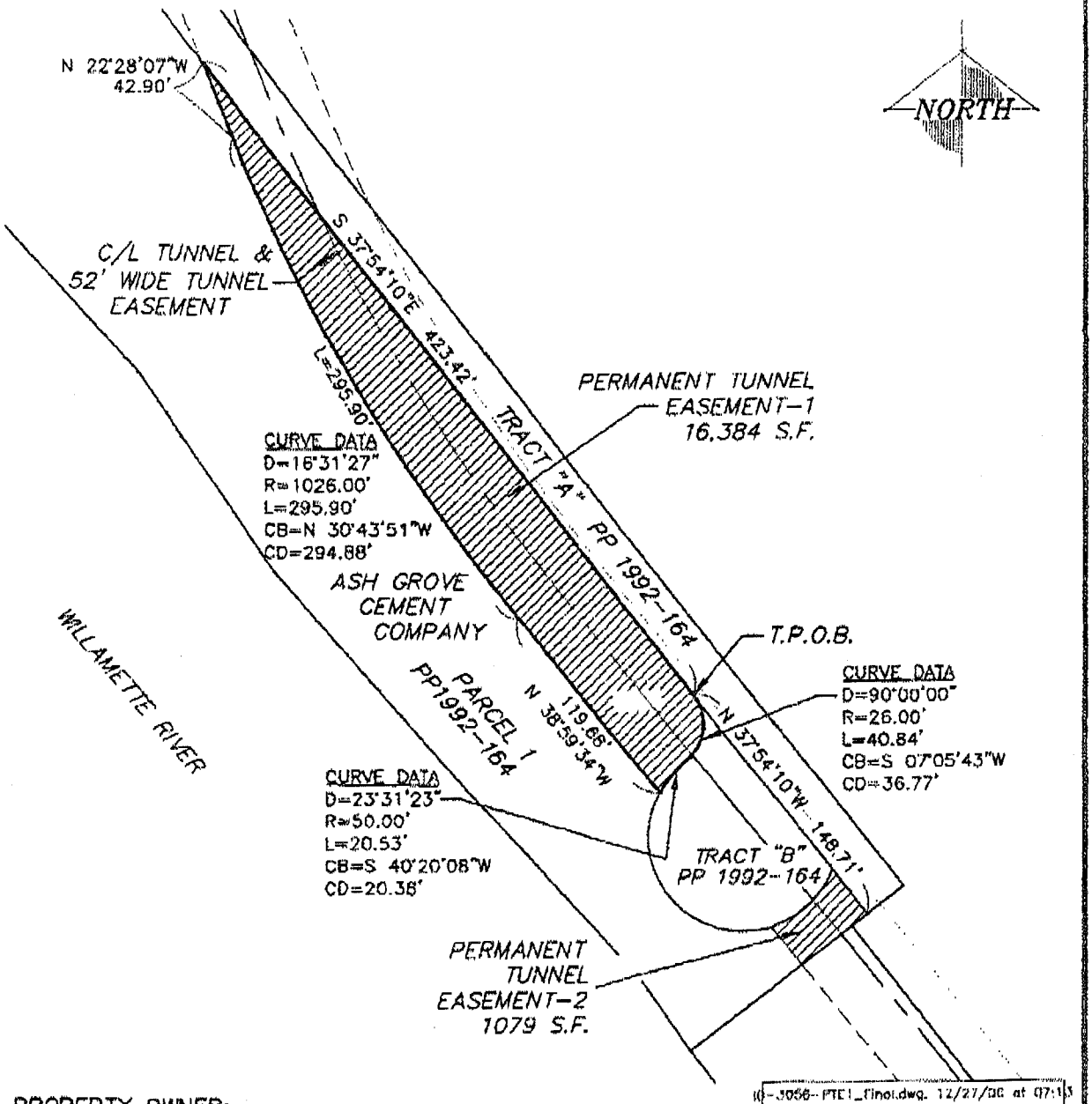


Exhibit B
Property ID# 3054

RESTRICTIONS ON SUBSURFACE DEVELOPMENT
FOR PROTECTION OF TUNNEL

PB PARSONS BRINCKERHOFF 400 S.W. Sixth Ave, Portland, OR 97204	CITY OF PORTLAND ENVIRONMENTAL SERVICES 10 0 5 10 20 SCALE FEET	EAST SIDE CSO TUNNEL TUNNEL EASEMENT	JOB NO. 5516 FIGURE NO. 2



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E28A 500
RNO: R237733
PROJECT ID: 3056

1 INCH

BAR EQUALS ONE
INCH WHEN DRAWING
IS PLOTTED FULL SIZE.
IF NOT, SCALE ACCORDINGLY

80 0 40 80 160

SCALE: 1" = 80'

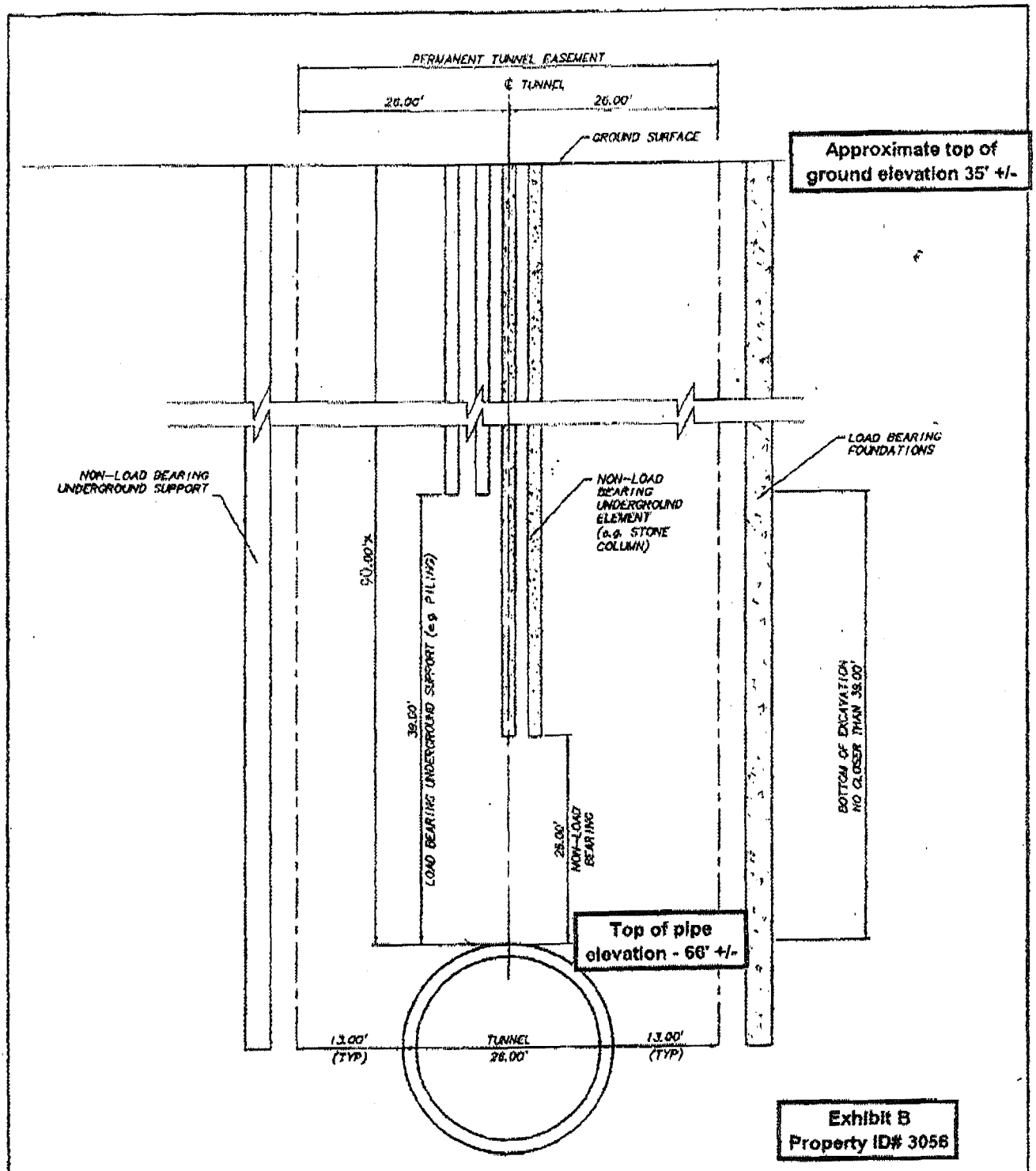
EXHIBIT "A"

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF

EAST SIDE CSO TUNNEL PROJECT
PERMANENT TUNNEL EASEMENT-1
PROJECT ID NO. 3056
STATE ID NO. 1N1E28A 00500
OWNER: ASH GROVE CEMENT COMPANY

JOB NO. 5516
SHEET NO. 1 of 2



RESTRICTIONS ON SUBSURFACE DEVELOPMENT
FOR PROTECTION OF TUNNEL

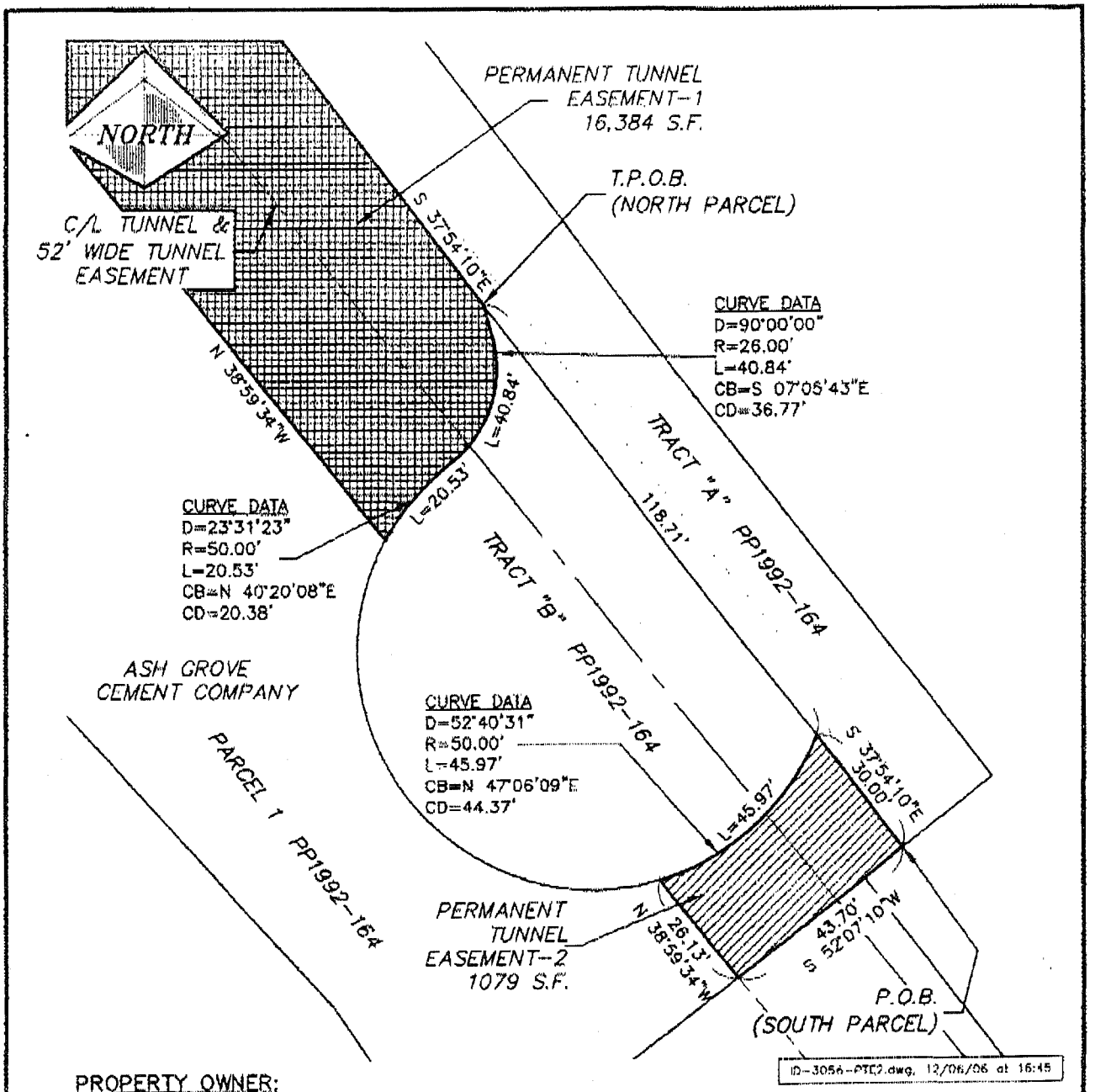
PARSONS BRINCKERHOFF
400 S.W. Sixth Ave. Portland, OR 97204

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

10 0 5 10 20
SCALE FEET

EAST SIDE CSO TUNNEL
TUNNEL EASEMENT

JOB NO. 5516
FIGURE NO. 2



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E28A 500
RNO: R237733
PROJECT ID: 3056

1 INCH

BAR EQUALS ONE INCH WHEN DRAWING IS PLOTTED FULL SIZE. IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

30 0 15 30 60

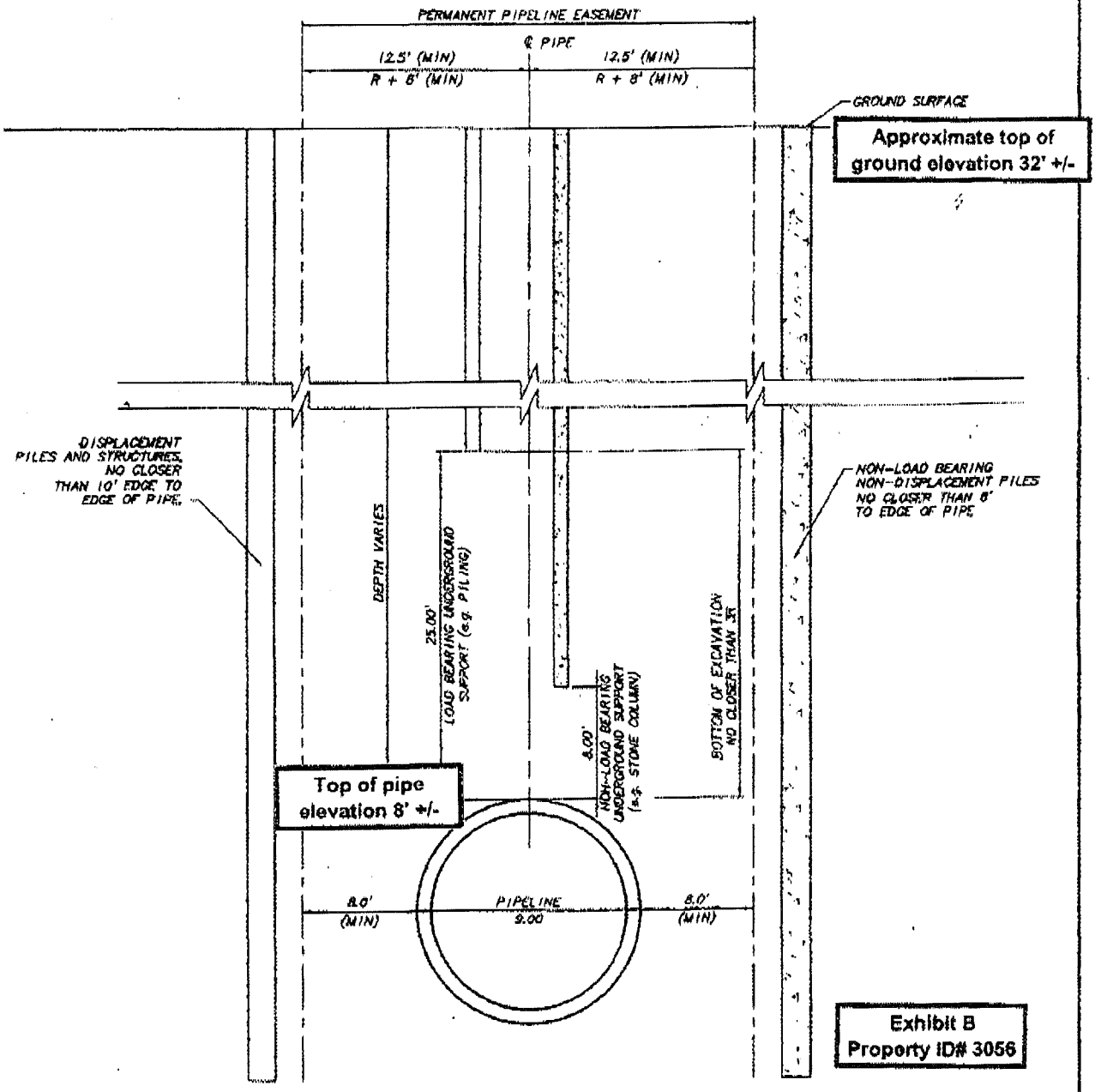
SCALE: 1"=30'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF

EAST SIDE CSO TUNNEL PROJECT
PERMANENT TUNNEL EASEMENT-2
PROJECT ID NO. 3056
STATE ID NO. 1N1E28A 00500
OWNER: ASH GROVE CEMENT COMPANY

JOB NO. 5516
SHEET NO. 6 of 8



NOTE: STRUCTURES AND IMPROVEMENTS MUST BE DESIGNED TO ATTAIN A ZERO LOAD ON THE SEWER FACILITIES AND NOT AFFECT THE INTEGRITY OF THE SEWER.

RESTRICTIONS ON DEVELOPMENT FOR PROTECTION OF SEWER

NTS

PB PARSONS BRINCKERHOFF 400 S.W. Main Ave, Portland, OR 97204	CITY OF PORTLAND ENVIRONMENTAL SERVICES	EAST SIDE CSO TUNNEL PIPELINE EASEMENT	JOB NO. 5516 FIGURE NO. 1

easement-section(WP1-VER2.dwg

PERMANENT SHAFT EASEMENT AND
PERMANENT ACCESS EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **Ash Grove Cement Company, a Delaware corporation** (Grantor), in consideration of the sum of Five Thousand Nine Hundred Seventy ($5,970) and no/100 Dollars, and other good and valuable consideration, to it paid by the City of Portland, a municipal corporation of the State of Oregon (Grantee), does hereby grant unto said City of Portland an exclusive and perpetual easement for the purpose of laying down, constructing, reconstructing, operating, inspecting, monitoring and maintaining a sewer or sewers, sewer shaft facilities and appurtenances, through, under, over and along the following described parcel:

R/W #6246-3056

A portion of PARCEL 1 in Partition Plat 1992-164, recorded December 18, 1992 Multnomah County Plat Records, situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon, described as follows:

Commencing at the most southeasterly corner of said PARCEL 1, said corner being the most southerly corner of TRACT "A" Partition Plat 1992-164; thence N 37° 54' 10" W, along the southwesterly line of said TRACT "A", a distance of 1,051.92 feet to the northwesterly line of a 20 foot wide public sewer easement recorded in Book 38, Page 101, on March 24, 1941; thence S 48° 56' 25" W, along said northwesterly line, a distance of 79.74 feet to the True Point of Beginning of the tract herein described: thence continuing along the northwesterly line of said public sewer easement, S 48° 56' 25" W, a distance of 41.00 feet; thence N 41° 03' 36" W, a distance of 38.00 feet; thence N 48° 56' 25" E, a distance of 41.00 feet; thence S 41° 03' 36" E, a distance of 38.00 feet to the True Point of Beginning.

Said easement area contains 1,558 square feet, more or less, and is generally depicted on Exhibit A attached hereto.

1N1E28A 500

After Recording Return to:

106/800/Linda Birth

Tax Statement shall be sent to:

No Change

IT IS UNDERSTOOD and agreed that the terms of the Permanent Shaft Easement are as follows:

A. Grantee will restore the easement area including without limitation previously existing roadways and landscaping to a condition that is as good as or better than the condition existing prior to the original construction, except as to permanent changes made necessary by and authorized under this easement. All access hatches, manholes or other structures within the existing roadway will be flush with the ground and rated for traffic.

B. No other utilities, buildings, facilities, easements, material storage, grade change or tree planting will be allowed within the easement boundaries without prior written consent of the Director of the Bureau of Environmental Services. Landscaping which by its nature is shallow rooted and may be easily removed to permit access to the sewer lines and facilities authorized by this easement shall not require consent.

C. This easement includes the right of access for construction, inspection, maintenance and necessary activities and reasonable rights of access to the easement area across Grantor's adjacent property.

D. Grantor reserves all other rights not conveyed herein, but will not exercise said rights in any manner that would be inconsistent or interfere with or materially affect rights herein granted.

E. This easement shall bind the heirs and assigns of Grantor and shall inure to the benefit of the successors in title of Grantee.

F. Grantor represents and warrants that it has the authority to grant this easement, that, subject to all matters of record, the subject property is free from all liens and encumbrances that would materially affect the easement grant, and that it will defend the same to Grantee against the lawful claims and demands of all persons whomsoever, except as noted above.

G. This easement is granted pursuant to the exercise of the eminent domain power and authority of Grantee, with the consideration paid by Grantee accepted as just compensation for the property or property rights conveyed, which includes damage to the property remainder, if any, resulting from the acquisition or use of said property or property rights.

H. To Grantor's knowledge, based upon statements made by third parties and without any independent investigation by Grantor, there are no underground storage tanks, as defined under Oregon law, presently on or under the subject property.

I. Grantee, by accepting this easement, is not accepting liability for any preexisting release of hazardous substances onto or from the subject property, and Grantor is not attempting to convey any such liability.

Grantor hereby further grants to the City of Portland a perpetual access right over an existing

roadway, as shown on attached Exhibit B, by this reference made a part hereof.

IT IS UNDERSTOOD and agreed that the terms of the Permanent Access Easement are as follows:

J. The easement is non-exclusive; Grantor may allow parking within the easement, but shall provide access upon 24 hours notice from Grantee.

K. No structure shall be erected on the easement without the prior written consent of the Director of the Bureau of Environmental Services.

L. If Grantor requests relocation of the access easement, the City of Portland shall release the easement, provided that a new access easement is granted providing equal or better access to the Shaft facility, at no cost to the City. Grantor must provide written notice by certified mail to the Chief Engineer of the City's Bureau of Environmental Services (BES) of a request for change in location of the access easement. If no objection is made within 30 days from receipt of the notice, the location of the easement may be changed.

IN WITNESS WHEREOF, Ash Grove Cement Company, a Delaware corporation, pursuant to a resolution of its Board of Directors, duly and legally adopted, has caused these presents to be signed by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) on this 28th day of March, 2008.

Ash Grove Cement Company
A Delaware corporation

By: John H Ross III

By: Eileen Flink

STATE OF Kansas

County of Johnson

This instrument was acknowledged before me on March 28, 2008, by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) of Ash Grove Cement Company, a Delaware corporation.

Melissa S. Rusch
Notary Public for State of Kansas
My Commission expires 10-17-12

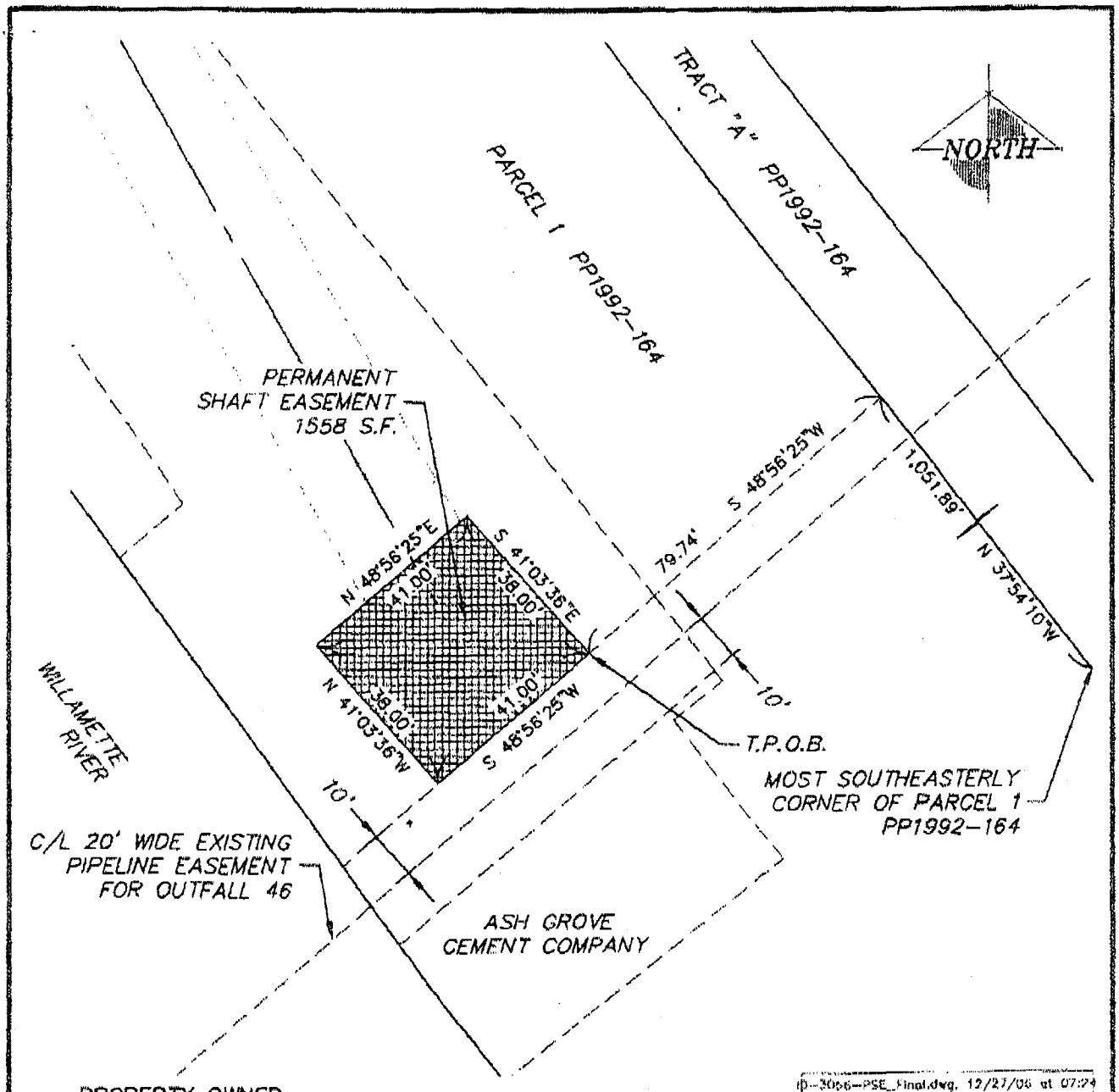
NOTARY PUBLIC - State of Kansas
MELISSA S. RUSCH
My Appt. Exp. 10-17-12

APPROVED AS TO FORM:

City Attorney

APPROVED:

Bureau of Environmental Services Director
or designee



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E28A 500
RNO: R237733
PROJECT ID: 3056

1 INCH

BAR EQUALS ONE INCH WHEN DRAWING IS PLOTTED FULL SIZE. IF NOT, SCALE ACCORDINGLY

30 0 15 30 60

SCALE:1"=30'

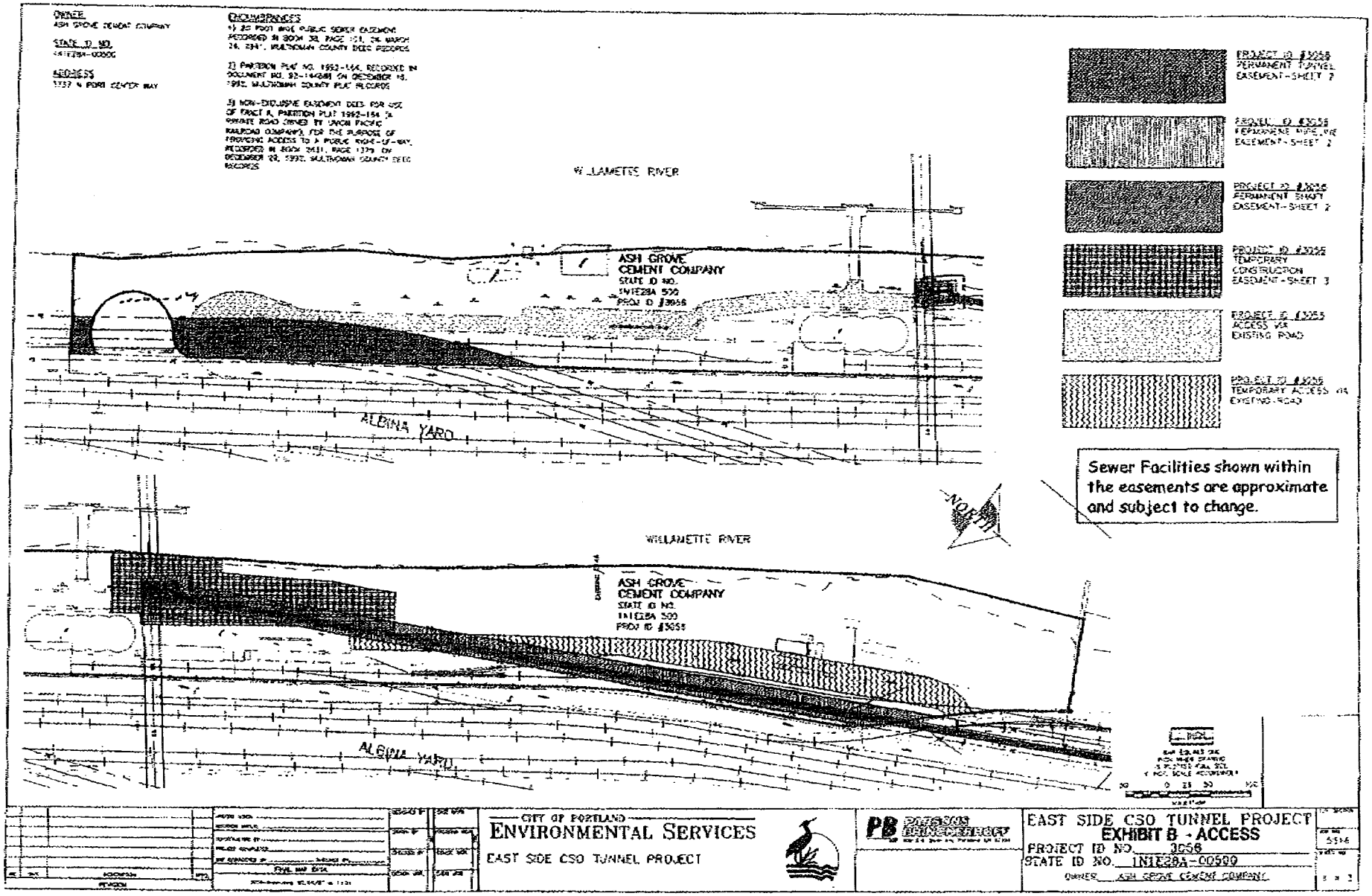
EXHIBIT "A"

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. Sixth Ave, Portland, OR 97204

EAST SIDE CSO TUNNEL PROJECT
PERMANENT SHAFT EASEMENT
PROJECT ID NO. 3056
STATE ID NO. 1N1E28A 00500
OWNER: ASH GROVE CEMENT COMPANY

Job No. 5516
1 of 1


OWNER
ASH GROVE CEMENT COMPANY
STATE ID NO.
ADDRESS
ENCUMBRANCES
WILLAMETTE RIVER
ASH GROVE CEMENT COMPANY
STATE ID NO.
1N1E28A 500
PROJ ID #3056
ALBINA YARD
PROJECT ID #3056 PERMANENT TUNNEL EASEMENT-SHEET 2
PROJECT ID #3056 PERMANENT PIPELINE EASEMENT-SHEET 2
PROJECT ID #3056 PERMANENT SHAFT EASEMENT-SHEET 2
PROJECT ID #3056 TEMPORARY CONSTRUCTION EASEMENT-SHEET 3
PROJECT ID #3056 ACCESS VIA EXISTING ROAD
PROJECT ID #3056 TEMPORARY ACCESS VIA EXISTING ROAD
Sewer Facilities shown within the easements are approximate and subject to change.
NORTH
WILLAMETTE RIVER
ASH GROVE CEMENT COMPANY
STATE ID NO.
1N1E28A 500
PROJ ID #3056
ALBINA YARD
CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
EAST SIDE CSO TUNNEL PROJECT
EXHIBIT B - ACCESS
PROJECT ID NO. 3056
STATE ID NO. 1N1E28A-00500
OWNER ASH GROVE CEMENT COMPANY

PERMANENT PIPELINE EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **Ash Grove Cement Company, a Delaware corporation** (Grantor), in consideration of the sum of Eleven Thousand Two Hundred Fifty Five ($11,255) and no/100 Dollars, and other good and valuable consideration, to it paid by the City of Portland, a municipal corporation of the State of Oregon (Grantee), does hereby grant unto said City of Portland a non-exclusive perpetual easement for the purpose of constructing, reconstructing, operating, inspecting, monitoring and maintaining a subsurface sewer pipeline and appurtenances, through, under and along the following described parcel:

R/W #6246-3056

A portion of PARCEL 1 in Partition Plat 1992-164, recorded December 18, 1992 Multnomah County Plat Records, situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Commencing at the most southeasterly corner of said PARCEL 1, said corner being the most southerly corner of TRACT "A" Partition Plat 1992-164; thence along the southwesterly line of said TRACT "A", the following courses; N 37° 54' 10" W, a distance of 1,510.50 feet; thence along the arc of a 1,359.18 foot radius curve to the right, through a central angle of 08° 09' 46", an arc distance of 193.64 feet (the chord bears N 33° 49' 16" W, 193.48 feet); thence N 29° 44' 23" W, a distance of 175.99 feet; thence along the arc of a non-tangent 893.30 foot radius curve to the left, through a central angle of 01° 12' 47", an arc distance of 18.91 feet (the chord bears N 41° 42" 39" W, 18.91 feet) to the True Point of Beginning of the tract herein described: thence S 29° 25' 55" E, a distance of 820.13 feet; thence S 48° 56' 25" W, a distance of 25.52 feet; thence N 29° 25' 55" W, a distance of 915.49 feet; thence along the arc a 1,163.64 foot non-tangent curve to the left, through a central angle of 01° 15' 51", an arc distance of 25.68 feet (the chord bears S 46° 02' 36" E, 25.68 feet); thence along

---

1N1E28A 500
1N1E21CD 300, 200, 100

After Recording Return to:

106/800/Linda Birth

Tax Statement shall be sent to:

No Change

the arc of a 893.30 foot curve to the right, through a central angle of 04° 21' 32", an arc distance of 67.96 feet (the chord bears S 44° 29' 49" E, 67.94 feet), to the True Point of Beginning.

Said easement area contains 21,747 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

R/W #6246-3059

A portion of that tract of land described in Book 2045, Page 304, recorded January 23, 1961, Multnomah County Deed Records, situated in the southwest quarter of Section 21, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Beginning at the most southeasterly corner of said tract, said corner being N 60° 24' 07" E, 41.43 feet from the most northerly corner of PARCEL 1 of Partition Plat 1992-164; thence S 60° 24' 07" W", along the southeasterly line of said tract, a distance of 7.52 feet; thence N 29° 25' 55" W, a distance of 847.80 feet; thence N 60° 16' 29" E, a distance of 2.02 feet; thence N 29° 44' 01" W, a distance of 44.49 feet; thence N 60° 24' 07" E, a distance of 1.43 feet to the southwesterly line of TRACT "A" of Partition Plat 1992-164; thence S 29° 42' 30" E, along said southwesterly line of TRACT "A", a distance of 892.30 feet to the Point of Beginning.

Said easement area contains 4,704 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

R/W #6246-3061

A portion of that tract of land described in Book 1369, Page 1004, recorded July 25, 1979, Multnomah County Deed Records, situated in the southwest quarter of Section 21, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Commencing at a point on the southwesterly line of TRACT "A" of Partition Plat 1992-164, said point being N 60° 24' 07" E, 41.43 feet from the most northerly corner of PARCEL 1 of Partition Plat 1992-164; thence N 29° 42' 30" W, along the southwesterly line of said "TRACT A", a distance of 892.30 feet to the True Point of Beginning of the tract herein described: thence S 60° 24' 07" W, along the southeasterly line of said tract, a distance of 1.43 feet; thence N 29° 44' 01" W, a distance of 42.60 feet; thence S 60° 16' 00" W, a distance of 1.56 feet; thence N 29° 25' 55" W, a distance of 185.28 feet; thence N 10° 59' 23" W, a distance of 6.59 feet to the southwesterly line of Tract "A" of Partition Plat 1992-164; thence S 29° 42' 30" E, along said southwesterly line of Tract "A", a distance of 234.12 feet to the True Point of Beginning.

Said easement area contains 543 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

R/W #6246-3062

A portion of that tract of land described in Book 68, Page 362, recorded June 22, 1964, Multnomah County Deed Records, situated in the southwest quarter of Section 21, T1N, R1E, W.M., in the City of Portland, State of Oregon. The subsurface horizontal outline of said easement is described as follows:

Beginning at the most southeasterly corner of PARCEL 3 of Partition Plat 1990-69; thence N 60°24' 43" E, along the northwesterly line of said tract, a distance of 17.63 feet; thence S 29° 25' 55" E, a distance of 119.65 feet to the southwesterly line of TRACT "A" of Partition Plat 1992-164; thence along said southwesterly line of TRACT "A", the following courses: S 19° 05' 36" E, a distance of 136.09 feet; S 29° 42' 30" E, a distance of 189.12 feet; N 75° 36' 06" E, a distance of 2.79 feet; thence S 24° 08' 30" E, a distance of 27.75 feet; S 29° 42' 30" E, a distance of 95.15 feet; thence S 10° 59' 23" E, leaving the southwesterly line of TRACT "A", a distance of 6.59 feet: thence N 29° 25' 55" W, a distance of 572.33 feet to the southeasterly line of PARCEL 3 of Partition Plat 1990-69; thence N 60° 24' 43" E along said southeasterly line of PARCEL 3, a distance of 7.37 feet to the Point of Beginning.

Said easement area contains 5,163 square feet, more or less, and is generally depicted on Exhibits A and B attached hereto.

IT IS UNDERSTOOD and agreed that:

A. This easement includes the right of access for construction, inspection, maintenance or other sewerage system activities.

B. Grantor reserves the right to use the easement area for any lawful purpose not inconsistent with Grantee's permitted use, including the installation, maintenance, repair, removal, replacement or relocation of underground utilities and services, paths, roadways or driveways, parking lots, landscaping and continued operation and development of Grantor's property which does not materially interfere with the operation and maintenance of the pipeline facility or jeopardize the integrity of the facility. Grantor further agrees to provide prior notification of its intent to use the easement area for above or below surface installations, which must be approved by the Director of the Bureau of Environmental Services to ensure compliance with this easement.

C. This easement does not grant or convey to Grantee any right or title to the surface of the soil along the route of said pipeline.

D. This easement includes the right to make visual and photographic inspection of the surface and associated improvements during construction.

E. This easement shall bind the heirs and assigns of Grantor and shall inure to the benefit of the successors in title of Grantee.

F. Grantor represents and warrants that it has the authority to grant this easement, that, subject to all matters of record, the subject property is free from all liens and encumbrances that

would materially affect the easement grant, and that it will defend the same to Grantee against the lawful claims and demands of all persons whomsoever, except as noted above.

G. This easement is granted pursuant to the exercise of the eminent domain power and authority of Grantee, with the consideration paid by Grantee accepted as just compensation for the property or property rights conveyed, which includes damage to the property remainder, if any, resulting from the acquisition or use of said property or property rights.

H. To Grantor's knowledge based upon statements made by third parties and without any independent investigation by Grantor, there are no underground storage tanks, as defined under Oregon Law, presently on or under the subject property.

I. Grantee, by accepting this easement, is not accepting liability for any preexisting release of hazardous substances onto or from the subject property, and Grantor is not attempting to convey any such liability.

IN WITNESS WHEREOF, Ash Grove Cement Company, a Delaware corporation, pursuant to a resolution of its Board of Directors, duly and legally adopted, has caused these presents to be signed by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) on this 28th day of March, 2008.

Ash Grove Cement Company
A Delaware corporation

By: John H. Ross III

By: Eileen Flink

STATE OF Kansas

County of Johnson

This instrument was acknowledged before me on March 28, 2008, by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) of Ash Grove Cement Company, a Delaware corporation.

Melissa S. Rusch

NOTARY PUBLIC - State of Kansas
MELISSA S. RUSCH
My Appt. Exp. 10-17-12

Notary Public for State of Kansas
My Commission expires 10-17-12

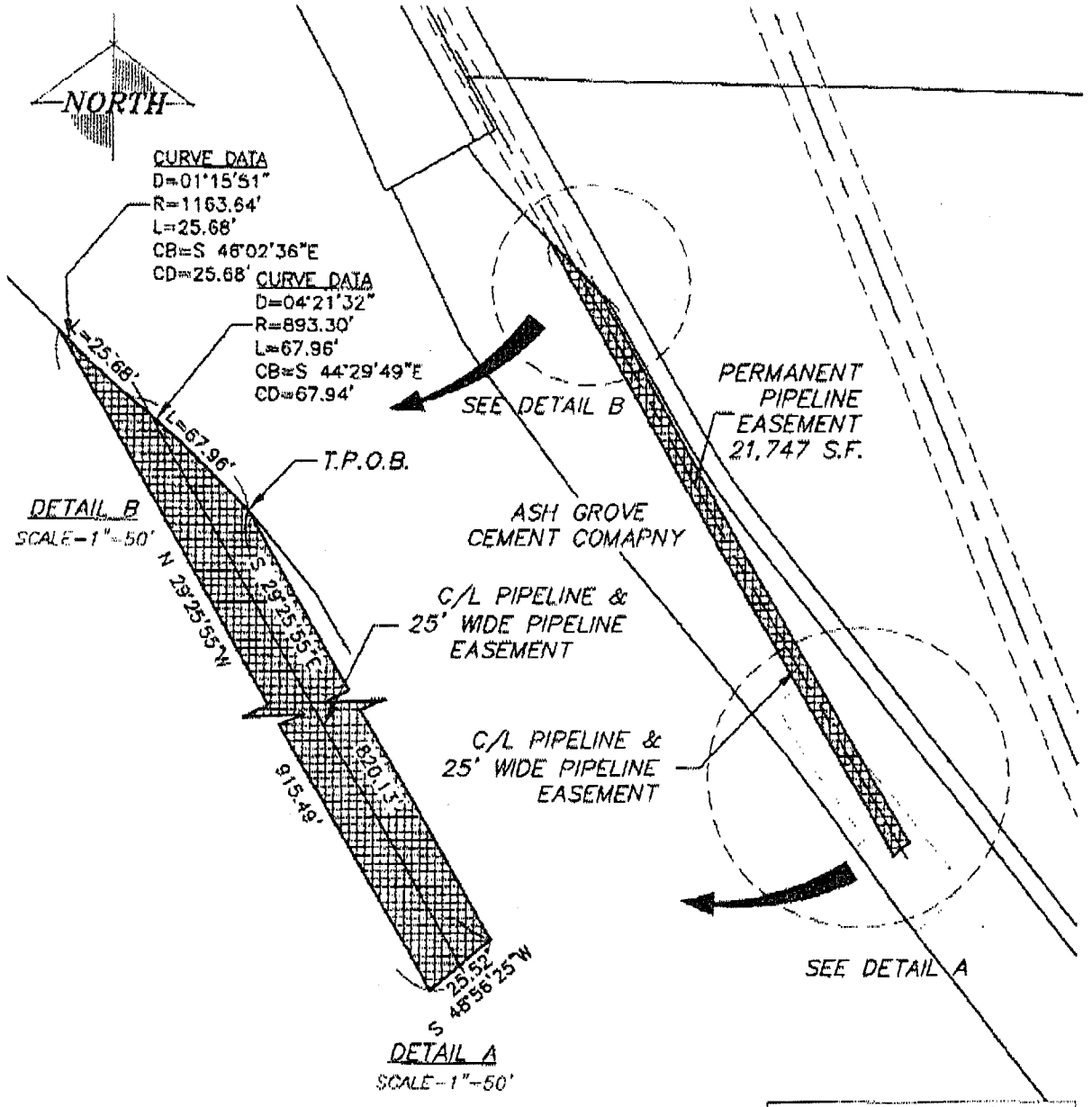
APPROVED AS TO FORM:

City Attorney

APPROVED:

for DM

Bureau of Environmental Services Director
or designee



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E28A 500
RNO: R237733
PROJECT ID: 3056

1 INCH

BAR EQUALS ONE INCH WHEN DRAWING IS PLOTTED FULL SIZE. IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

200 0 100 200 400

SCALE:1"=200'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. Sixth Ave. Portland, OR 97204

EAST SIDE CSO TUNNEL PROJECT
PERMANENT PIPELINE EASEMENT
PROJECT ID NO. 3056
STATE ID NO. 1N1E28A 00500
OWNER: ASH GROVE CEMENT COMPANY

DWG NO. 5516
SHEET NO. 1 of 1

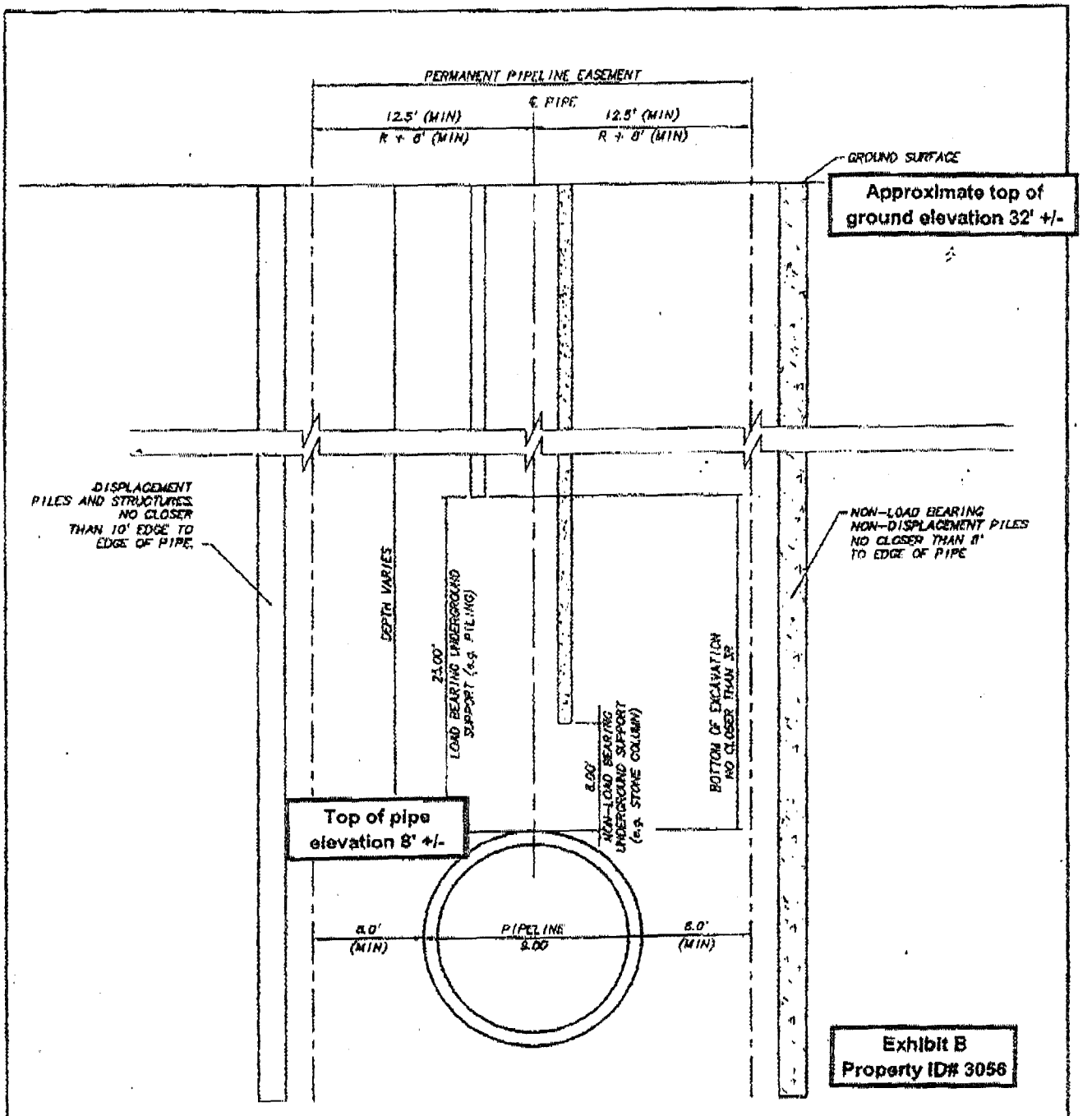


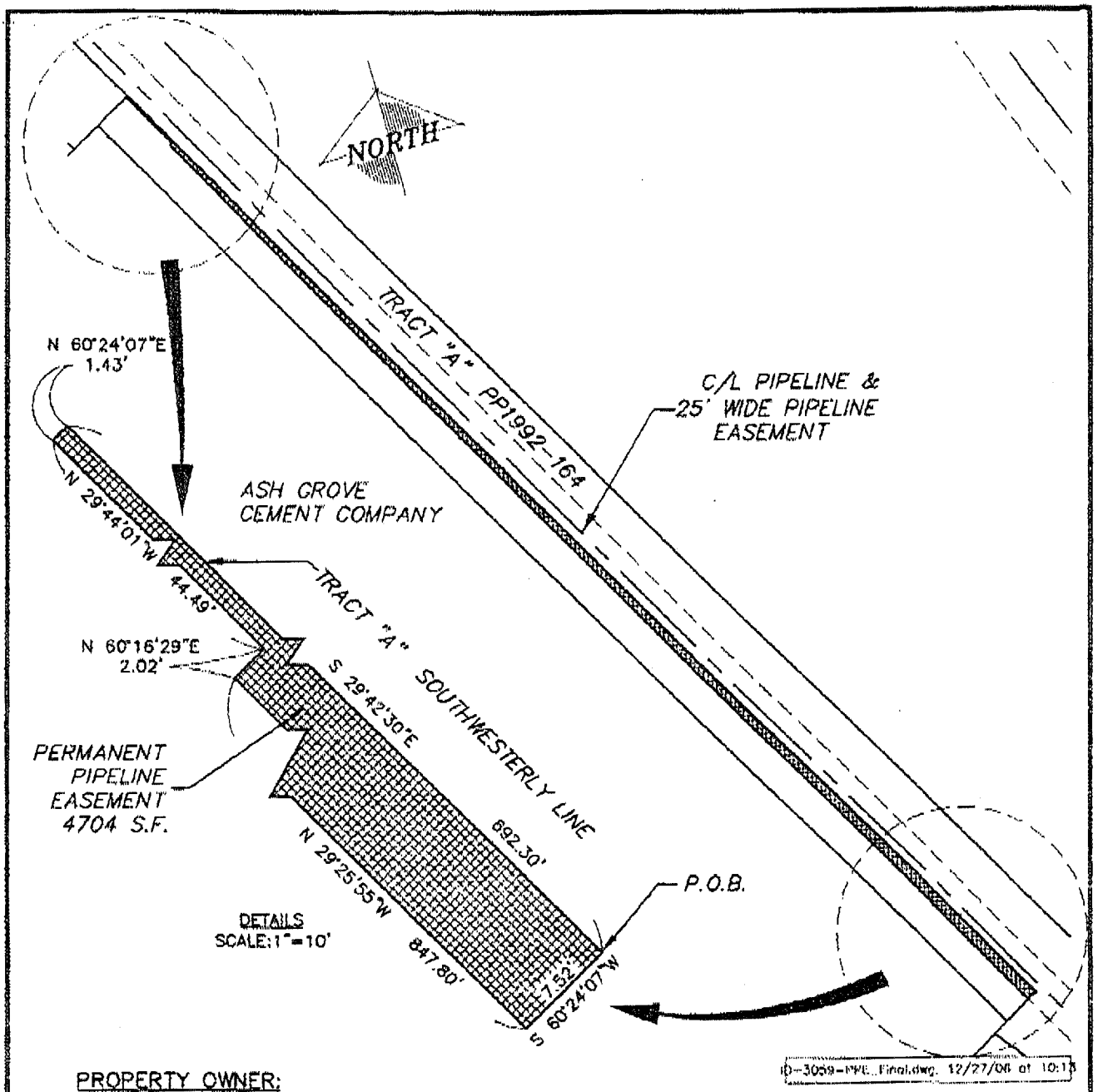
Exhibit B
Property ID# 3056

NOTE: STRUCTURES AND IMPROVEMENTS MUST BE DESIGNED TO ATTAIN A ZERO LOAD ON THE SEWER FACILITIES AND NOT AFFECT THE INTEGRITY OF THE SEWER.

RESTRICTIONS ON DEVELOPMENT FOR PROTECTION OF SEWER

NTS

PB PARSONS BRINCKERHOFF 200 S.W. Sixth Ave. Portland, OR 97204	CITY OF PORTLAND ENVIRONMENTAL SERVICES	EAST SIDE CSO TUNNEL PIPELINE EASEMENT	JOB NO. 5516 FIGURE NO. 1



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E21CD 300
RNO: R316051
PROJECT ID: 3059

1 INCH

BAR EQUALS ONE
INCH WHEN DRAWING
IS PLOTTED FULL SIZE.
IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

100 0 50 100 200

SCALE:1"=100'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. 6th Ave. Portland, OR 97204

EAST SIDE CSO TUNNEL PROJECT
PERMANENT PIPELINE EASEMENT
PROJECT ID NO. 3059
STATE ID NO. 1N1E21CD 00300
OWNER: ASH GROVE CEMENT COMPANY

JOB NO. 5516
SHEET NO. 1 of 1

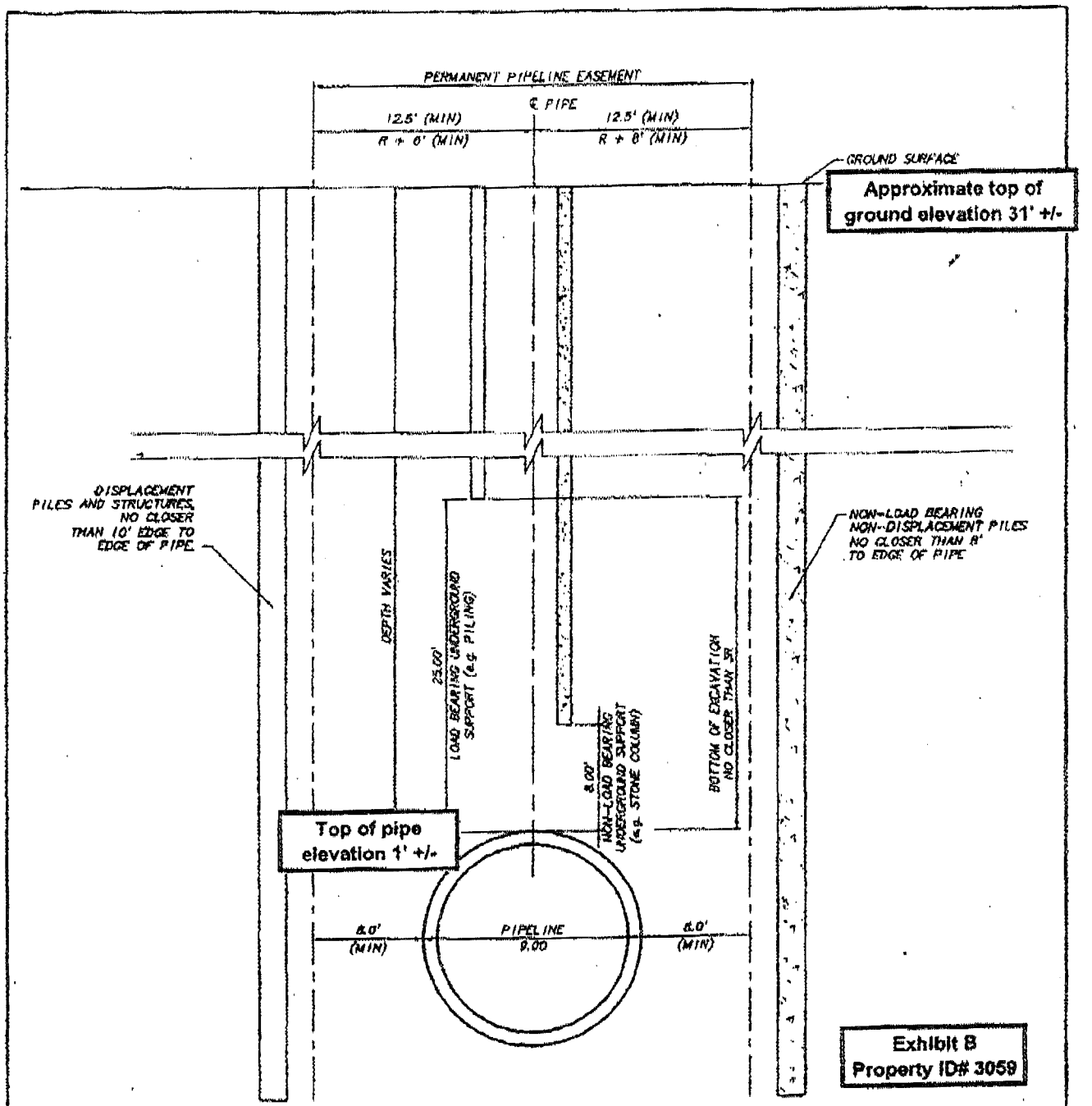


Exhibit B
Property ID# 3059

NOTE: STRUCTURES AND IMPROVEMENTS MUST BE DESIGNED TO ATTAIN A ZERO LOAD ON THE SEWER FACILITIES AND NOT AFFECT THE INTEGRITY OF THE SEWER.

RESTRICTIONS ON DEVELOPMENT FOR PROTECTION OF SEWER

NTS

PARSONS BRINCKERHOFF
400 S.W. Sixth Ave. Portland, OR 97204

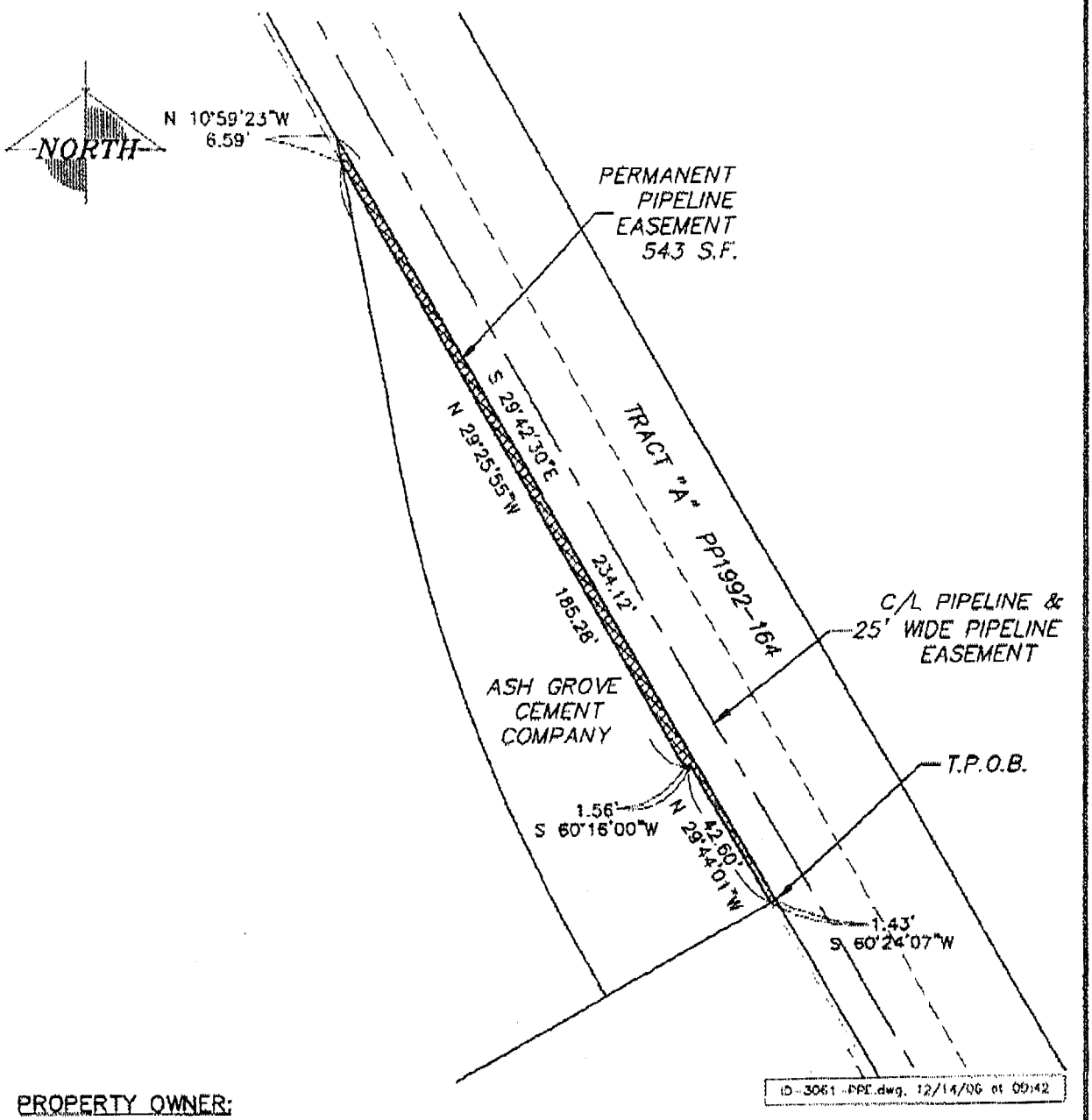
CITY OF PORTLAND
ENVIRONMENTAL SERVICES

EAST SIDE CSO TUNNEL

PIPELINE EASEMENT

JOB NO. 5516

FIGURE NO. 1



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E21CD 200
RNO: R316000
PROJECT ID: 3061

1 INCH

BAR EQUALS ONE
INCH WHEN DRAWING
IS PLOTTED FULL SIZE.
IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

40 0 20 40 80

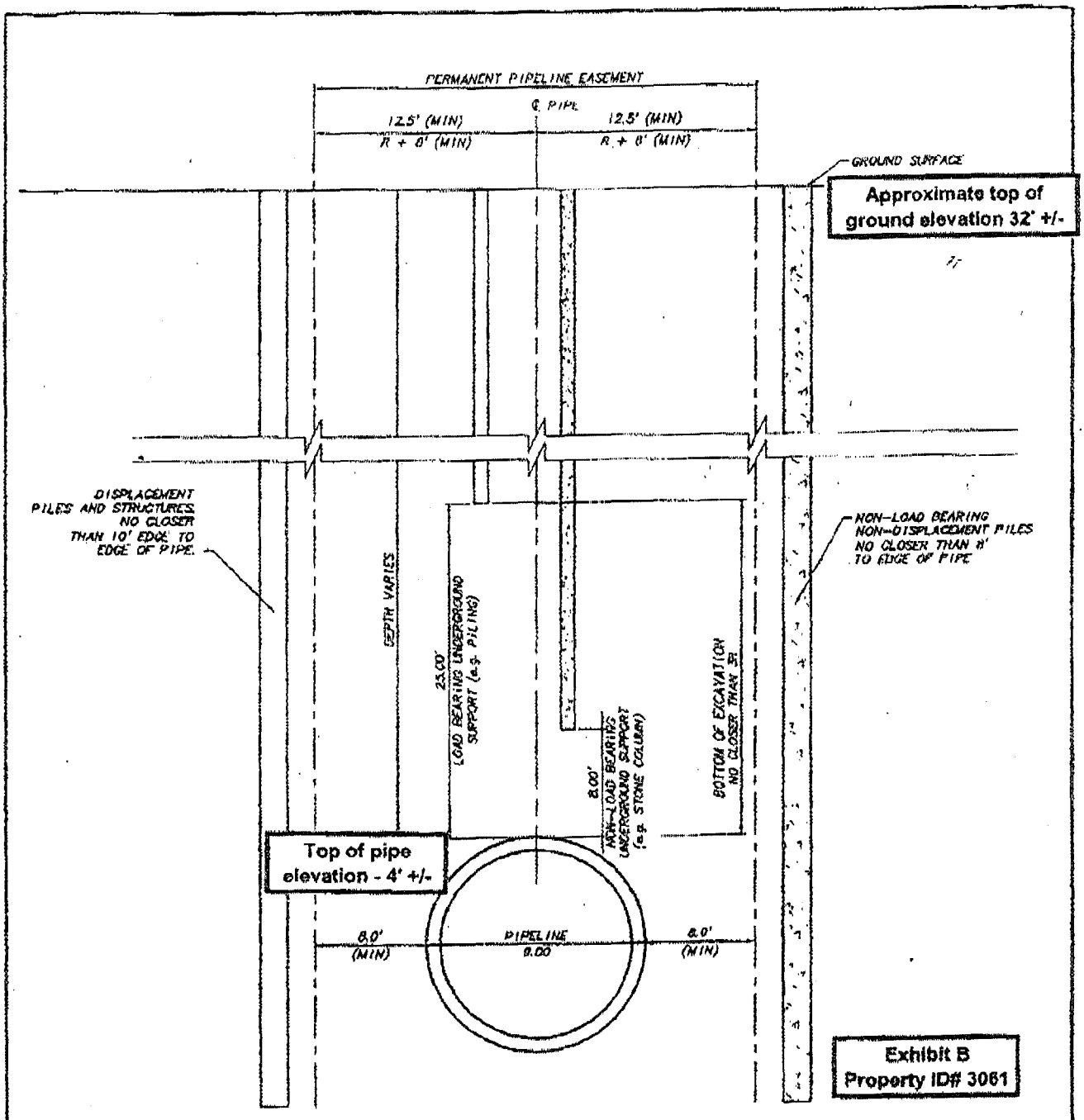
SCALE: 1"=40'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. Sixth Ave, Portland, OR 97204

EAST SIDE CSO TUNNEL PROJECT
PERMANENT PIPELINE EASEMENT
PROJECT ID NO. 3061
STATE ID NO. 1N1E21CD 00200
OWNER: ASH GROVE CEMENT COMPANY

1/4 SECTION
JOB NO 5516
SHEET NO. 1 of 1



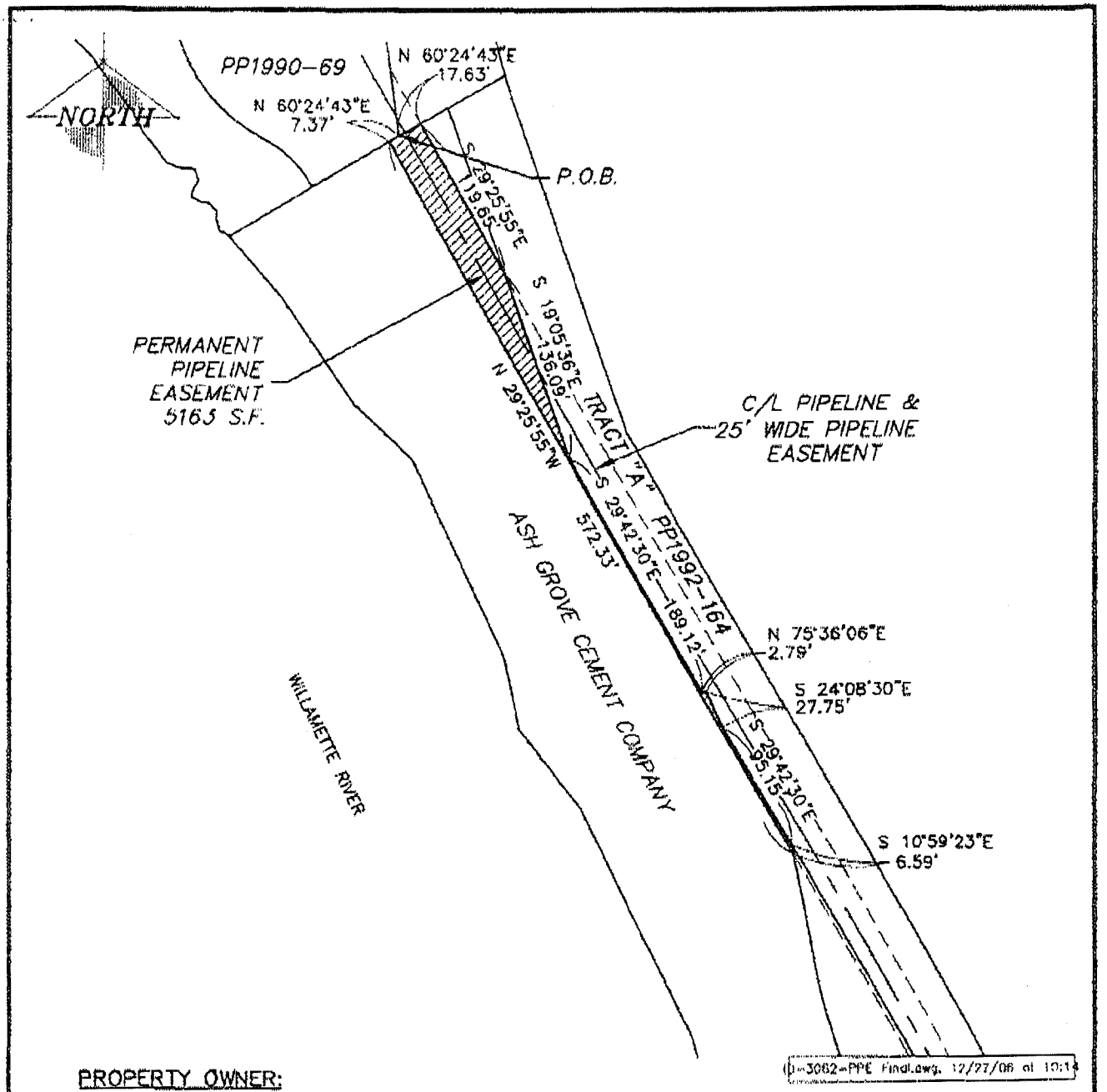
NOTE: STRUCTURES AND IMPROVEMENTS MUST BE DESIGNED TO ATTAIN A ZERO LOAD ON THE SEWER FACILITIES AND NOT AFFECT THE INTEGRITY OF THE SEWER.

RESTRICTIONS ON DEVELOPMENT FOR PROTECTION OF SEWER

NTS

PB PARSONS BRINCKERHOFF 400 S.W. Sixth Ave, Portland OR 97204	CITY OF PORTLAND ENVIRONMENTAL SERVICES	EAST SIDE CSO TUNNEL PIPELINE EASEMENT	JOB NO. 5516 FIGURE NO. 1

easement-section(SWP) VER2.dwg



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E21CD 100
RNO: R316054
PROJECT ID: 3062

1 INCH

BAR EQUALS ONE
INCH WHEN DRAWING
IS PLOTTED FULL SIZE.
IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

100 0 50 100 200

SCALE: 1" = 100'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. Sixth Ave, Portland, OR 97204

EAST SIDE CSO TUNNEL PROJECT
PERMANENT PIPELINE EASEMENT
PROJECT ID NO. 3062
STATE ID NO. 1N1E21CD 00100
OWNER: ASH GROVE CEMENT COMPANY

JOB NO. 5516
SHEET NO. 1 of 1

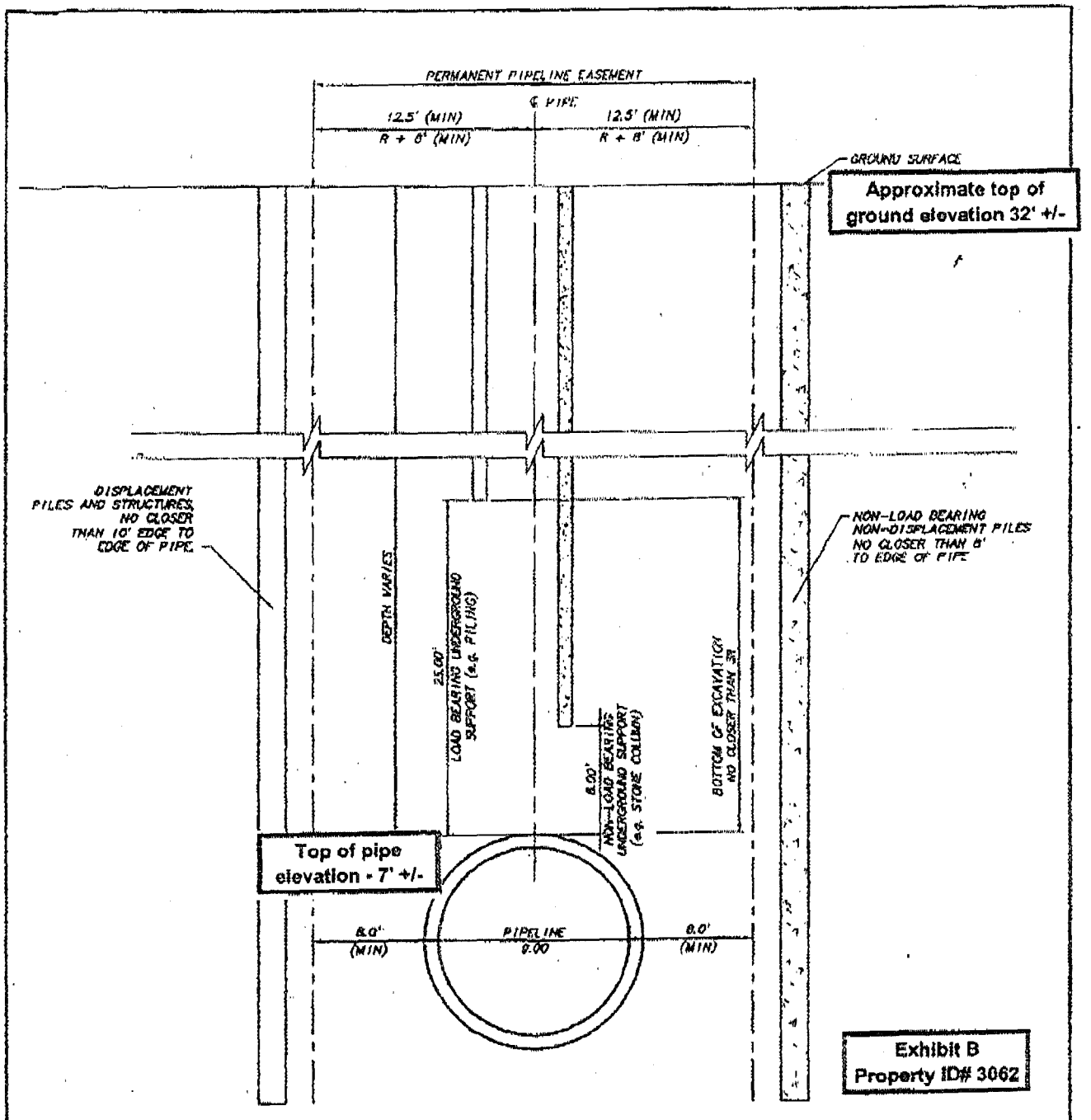


Exhibit B
Property ID# 3062

NOTE: STRUCTURES AND IMPROVEMENTS MUST BE DESIGNED TO ATTAIN A ZERO LOAD ON THE SEWER FACILITIES AND NOT AFFECT THE INTEGRITY OF THE SEWER.

RESTRICTIONS ON DEVELOPMENT FOR PROTECTION OF SEWER

NTS

PARSONS BRINCKERHOFF
400 S.W. Sixth Ave. Portland, OR 97204

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

EAST SIDE CSO TUNNEL

PIPELINE EASEMENT

JOB NO. 5516

FIGURE NO. 1

TEMPORARY CONSTRUCTION EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **Ash Grove Cement Company, a Delaware corporation** (Grantor) in consideration of the sum of Twenty Two Thousand Three Hundred Five ($22,305) and no/100 Dollars, and other good and valuable consideration, to it paid by the City of Portland, a municipal corporation of the State of Oregon (Grantee), does hereby grant unto said City of Portland a temporary easement for the purpose of supporting construction activities, including access, associated with the East Side Combined Sewer Overflow Project, through, under, over and along the following described parcel:

R/W #6246-3056

A portion of PARCEL 1 in Partition Plat 1992-164, recorded December 18, 1992, Multnomah County Plat Records, situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon, described as follows:

Commencing at the most southeasterly corner of said PARCEL 1, said corner being the most southerly corner of TRACT "A" Partition Plat 1992-164; thence N 37° 54' 10" W along the southwesterly line of said TRACT "A", a distance of 1,051.89 feet to the northwesterly line of an existing 20 foot City of Portland storm sewer easement; thence S 48° 56' 25" W, along said northwesterly line, a distance of 61.58 feet to the True Point of Beginning of the tract herein described: thence S 38° 33' 43" E, a distance of 22.80 feet; thence S 51° 57' 38" W, a distance of 13.12 feet; thence S 38° 01' 02" E, a distance of 36.76 feet; thence S 51° 35' 49" W, a distance of 73.49 feet; thence N 38° 24' 11" W, a distance of 19.66 feet; thence N 35° 37' 30" W, a distance of 114.25 feet; thence N 48° 56' 26" E, a distance of 17.18 feet; thence N 34° 58' 39" W, a distance of 137.96 feet; thence N 29° 10' 08" W, a distance of 74.30 feet; thence N 54° 09' 53" E, a distance of 49.01 feet; thence S 32° 48' 24" E, a distance of 58.06 feet; thence S 38 33" 43" E, a distance of 226.18 feet to the True Point of Beginning, excepting that portion reserved for the permanent shaft easement, as shown on Exhibit A.

Said easement area contains 21,243 square feet, more or less, and is generally depicted on Exhibit A attached hereto.

1N1E28A 500

After Recording Return to:

106/800/Linda Birth

Tax Statement shall be sent to:

No Change

IT IS UNDERSTOOD and agreed that:

A. This easement is temporary and granted for original construction for a term of 4 years 9 months, or less if project work is completed sooner, commencing no earlier than April 1, 2008.

B. In the event of project delays, the term of this easement will automatically extend by the same amount of time as the period of delay, but in no event will it be extended beyond midnight December 31, 2012. If the easement term is extended, a daily rate of $41 will be paid for each day beyond the easement term the area is in use. Payment will be made upon completion of the work.

C. Grantee agrees to provide Grantor with at least seven (7) days notice prior to commencing work under this easement.

D. Grantor hereby grants to Grantee an access right of an existing roadway, as shown on attached Exhibit B, by this reference made a part hereof. It is anticipated that said access rights will include personal vehicles and an average of no more than 3 large construction-type trucks per day during construction, with periodic higher volumes depending on the specific activity. Access will be coordinated with property owner's operations to minimize disruption. Access will use the site's existing roadways on the property. In the event both parties need to use access at the same time, Grantee will yield to Grantor.

D. Grantee agrees that it will make every reasonable effort to minimize construction impacts and will maintain access to Grantor's property to the extent practicable.

E. Grantee will restore the easement area to a condition that is as good as or better than the condition existing prior to the construction.

F. Grantor reserves all other rights not conveyed herein, but will not exercise said rights in any manner that would be inconsistent or interfere with or materially affect rights herein granted.

G. This easement shall bind the heirs and assigns of Grantor and shall inure to the benefit of the successors in title of Grantee.

H. Grantor represents and warrants that it has the authority to grant this easement, that, subject to all matters of record, the subject property is free from all liens and encumbrances that would materially affect the easement grant, and that it will defend the same to Grantee against the lawful claims and demands of all persons whomsoever, except as noted above.

I. This easement is granted pursuant to the exercise of the eminent domain power and authority of Grantee, with the consideration paid by Grantee accepted as just compensation for the property or property rights conveyed, which includes damage to the property remainder, if any, resulting from the acquisition or use of said property or property rights.

J. To Grantor's knowledge based upon statements made by third parties and without any independent investigation by Grantor, there are no underground storage tanks, as defined under Oregon law, presently on or under the subject property.

K. Grantee, by accepting this easement, is not accepting liability for any preexisting release of hazardous substances onto or from the subject property, and Grantor is not attempting to convey any such liability.

L. Grantee shall comply with all applicable regulatory requirements and permits.

IN WITNESS WHEREOF, Ash Grove Cement Company, a Delaware corporation, pursuant to a resolution of its Board of Directors, duly and legally adopted, has caused these presents to be signed by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) on this 28th day of March, 2008.

Ash Grove Cement Company
A Delaware corporation

By: John H. Ross III

By: Eileen Flink

STATE OF Kansas

County of Johnson

This instrument was acknowledged before me on March 28, 2008, by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) of Ash Grove Cement Company, a Delaware corporation.

NOTARY PUBLIC - State of Kansas
MELISSA S. RUSCH
My Appt. Exp. 10-17-12

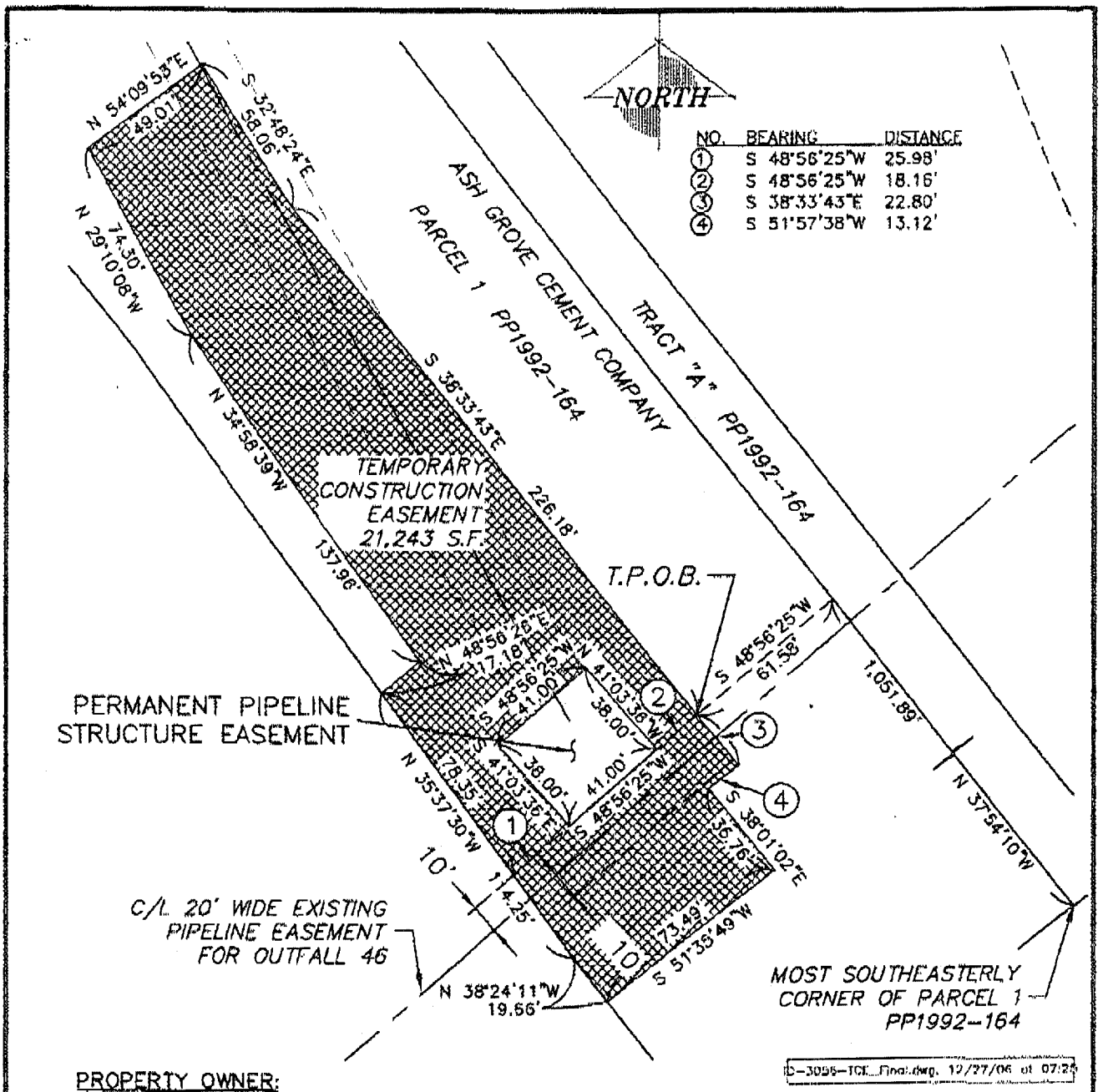
Melissa S. Rusch
Notary Public for State of Kansas
My Commission expires 10-17-12

APPROVED AS TO FORM:

City Attorney

APPROVED:

Bureau of Environmental Services Director
or designee



PROPERTY OWNER:
ASH GROVE CEMENT COMPANY
STATE ID: 1N1E28A 500
RNO: R237733
PROJECT ID: 3056

1 INCH

BAR EQUALS ONE INCH WHEN DRAWING IS PLOTTED FULL SIZE. IF NOT, SCALE ACCORDINGLY

EXHIBIT "A"

50 0 25 50 100

SCALE: 1"=50'

PROJECT COORDINATES

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
EAST SIDE CSO TUNNEL PROJECT
PB PARSONS BRINCKERHOFF
400 S.W. Sixth Ave, Portland, OR 97204

EAST SIDE CSO TUNNEL PROJECT
TEMPORARY CONSTRUCTION EASEMENT
PROJECT ID NO. 3056
STATE ID NO. 1N1E28A 00500
OWNER: ASH GROVE CEMENT COMPANY

JOB NO. 5516
SHEET NO. 1 of 1

TEMPORARY CONSTRUCTION EASEMENT
FOR SUB-SURFACE TIE BACKS

KNOW ALL PERSONS BY THESE PRESENTS, that **Ash Grove Cement Company, a Delaware corporation** (Grantor) in consideration of the sum of One Thousand One Hundred Twenty ($1,120) and no/100 Dollars, and other good and valuable consideration, to it paid by the City of Portland, a municipal corporation of the State of Oregon (Grantee), does hereby grant unto said City of Portland a temporary easement for the purpose of sub-surface tie backs for retaining wall footings during construction, associated with the East Side Combined Sewer Overflow Project, through, under, over, upon and across the following described parcel:

R/W #6246-3056

A parcel of land situated in the northeast quarter of Section 28, T1N, R1E, W.M., in the City of Portland, State of Oregon, as shown on the attached Exhibit A and by this reference made a part hereof.

IT IS UNDERSTOOD and agreed that:

A. This easement is temporary and granted for original construction for a term of 4 years 9 months, commencing no earlier than April 1, 2007 and terminating no later than December 31, 2011. Use of the easement area shall not exceed a total of 548 days (1 year, 6 months) during the time it is in effect and Grantor shall be provided reasonable opportunity to make non-conflicting use of the easement area when the area is not being used by Grantee.

B. Grantee agrees to provide Grantor with at least seven (7) days notice prior to commencing work under this easement.

C. The tie backs will not limit Grantor's use of the easement area during the term of the easement and will remain below ground; Grantor will not be limited in the use of the easement

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1N1E28A 500

After Recording Return to:

106/800/Linda Birth

Tax Statement shall be sent to:

No Change

area after the expiration of the easement and may remove the tie backs if necessary for future excavation.

D. Grantor reserves all other rights not conveyed herein, but will not exercise said rights in any manner that would be inconsistent or interfere with or materially affect rights herein granted.

E. This easement shall bind the heirs and assigns of Grantor and shall inure to the benefit of the successors in title of Grantee.

F. Grantor represents and warrants that it has the authority to grant this easement, that, subject to all matters of record, the subject property is free from all liens and encumbrances that would materially affect the easement grant, and that it will defend the same to Grantee against the lawful claims and demands of all persons whomsoever, except as noted above.

G. This easement is granted pursuant to the exercise of the eminent domain power and authority of Grantee, with the consideration paid by Grantee accepted as just compensation for the property or property rights conveyed, which includes damage to the property remainder, if any, resulting from the acquisition or use of said property or property rights.

IN WITNESS WHEREOF, Ash Grove Cement Company, a Delaware corporation, pursuant to a resolution of its Board of Directors, duly and legally adopted, has caused these presents to be signed by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) on this 28th day of March, 2008.

Ash Grove Cement Company
A Delaware corporation

By: John H. Ross III

By: Eileen Flink

STATE OF Kansas

County of Johnson

This instrument was acknowledged before me on March 28, 2008, by John H. Ross III (name) as Senior Vice President (title) and Eileen Flink (name) as Assistant Secretary (title) of Ash Grove Cement Company, a Delaware corporation.

NOTARY PUBLIC - State of Kansas
MELISSA S. RUSCH
My Appt. Exp. 10-17-12

Melissa S Rusch

Notary Public for Johnson County KS

My Commission expires 10-17-12

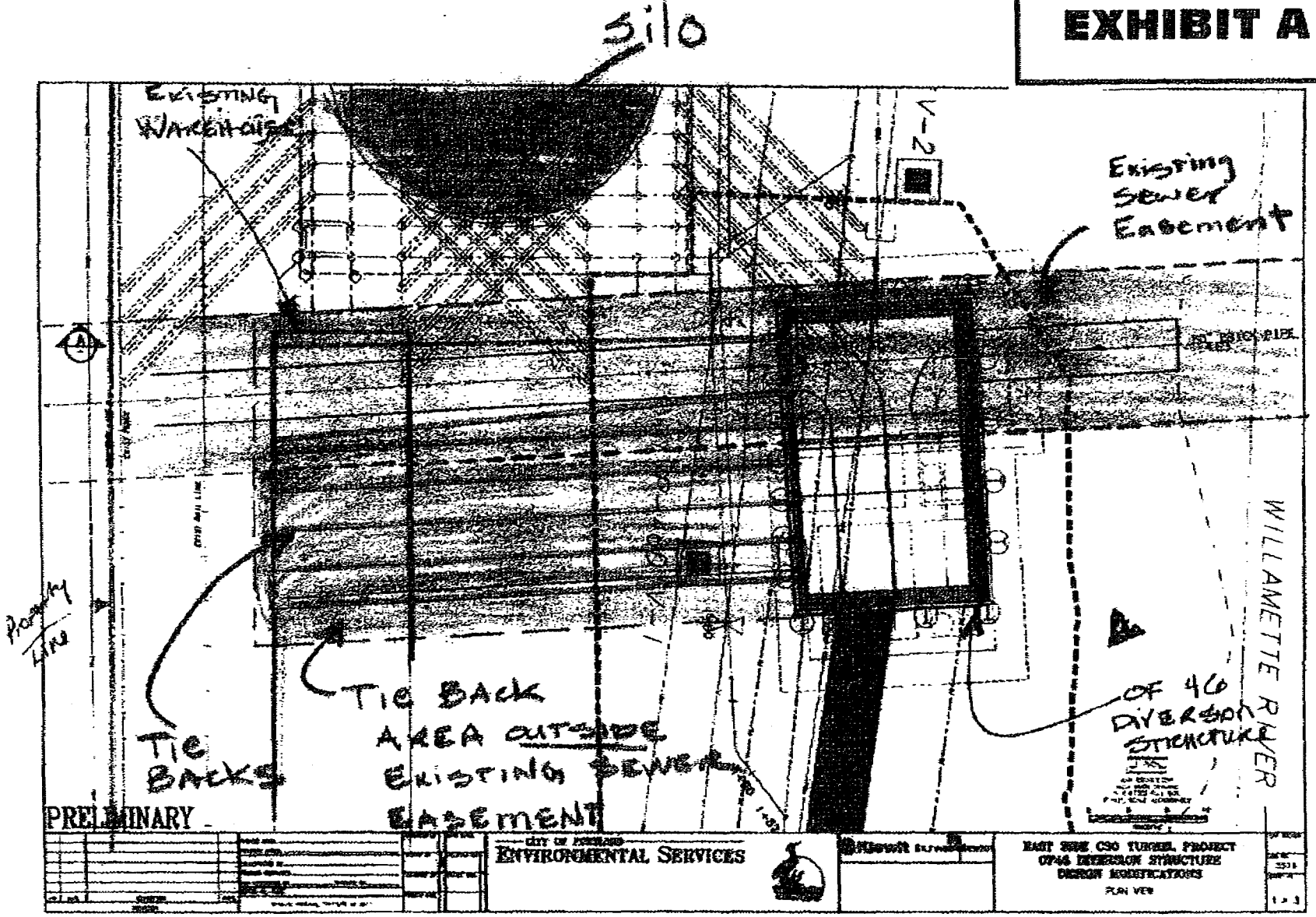
APPROVED AS TO FORM:

City Attorney

APPROVED:

Bureau of Environmental Services Director
or his designee

EXHIBIT A



ASH GROVE CEMENT

Tie Backs for temporary shaft support during construction.