HAHN AND ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS
Assessment Investigation Remediation

February 16, 2016

Mr. Townsend Angell
Odyssey Property Holdings, Inc.
3203 SE Woodstock Boulevard
Portland, Oregon 97202

HAI Project No. 7586

SUBJECT: Monitoring Well Decommissioning, Former Service Station Property, 5216 SE 28th Avenue, Portland, Oregon

Dear Mr. Angell:

1.0 Introduction

Hahn and Associates, Inc. (HAI) has prepared this report summarizing well abandonment activities that were completed at the above-reference site in November 2015. Specifically, this report documents activities associated with the abandonment of seven monitoring wells: MW-1s, MW-2s, MW-2i, MW-3s, MW-4s, MW-4i, and MW-5i. The locations of the abandoned wells are shown on the attached Figure 1.

Because No Further Action (NFA) was designated for the property by the Oregon Department of Environmental Quality (DEQ) in October 2015, the monitoring wells were no longer needed for groundwater monitoring at the site.

2.0 Monitoring Well Abandonments

On November 23 and 24, 2015, the seven monitoring wells at the site were decommissioned by over-drilling, such that all well materials were removed from below the ground surface. Because concentrations of volatile organic compounds (VOCs) were present in groundwater above established screening levels, the Oregon Water Resources Department (OWRD) would not allow abandonment of the wells in-place. Monitoring well decommissioning logs are included in Attachment A.

All abandonment procedures were in accordance with the requirements of Oregon Administrative Rules (OAR) 690-240, Construction, Maintenance, and Abandonment of Monitoring Wells, Geotechnical holes, and Other Holes in Oregon. Stratus Corporation of Gaston, Oregon was the licensed drilling contractor for the well abandonments.

Because all monitoring wells, except well MW-1s, were located in City of Portland right-of-way (ROW), ROW permitting with the City was required for decommissioning of six of the monitoring wells. In addition, traffic control with signage and flaggers was required for the decommissioning of a number of the wells.

Specifically, monitoring wells were permanently decommissioned by removing the monuments and then overdrilling the well from top to bottom with a solid stem auger rig. All casing, screen, annular seal and filter pack material were removed during the overdrilling process. Upon completion of overdrilling activities, the boreholes were abandoned by backfilling with bentonite chips. The pavement at MW-1s and MW-5i was repaired with EZ Street asphalt patch, while the ground surface at the other locations was restored with soil similar to the surrounding conditions.

3.0 Investigative-Derived Waste (IDW) Management

Soil cuttings collected during the decommissioning of the wells were placed in a 55-gallon drum. Decontamination water was similarly placed into a 55-gallon drum. The contents of each drum were sampled on November 24, 2015, and the drums were labeled and left on-site for later disposal.

The soil and water samples were shipped with chain-of-custody documentation in a sealed and chilled container to Apex Laboratories, of Portland, Oregon, for analysis. The samples were analyzed for VOCs by EPA Method 8260B. The laboratory reports and chain-of-custody documentation are included in Attachment B.

Because VOCs were not detected in the decontamination water sample, this water was disposed by percolating into on-site soils on December 11, 2015.

VOCs were also not detected in the soil sample. However, because of the soil and well materials contained in this drum, it was decided to dispose of this drum and materials as a solid waste. On February 2, 2016, the 55-gallon drum of soil cuttings was picked up by Waste Watch, Inc. of Portland, Oregon for ultimate disposal as a non-hazardous solid waste at the US Ecology facility in Grand View, Idaho. The manifest for transportation of this drum to the disposal facility is included in Appendix C.

If there are any comments or questions regarding this report, please contact the undersigned. Thank you for allowing HAI to be of service.

Sincerely,

Roger E. Brown

Digitally signed
by Roger E. Brown
Date: 2016.02.16
09:37:06 -08'00'

Expires: 31 May 2016

Roger E. Brown, R.G.
Principal

rogerb@hahnenv.com

Attachments: 4

- Figure 1 – Well Location Map
- Attachment A: OWRD Decommissioning Logs (14 pages)
- Attachment B: Laboratory Analytical Reports (32 pages)
- Attachment C: Investigative-Derived Waste Manifest (1 page)

c: Mr. Kevin Dana, Department of Environmental Quality

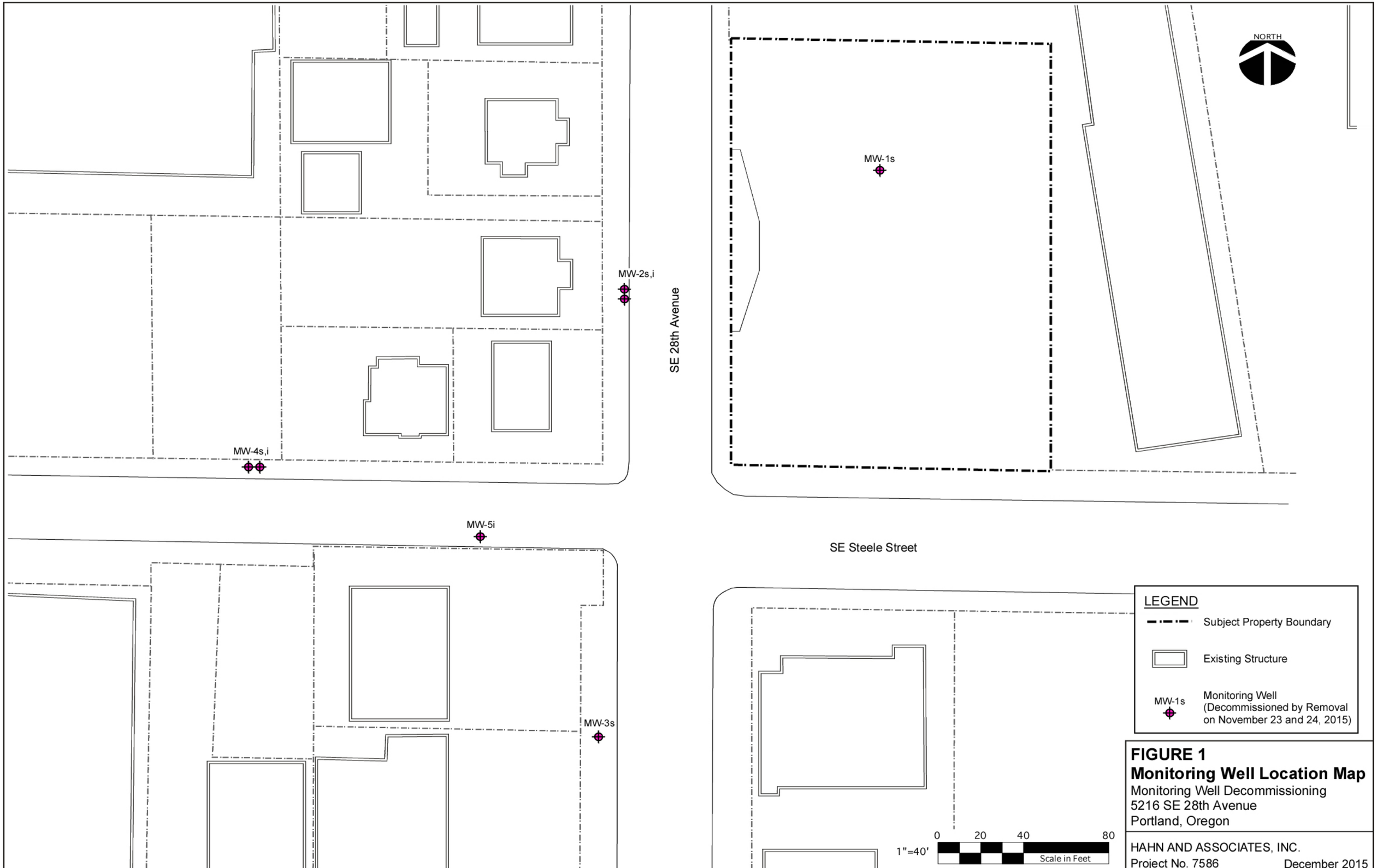


FIGURE 1
Monitoring Well Location Map
Monitoring Well Decommissioning
5216 SE 28th Avenue
Portland, Oregon

HAHN AND ASSOCIATES, INC.
Project No. 7586 December 2015

ATTACHMENT A

OWRD Decommissioning Logs

MULT 121483

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105537

START CARD # 1028899

(1) LAND OWNER

Owner Well I.D. MW-1S

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion
☐ Alteration (repair/recondition) ☒ Abandonment

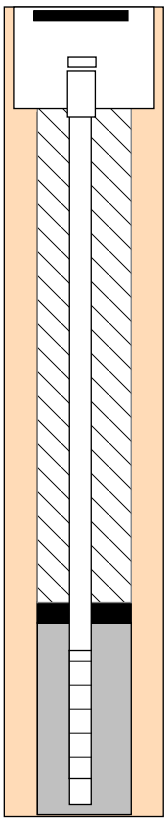
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud
☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 22.00 ft. Special Standard ☐



MONUMENT/VAULT
From _____ To _____

BORE HOLE
Diameter 3.5 From 0 To 22

CASING
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ◯Steel ◯Plastic ☐ ☐

LINER
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ◯Steel ◯Plastic ☐ ☐

SEAL
From _____ To _____
Material _____
Amount _____ Grout weight _____

SCREEN
Casing/Liner _____ Material _____
Diameter _____ From _____ To _____
Slot Size _____

FILTER
From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM
Sec 13 SW 1/4 of the SW 1/4 Tax Lot 500
Tax Map Number _____ Lot _____
Lat ° ' " or _____ DMS or DD
Long ° ' " or _____ DMS or DD
◯ Street address of well ◉ Nearest address
5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
asphalt patch	0	0.5
concrete	0.5	2
bentonite chips	2	22

Date Started 11/24/2015 Completed 11/24/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015
Password : (if filing electronically) _____
Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

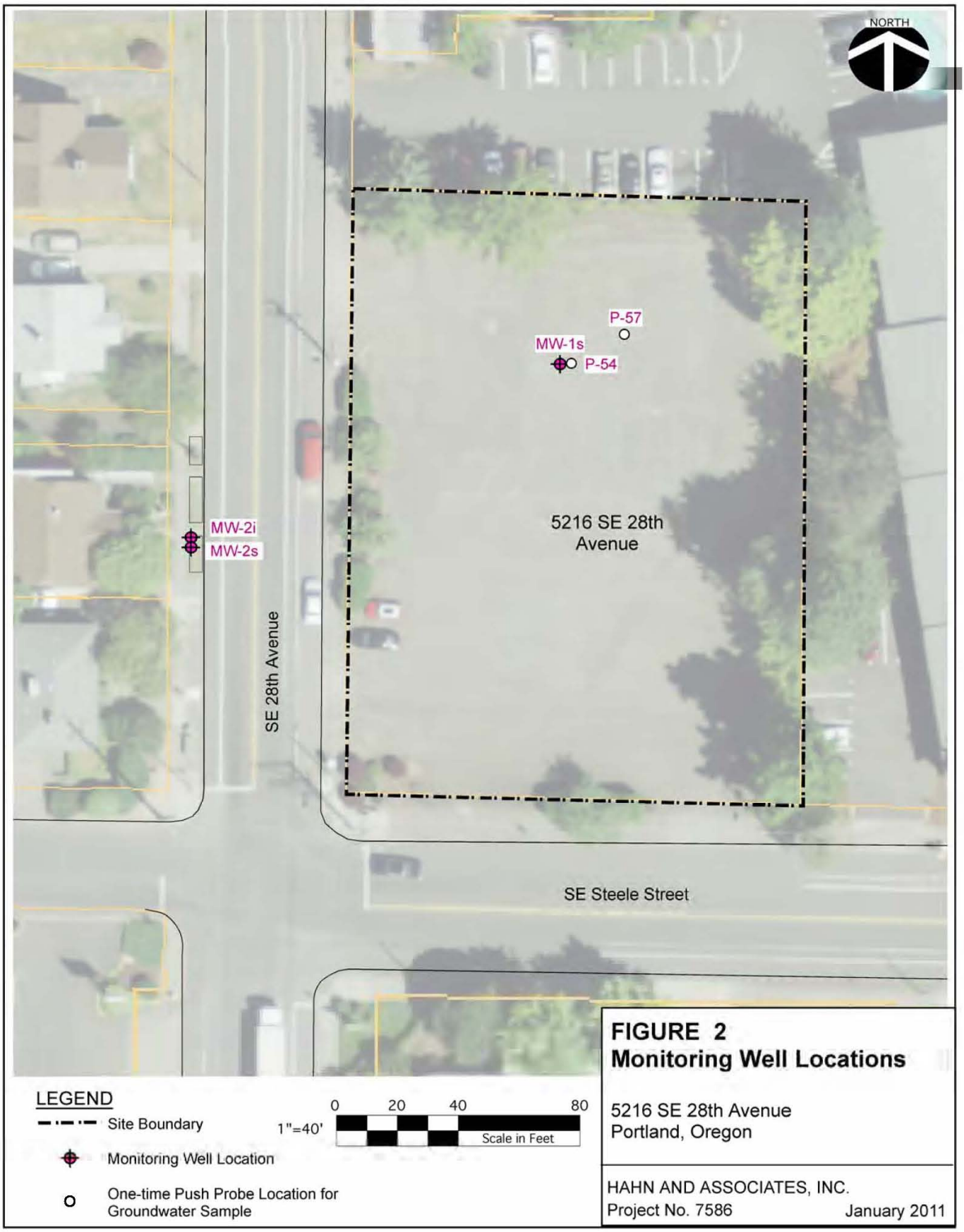
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1537 Date 12/14/2015
Password : (if filing electronically) _____
Signed SCOTT FLAHERTY (E-filed)
Contact Info (optional) Scott Flaherty, 503.985.7912

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

Map of well


NORTH
P-57
MW-1s
P-54
MW-2i
MW-2s
5216 SE 28th Avenue
SE 28th Avenue
SE Steele Street
LEGEND
Site Boundary
Monitoring Well Location
One-time Push Probe Location for Groundwater Sample
1"=40'
0
20
40
80
Scale in Feet
FIGURE 2
Monitoring Well Locations
5216 SE 28th Avenue
Portland, Oregon
HAHN AND ASSOCIATES, INC.
Project No. 7586
January 2011

MULT 121485

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105540

START CARD # 1028901

(1) LAND OWNER

Owner Well I.D. MW-2S

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☒ Abandonment

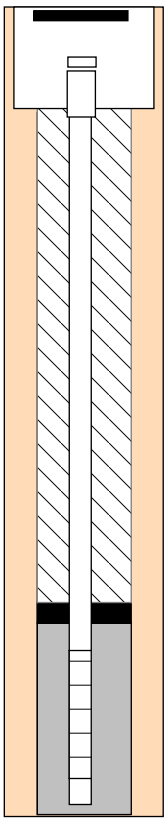
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 26.00 ft. Special Standard ☐



MONUMENT/VAULT

From _____ To _____

BORE HOLE

Diameter 3.5 From 0 To 26

CASING

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

SEAL

From _____ To _____

Material _____

Amount _____ Grout weight _____

SCREEN

Casing/Liner _____ Material _____

Diameter _____ From _____ To _____

Slot Size _____

FILTER

From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM

Sec 13 SW 1/4 of the SW 1/4 Tax Lot ROW

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

◯ Street address of well ◉ Nearest address

5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES

Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
soil	0	0.5
concrete	0.5	2
bentonite chips	2	26

Date Started 11/23/2015 Completed 11/23/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015

Password : (if filing electronically) _____

Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1537 Date 12/14/2015

Password : (if filing electronically) _____

Signed SCOTT FLAHERTY (E-filed)

Contact Info (optional) Scott Flaherty, 503.985.7912

ORIGINAL - WATER RESOURCES DEPARTMENT

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Form Version:

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 121485

12/14/2015

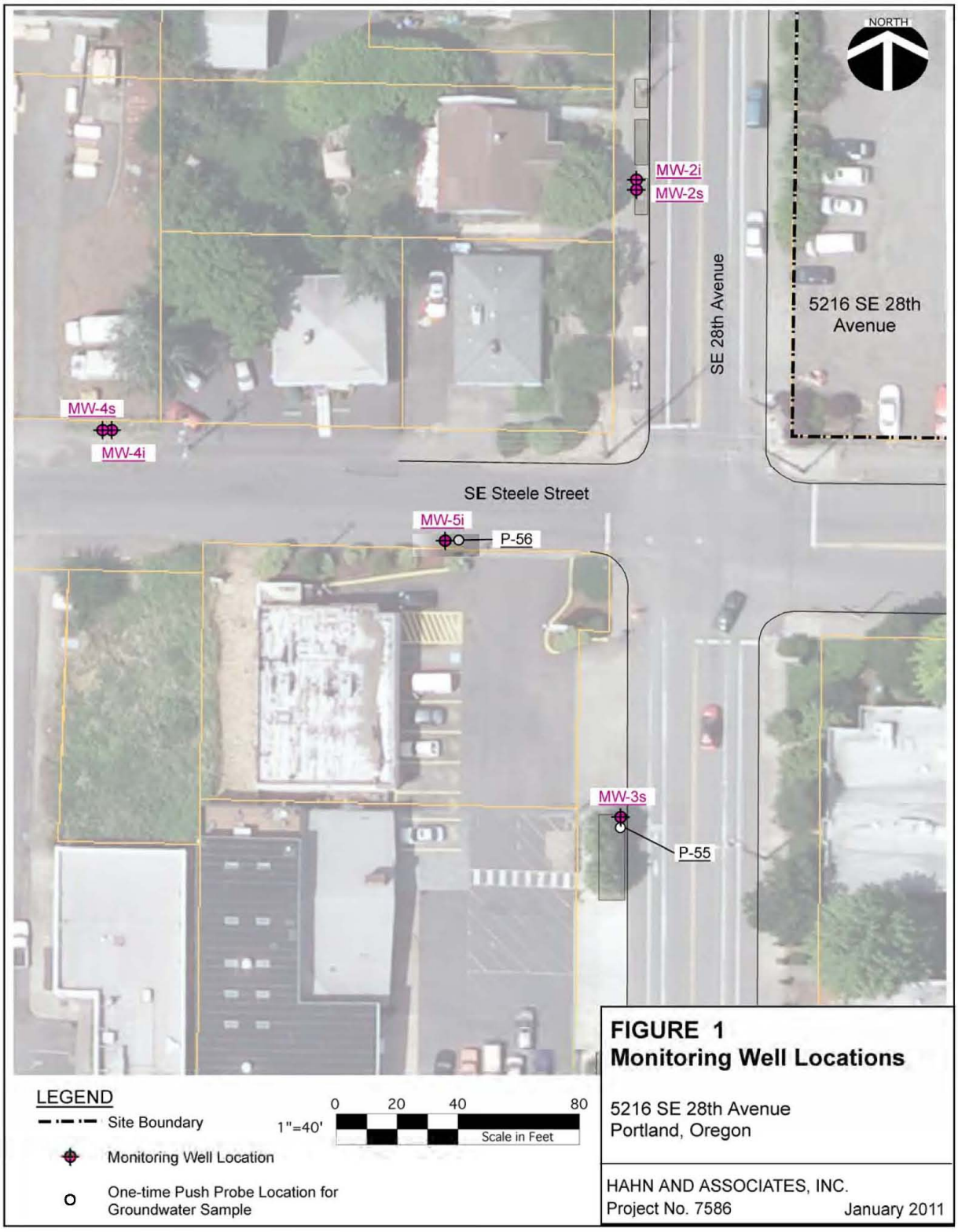
Map of Hole

MONITORING WELL REPORT -
Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 105247
03-08-2011

WELL I.D. # L 105535
START CARD # 1012273

Map of well



MULT 121484

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105540

START CARD # 1028900

(1) LAND OWNER

Owner Well I.D. MW-2I

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☒ Abandonment

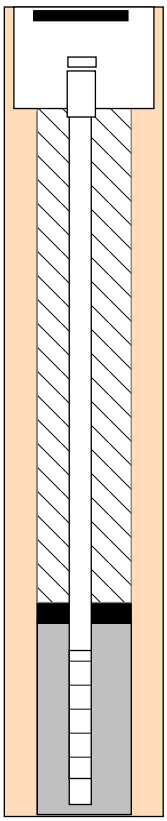
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 36.00 ft. Special Standard ☐



MONUMENT/VAULT B

From _____ To _____

BORE HOLE

Diameter 3.5 From 0 To 36

CASING

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

SEAL

From _____ To _____

Material _____

Amount _____ Grout weight _____

SCREEN

Casing/Liner _____ Material _____

Diameter _____ From _____ To _____

Slot Size _____

FILTER

From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM

Sec 13 SW 1/4 of the SW 1/4 Tax Lot ROW

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

◯ Street address of well ◉ Nearest address

5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
soil	0	0.5
concrete	0.5	2
bentonite chips	2	36

Date Started 11/23/2015 Completed 11/23/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015

Password : (if filing electronically) _____

Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1537 Date 12/14/2015

Password : (if filing electronically) _____

Signed SCOTT FLAHERTY (E-filed)

Contact Info (optional) Scott Flaherty, 503.985.7912

ORIGINAL - WATER RESOURCES DEPARTMENT

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Form Version:

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 121484

12/14/2015

Map of Hole

MONITORING WELL REPORT -
Map with location identified must be attached and shall include an approximate scale and north arrow

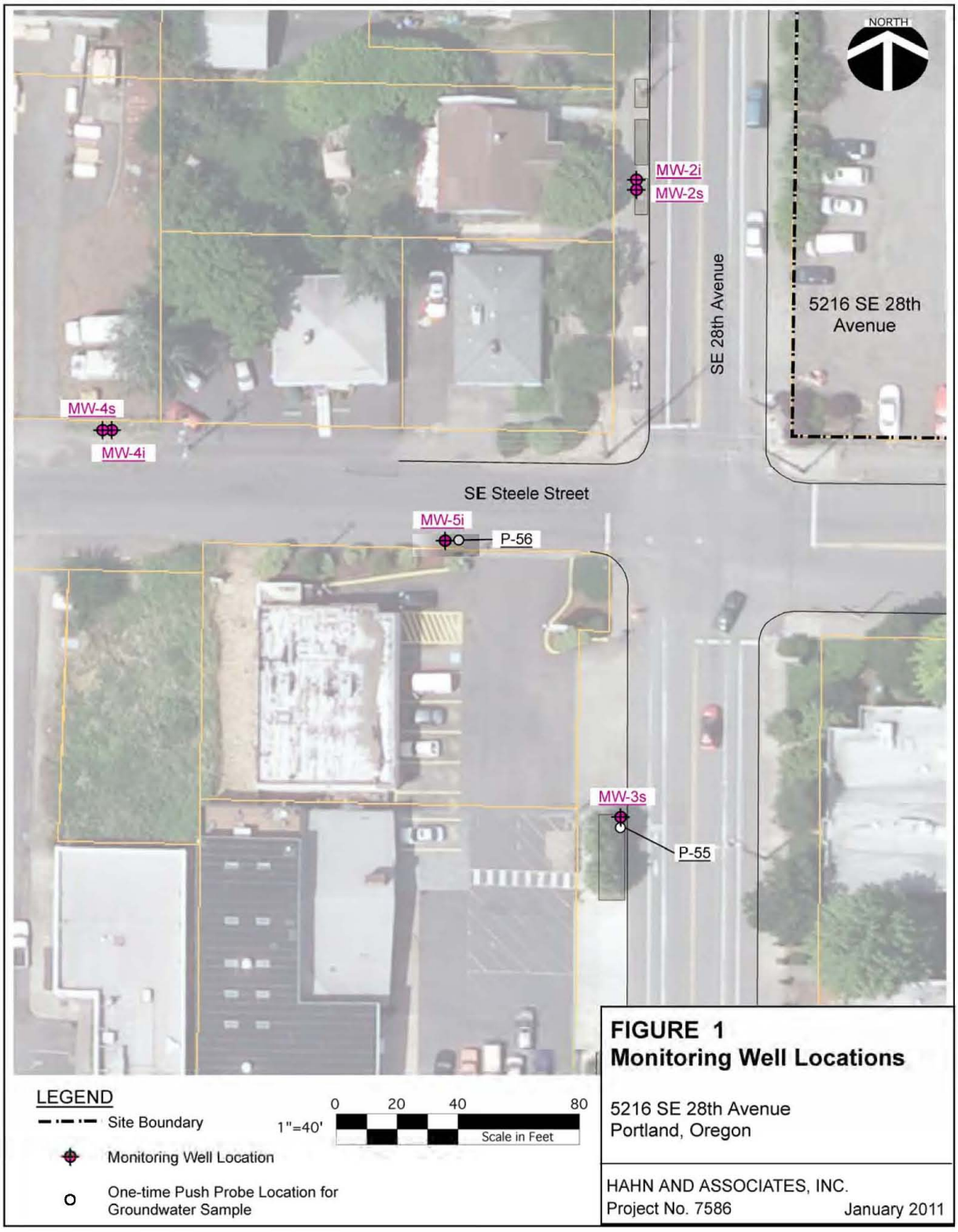
MULT 105247

03-08-2011

WELL I.D. # L 105535

START CARD # 1012273

Map of well



MULT 121487

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105539

START CARD # 1028903

(1) LAND OWNER

Owner Well I.D. MW-3S

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☒ Abandonment

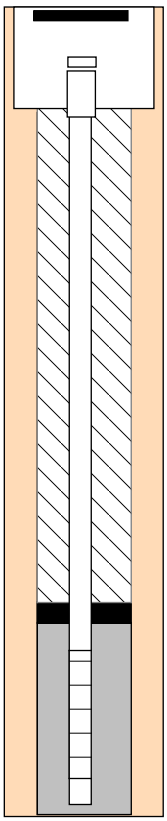
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 26.00 ft. Special Standard ☐



MONUMENT/VAULT B

From _____ To _____

BORE HOLE

Diameter 3.5 From 0 To 26

CASING

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

SEAL

From _____ To _____

Material _____

Amount _____ Grout weight _____

SCREEN

Casing/Liner _____ Material _____

Diameter _____ From _____ To _____

Slot Size _____

FILTER

From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM

Sec 13 SW 1/4 of the SW 1/4 Tax Lot ROW

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

◯ Street address of well ◉ Nearest address

5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
soil	0	0.5
concrete	0.5	2
bentonite chips	2	26

Date Started 11/23/2015 Completed 11/23/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015

Password : (if filing electronically) _____

Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1537 Date 12/14/2015

Password : (if filing electronically) _____

Signed SCOTT FLAHERTY (E-filed)

Contact Info (optional) Scott Flaherty, 503.985.7912

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Form Version:

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 121487

12/14/2015

Map of Hole

MONITORING WELL REPORT -
Map with location identified must be attached and shall include an approximate scale and north arrow

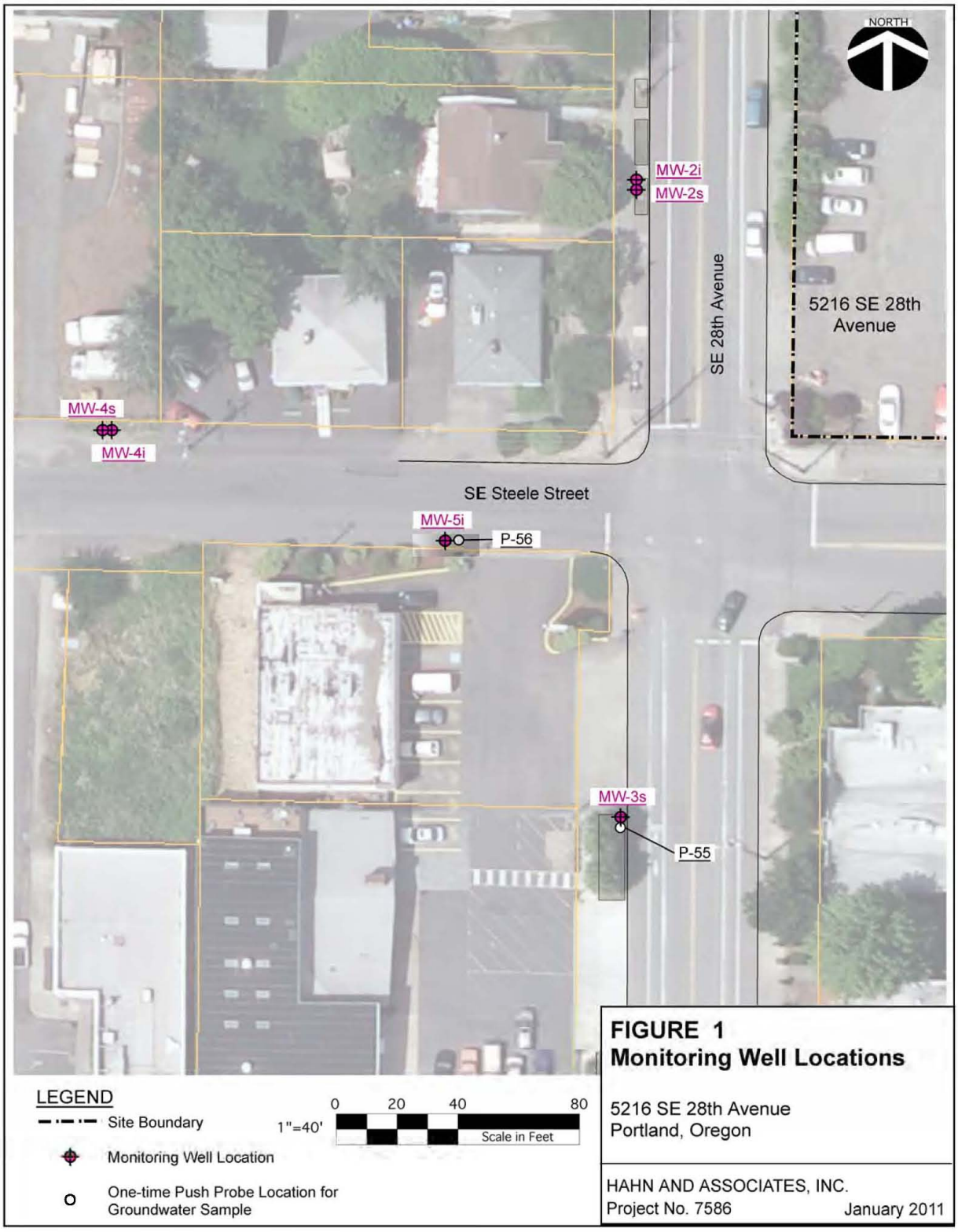
MULT 105247

03-08-2011

WELL I.D. # L 105535

START CARD # 1012273

Map of well



MULT 121482

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105536

START CARD # 1028898

(1) LAND OWNER

Owner Well I.D. MW-4S

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☒ Abandonment

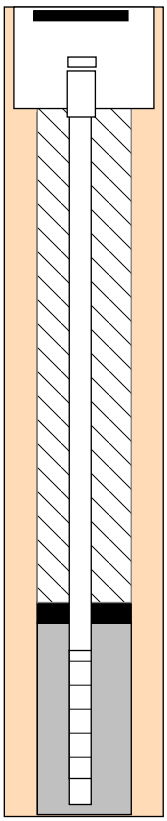
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 23.00 ft. Special Standard ☐



MONUMENT/VAULT B

From _____ To _____

BORE HOLE

Diameter 3.5 From 0 To 23

CASING

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

SEAL

From _____ To _____

Material _____

Amount _____ Grout weight _____

SCREEN

Casing/Liner _____ Material _____

Diameter _____ From _____ To _____

Slot Size _____

FILTER

From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM

Sec 13 SW 1/4 of the SW 1/4 Tax Lot ROW

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

◯ Street address of well ◉ Nearest address

5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
gravel	0	0.5
concrete	0.5	2
bentonite chips	2	23

Date Started 11/23/2015 Completed 11/23/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015

Password : (if filing electronically) _____

Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1537 Date 12/14/2015

Password : (if filing electronically) _____

Signed SCOTT FLAHERTY (E-filed)

Contact Info (optional) Scott Flaherty, 503.985.7912

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 121482

12/14/2015

Map of Hole

MONITORING WELL REPORT -
Map with location identified must be attached and shall include an approximate scale and north arrow

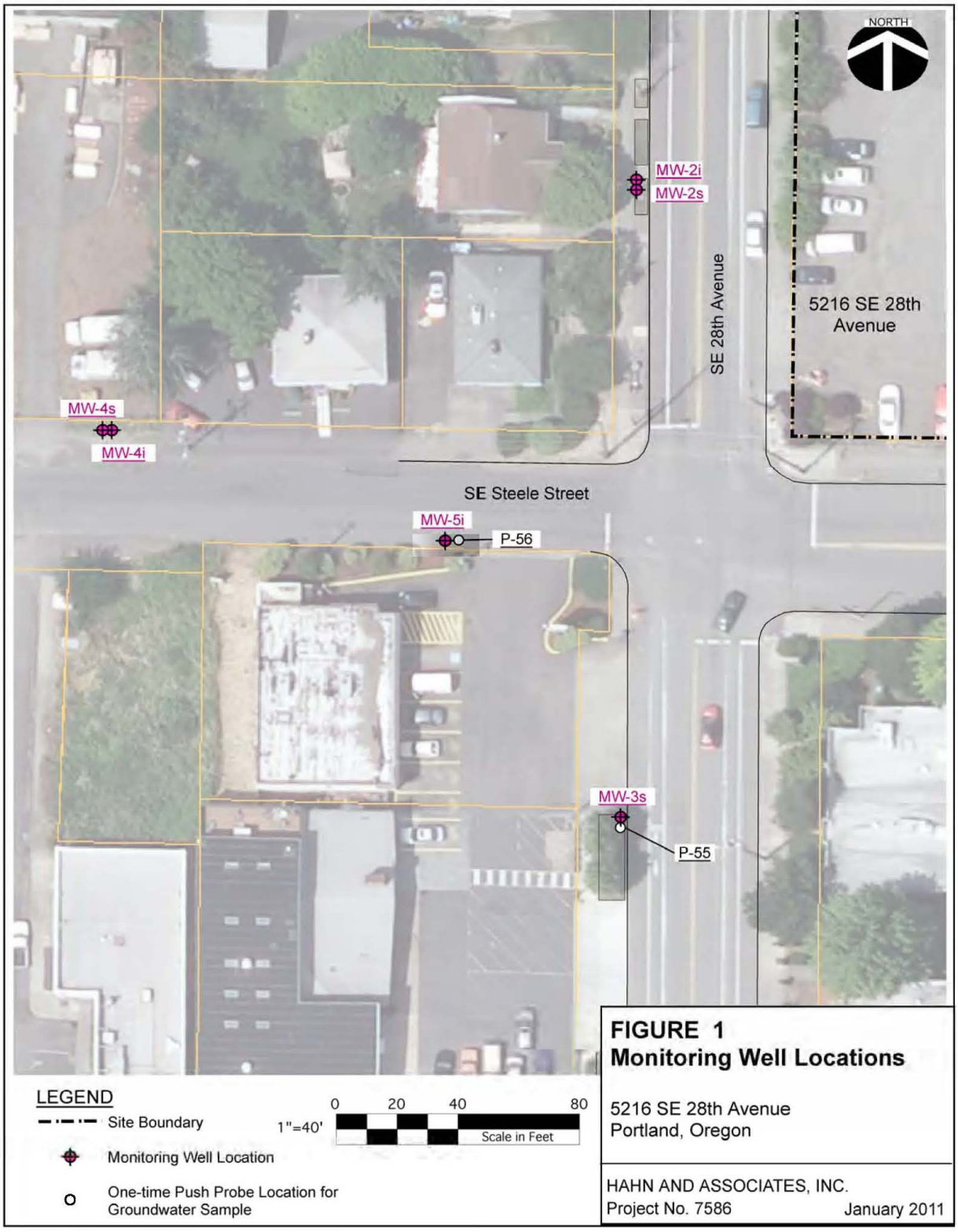
MULT 105247

03-08-2011

WELL I.D. # L 105535

START CARD # 1012273

Map of well



MULT 121481

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105535

START CARD # 1028897

(1) LAND OWNER

Owner Well I.D. MW-4I

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☒ Abandonment

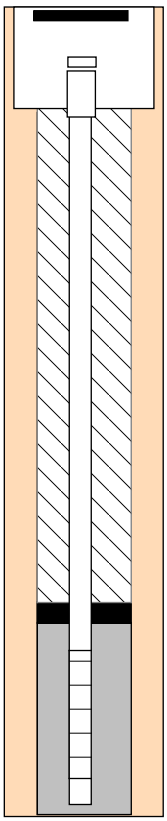
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 33.00 ft. Special Standard ☐



MONUMENT/VAULT

From _____ To _____

BORE HOLE

Diameter 3.5 From 0 To 33

CASING

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ◯Steel ◯Plastic ☐ ☐

SEAL

From _____ To _____

Material _____

Amount _____ Grout weight _____

SCREEN

Casing/Liner _____ Material _____

Diameter _____ From _____ To _____

Slot Size _____

FILTER

From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM

Sec 13 SW 1/4 of the SW 1/4 Tax Lot ROW

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

◯ Street address of well ◉ Nearest address

5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES

Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
gravel	0	0.5
concrete	0.5	2
bentonite chips	2	33

Date Started 11/23/2015 Completed 11/23/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015

Password : (if filing electronically) _____

Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 1537 Date 12/14/2015

Password : (if filing electronically) _____

Signed SCOTT FLAHERTY (E-filed)

Contact Info (optional) Scott Flaherty, 503.985.7912

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 121481

12/14/2015

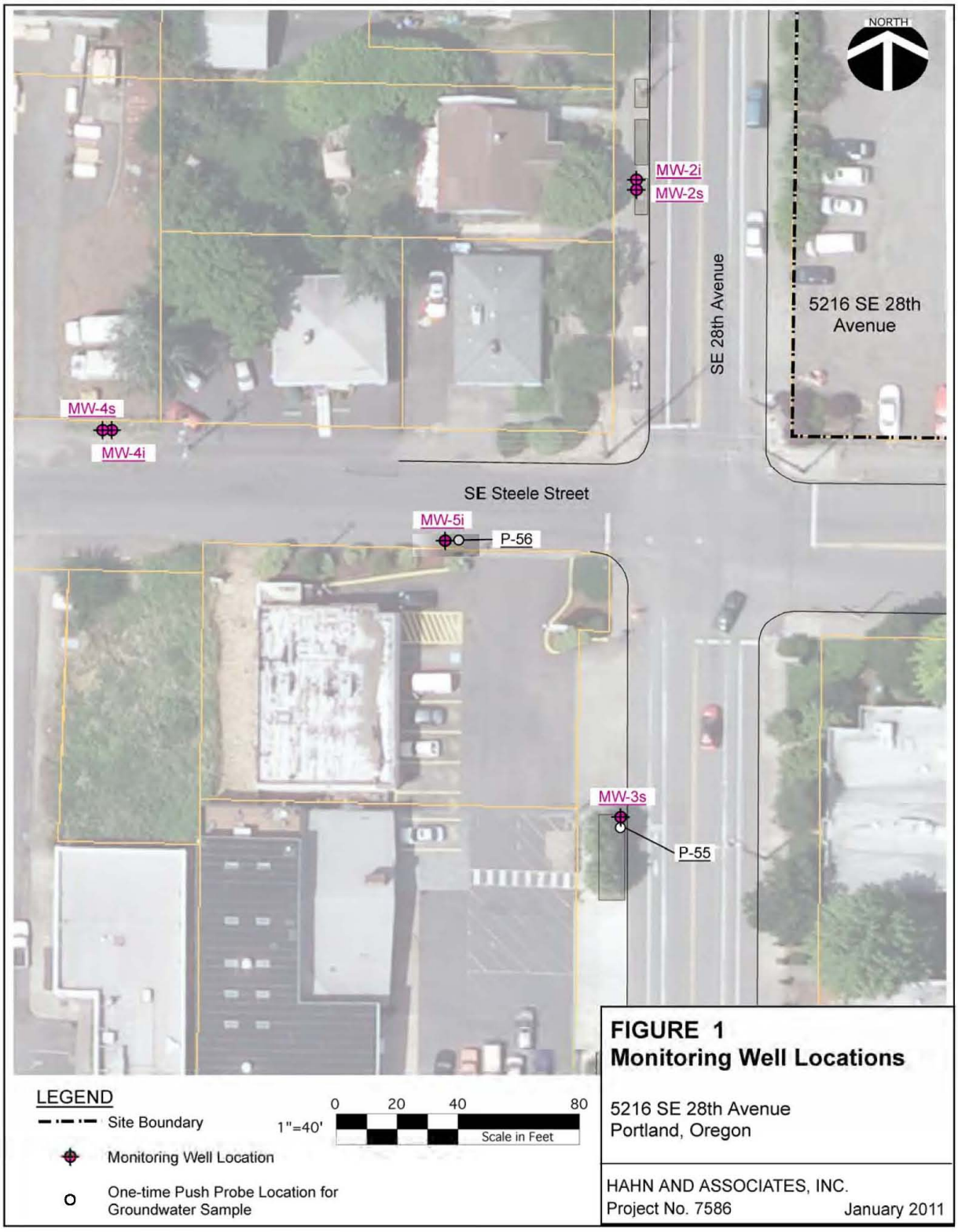
Map of Hole

MONITORING WELL REPORT -
Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 105247
03-08-2011

WELL I.D. # L 105535
START CARD # 1012273

Map of well



MULT 121486

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

12/14/2015

WELL I.D. LABEL# L 105538

START CARD # 1028902

(1) LAND OWNER

Owner Well I.D. MW-5I

First Name _____ Last Name _____

Company ODYSSEY PROPERTY HOLDINGS, LLC

Address 3203 SE WOODSTOCK BLVD

City PORTLAND State OR Zip 97202

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion
☐ Alteration (repair/recondition) ☒ Abandonment

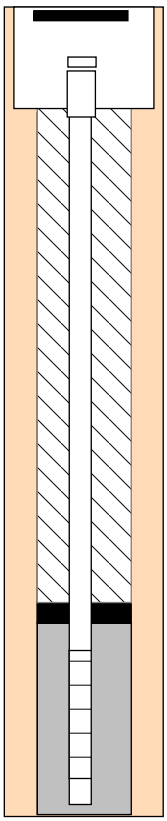
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud
☐ Reverse Rotary ☒ Other SSA

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 35.00 ft. Special Standard ☐



MONUMENT/VAULT B
From _____ To _____

BORE HOLE
Diameter 3.5 From 0 To 35

CASING
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ◯Steel ◯Plastic ☐ ☐

LINER
Dia. _____ From ☐ _____ To _____
Gauge _____ Wld Thrd
Material ◯Steel ◯Plastic ☐ ☐

SEAL
From _____ To _____
Material _____
Amount _____ Grout weight _____

SCREEN
Casing/Liner _____ Material _____
Diameter _____ From _____ To _____
Slot Size _____

FILTER
From _____ To _____ Material _____ Size of pack _____

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County MULTNOMAH Twp 1.00 S N/S Range 1.00 E E/W WM
Sec 13 SW 1/4 of the SW 1/4 Tax Lot ROW
Tax Map Number _____ Lot _____
Lat ° ' " or _____ DMS or DD
Long ° ' " or _____ DMS or DD
◯ Street address of well ◉ Nearest address

5216 SE 28TH AVE
PORTLAND, OR

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
					☐	
					☐	
					☐	
					☐	
					☐	

(8) WELL LOG

Ground Elevation _____

Material	From	To
asphalt patch	0	0.5
concrete	0.5	2
bentonite chips	2	35

Date Started 11/23/2015 Completed 11/23/2015

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10653 Date 12/14/2015
Password : (if filing electronically) _____
Signed FLETCHER GRYLLS (E-filed)

(bonded) Monitor Well Constructor Certification

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License Number 1537 Date 12/14/2015
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Signed SCOTT FLAHERTY (E-filed)
Contact Info (optional) Scott Flaherty, 503.985.7912

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MULT 121486

12/14/2015

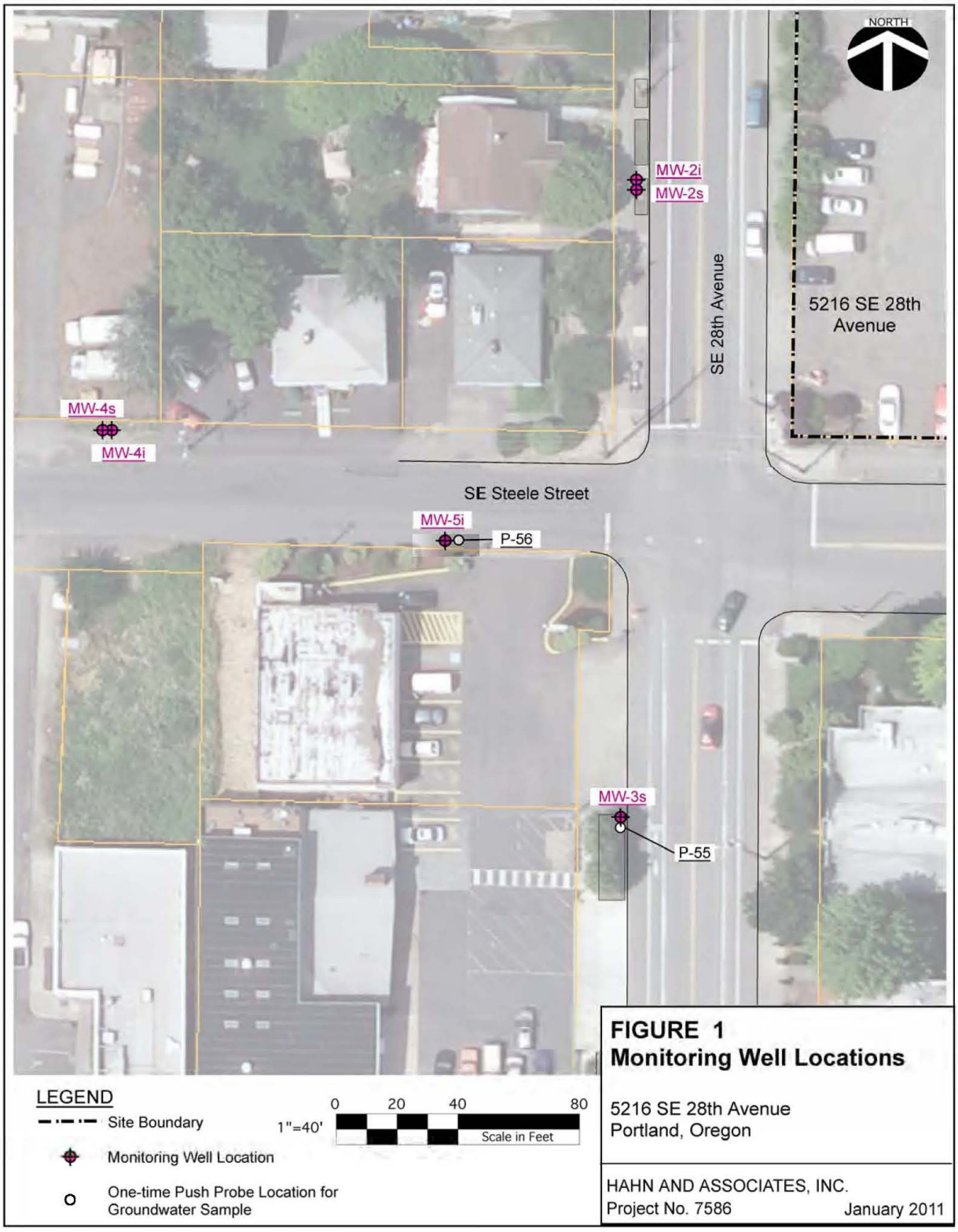
Map of Hole

MONITORING WELL REPORT -
Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 105247
03-08-2011

WELL I.D. # L 105535
START CARD # 1012273

Map of well



ATTACHMENT B

Laboratory Analytical Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, December 9, 2015

Roger Brown
Hahn and Associates
434 NW 6th Ave. Suite 203
Portland, OR 97209

RE: REDINV / 7586

Enclosed are the results of analyses for work order A5K0808, which was received by the laboratory on 11/24/2015 at 3:35:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
7586-151124-100	A5K0808-01	Soil	11/24/15 11:10	11/24/15 15:35

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7586-151124-100 (A5K0808-01)			**Matrix: Soil**		**Batch: 5110781**			**V-15**
Acetone	ND	---	1600	ug/kg dry	50	11/25/15 21:08	5035/8260B	
Benzene	ND	---	16.0	"	"	"	"	
Bromobenzene	ND	---	40.1	"	"	"	"	
Bromochloromethane	ND	---	80.1	"	"	"	"	
Bromodichloromethane	ND	---	160	"	"	"	"	
Bromoform	ND	---	160	"	"	"	"	
Bromomethane	ND	---	801	"	"	"	"	
2-Butanone (MEK)	ND	---	801	"	"	"	"	
n-Butylbenzene	ND	---	80.1	"	"	"	"	
sec-Butylbenzene	ND	---	80.1	"	"	"	"	
tert-Butylbenzene	ND	---	80.1	"	"	"	"	
Carbon tetrachloride	ND	---	80.1	"	"	"	"	
Chlorobenzene	ND	---	40.1	"	"	"	"	
Chloroethane	ND	---	801	"	"	"	"	
Chloroform	ND	---	80.1	"	"	"	"	
Chloromethane	ND	---	401	"	"	"	"	
2-Chlorotoluene	ND	---	80.1	"	"	"	"	
4-Chlorotoluene	ND	---	80.1	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	---	401	"	"	"	"	
Dibromochloromethane	ND	---	160	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	80.1	"	"	"	"	
Dibromomethane	ND	---	80.1	"	"	"	"	
1,2-Dichlorobenzene	ND	---	40.1	"	"	"	"	
1,3-Dichlorobenzene	ND	---	40.1	"	"	"	"	
1,4-Dichlorobenzene	ND	---	40.1	"	"	"	"	
Dichlorodifluoromethane	ND	---	160	"	"	"	"	
1,1-Dichloroethane	ND	---	40.1	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	40.1	"	"	"	"	
1,1-Dichloroethene	ND	---	40.1	"	"	"	"	
cis-1,2-Dichloroethene	ND	---	40.1	"	"	"	"	
trans-1,2-Dichloroethene	ND	---	40.1	"	"	"	"	
1,2-Dichloropropane	ND	---	40.1	"	"	"	"	
1,3-Dichloropropane	ND	---	80.1	"	"	"	"	
2,2-Dichloropropane	ND	---	80.1	"	"	"	"	
1,1-Dichloropropene	ND	---	80.1	"	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7586-151124-100 (A5K0808-01)			**Matrix: Soil**		**Batch: 5110781**			**V-15**
cis-1,3-Dichloropropene	ND	---	80.1	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	---	80.1	"	"	"	"	
Ethylbenzene	ND	---	40.1	"	"	"	"	
Hexachlorobutadiene	ND	---	160	"	"	"	"	
2-Hexanone	ND	---	801	"	"	"	"	Q-31
Isopropylbenzene	ND	---	80.1	"	"	"	"	
4-Isopropyltoluene	ND	---	80.1	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	---	801	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	80.1	"	"	"	"	
Methylene chloride	ND	---	401	"	"	"	"	
Naphthalene	ND	---	160	"	"	"	"	
n-Propylbenzene	ND	---	40.1	"	"	"	"	
Styrene	ND	---	80.1	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	---	40.1	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	---	40.1	"	"	"	"	
Tetrachloroethene (PCE)	ND	---	40.1	"	"	"	"	
Toluene	ND	---	80.1	"	"	"	"	
1,2,3-Trichlorobenzene	ND	---	401	"	"	"	"	
1,2,4-Trichlorobenzene	ND	---	401	"	"	"	"	
1,1,1-Trichloroethane	ND	---	40.1	"	"	"	"	
1,1,2-Trichloroethane	ND	---	40.1	"	"	"	"	
Trichloroethene (TCE)	ND	---	40.1	"	"	"	"	
Trichlorofluoromethane	ND	---	160	"	"	"	"	
1,2,3-Trichloropropane	ND	---	80.1	"	"	"	"	
1,2,4-Trimethylbenzene	ND	---	80.1	"	"	"	"	
1,3,5-Trimethylbenzene	ND	---	80.1	"	"	"	"	
Vinyl chloride	ND	---	40.1	"	"	"	"	
m,p-Xylene	ND	---	80.1	"	"	"	"	
o-Xylene	ND	---	40.1	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 102 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*106 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*104 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*102 %*	*Limits: 70-130 %*	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7586-151124-100 (A5K0808-01)			**Matrix: Soil**		**Batch: 5110845**			
% Solids	**70.1**	---	1.00	% by Weight	1	12/01/15 09:25	EPA 8000C	

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A							**Soil**					
Blank (5110781-BLK1)					Prepared: 11/25/15 09:00 Analyzed: 11/25/15 12:37							
5035/8260B												
Acetone	ND	---	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	---	6.67	"	"	---	---	---	---	---	---	
Bromobenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	---	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	---	66.7	"	"	---	---	---	---	---	---	
Bromoform	ND	---	66.7	"	"	---	---	---	---	---	---	
Bromomethane	ND	---	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	33.3	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	---	333	"	"	---	---	---	---	---	---	
Chloroform	ND	---	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	---	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	---	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	33.3	"	"	---	---	---	---	---	---	
Dibromomethane	ND	---	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	16.7	"	"	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A							**Soil**					
Blank (5110781-BLK1)					Prepared: 11/25/15 09:00 Analyzed: 11/25/15 12:37							
cis-1,2-Dichloroethene	ND	---	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	---	333	"	"	---	---	---	---	---	---	Q-31
Isopropylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	---	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	16.7	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	16.7	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	33.3	"	"	---	---	---	---	---	---	

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A									Soil			
Blank (5110781-BLK1)					Prepared: 11/25/15 09:00 Analyzed: 11/25/15 12:37							
1,2,4-Trimethylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	---	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	---	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	---	16.7	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 99 %*		*Limits: 70-130 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*104 %*		*70-130 %*			*"*				
Toluene-d8 (Surr)			*104 %*		*70-130 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*70-130 %*			*"*				
LCS (5110781-BS1)					Prepared: 11/25/15 09:00 Analyzed: 11/25/15 11:49							
5035/8260B												
Acetone	1390	---	1000	ug/kg wet	50	2000	---	70	65-135%	---	---	
Benzene	994	---	10.0	"	"	1000	---	99	"	---	---	
Bromobenzene	932	---	25.0	"	"	"	---	93	"	---	---	
Bromochloromethane	885	---	50.0	"	"	"	---	88	"	---	---	
Bromodichloromethane	891	---	100	"	"	"	---	89	"	---	---	
Bromoform	874	---	100	"	"	"	---	87	"	---	---	
Bromomethane	1080	---	500	"	"	"	---	108	"	---	---	
2-Butanone (MEK)	1460	---	500	"	"	2000	---	73	"	---	---	
n-Butylbenzene	1010	---	50.0	"	"	1000	---	101	"	---	---	
sec-Butylbenzene	1000	---	50.0	"	"	"	---	100	"	---	---	
tert-Butylbenzene	926	---	50.0	"	"	"	---	93	"	---	---	
Carbon tetrachloride	814	---	50.0	"	"	"	---	81	"	---	---	
Chlorobenzene	942	---	25.0	"	"	"	---	94	"	---	---	
Chloroethane	752	---	500	"	"	"	---	75	"	---	---	
Chloroform	868	---	50.0	"	"	"	---	87	"	---	---	
Chloromethane	1040	---	250	"	"	"	---	104	"	---	---	
2-Chlorotoluene	962	---	50.0	"	"	"	---	96	"	---	---	
4-Chlorotoluene	978	---	50.0	"	"	"	---	98	"	---	---	
1,2-Dibromo-3-chloropropane	728	---	250	"	"	"	---	73	"	---	---	

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A								**Soil**				
LCS (5110781-BS1)					Prepared: 11/25/15 09:00		Analyzed: 11/25/15 11:49					
Dibromochloromethane	918	---	100	ug/kg wet	"	"	---	92	"	---	---	
1,2-Dibromoethane (EDB)	884	---	50.0	"	"	"	---	88	"	---	---	
Dibromomethane	872	---	50.0	"	"	"	---	87	"	---	---	
1,2-Dichlorobenzene	958	---	25.0	"	"	"	---	96	"	---	---	
1,3-Dichlorobenzene	963	---	25.0	"	"	"	---	96	"	---	---	
1,4-Dichlorobenzene	951	---	25.0	"	"	"	---	95	"	---	---	
Dichlorodifluoromethane	914	---	100	"	"	"	---	91	"	---	---	
1,1-Dichloroethane	928	---	25.0	"	"	"	---	93	"	---	---	
1,2-Dichloroethane (EDC)	778	---	25.0	"	"	"	---	78	"	---	---	
1,1-Dichloroethene	889	---	25.0	"	"	"	---	89	"	---	---	
cis-1,2-Dichloroethene	893	---	25.0	"	"	"	---	89	"	---	---	
trans-1,2-Dichloroethene	914	---	25.0	"	"	"	---	91	"	---	---	
1,2-Dichloropropane	966	---	25.0	"	"	"	---	97	"	---	---	
1,3-Dichloropropane	890	---	50.0	"	"	"	---	89	"	---	---	
2,2-Dichloropropane	880	---	50.0	"	"	"	---	88	"	---	---	
1,1-Dichloropropene	916	---	50.0	"	"	"	---	92	"	---	---	
cis-1,3-Dichloropropene	974	---	50.0	"	"	"	---	97	"	---	---	
trans-1,3-Dichloropropene	1010	---	50.0	"	"	"	---	101	"	---	---	
Ethylbenzene	956	---	25.0	"	"	"	---	96	"	---	---	
Hexachlorobutadiene	902	---	100	"	"	"	---	90	"	---	---	
2-Hexanone	1290	---	500	"	"	2000	---	64	"	---	---	Q-31
Isopropylbenzene	955	---	50.0	"	"	1000	---	96	"	---	---	
4-Isopropyltoluene	993	---	50.0	"	"	"	---	99	"	---	---	
4-Methyl-2-pentanone (MiBK)	1470	---	500	"	"	2000	---	74	"	---	---	
Methyl tert-butyl ether (MTBE)	857	---	50.0	"	"	1000	---	86	"	---	---	
Methylene chloride	994	---	250	"	"	"	---	99	"	---	---	
Naphthalene	1050	---	100	"	"	"	---	105	"	---	---	
n-Propylbenzene	1000	---	25.0	"	"	"	---	100	"	---	---	
Styrene	961	---	50.0	"	"	"	---	96	"	---	---	
1,1,1,2-Tetrachloroethane	918	---	25.0	"	"	"	---	92	"	---	---	

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A								**Soil**				
LCS (5110781-BS1)					Prepared: 11/25/15 09:00		Analyzed: 11/25/15 11:49					
1,1,2,2-Tetrachloroethane	890	---	25.0	"	"	"	---	89	"	---	---	
Tetrachloroethene (PCE)	940	---	25.0	"	"	"	---	94	"	---	---	
Toluene	983	---	50.0	"	"	"	---	98	"	---	---	
1,2,3-Trichlorobenzene	917	---	250	"	"	"	---	92	"	---	---	
1,2,4-Trichlorobenzene	920	---	250	"	"	"	---	92	"	---	---	
1,1,1-Trichloroethane	820	---	25.0	"	"	"	---	82	"	---	---	
1,1,2-Trichloroethane	935	---	25.0	"	"	"	---	94	"	---	---	
Trichloroethene (TCE)	933	---	25.0	"	"	"	---	93	"	---	---	
Trichlorofluoromethane	762	---	100	"	"	"	---	76	"	---	---	
1,2,3-Trichloropropane	766	---	50.0	"	"	"	---	77	"	---	---	
1,2,4-Trimethylbenzene	1030	---	50.0	"	"	"	---	103	"	---	---	
1,3,5-Trimethylbenzene	998	---	50.0	"	"	"	---	100	"	---	---	
Vinyl chloride	1190	---	25.0	"	"	"	---	119	"	---	---	
m,p-Xylene	1980	---	50.0	"	"	2000	---	99	"	---	---	
o-Xylene	988	---	25.0	"	"	1000	---	99	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 96 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*101 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*101 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*100 %*		*70-130 %*		*"*					
Matrix Spike (5110781-MS1)					Prepared: 11/24/15 18:05		Analyzed: 11/25/15 21:32					**V-15**
QC Source Sample: 7586-151124-100 (A5K0808-01)												
5035/8260B												
Acetone	2390	---	1600	ug/kg dry	50	3200	ND	75	65-135%	---	---	
Benzene	1720	---	16.0	"	"	1600	ND	107	"	---	---	
Bromobenzene	1610	---	40.1	"	"	"	ND	101	"	---	---	
Bromochloromethane	1530	---	80.1	"	"	"	ND	96	"	---	---	
Bromodichloromethane	1530	---	160	"	"	"	ND	96	"	---	---	
Bromoform	1430	---	160	"	"	"	ND	90	"	---	---	
Bromomethane	1780	---	801	"	"	"	ND	111	"	---	---	
2-Butanone (MEK)	2390	---	801	"	"	3200	ND	75	"	---	---	
n-Butylbenzene	1730	---	80.1	"	"	1600	ND	108	"	---	---	

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A							**Soil**					
Matrix Spike (5110781-MS1)					Prepared: 11/24/15 18:05		Analyzed: 11/25/15 21:32					**V-15**
QC Source Sample: 7586-151124-100 (A5K0808-01)												
sec-Butylbenzene	1750	---	80.1	ug/kg dry	"	"	ND	109	"	---	---	
tert-Butylbenzene	1620	---	80.1	"	"	"	ND	101	"	---	---	
Carbon tetrachloride	1430	---	80.1	"	"	"	ND	89	"	---	---	
Chlorobenzene	1610	---	40.1	"	"	"	ND	100	"	---	---	
Chloroethane	1310	---	801	"	"	"	ND	82	"	---	---	
Chloroform	1490	---	80.1	"	"	"	ND	93	"	---	---	
Chloromethane	1860	---	401	"	"	"	ND	116	"	---	---	
2-Chlorotoluene	1680	---	80.1	"	"	"	ND	105	"	---	---	
4-Chlorotoluene	1700	---	80.1	"	"	"	ND	106	"	---	---	
1,2-Dibromo-3-chloropropane	1200	---	401	"	"	"	ND	75	"	---	---	
Dibromochloromethane	1510	---	160	"	"	"	ND	94	"	---	---	
1,2-Dibromoethane (EDB)	1470	---	80.1	"	"	"	ND	92	"	---	---	
Dibromomethane	1470	---	80.1	"	"	"	ND	92	"	---	---	
1,2-Dichlorobenzene	1650	---	40.1	"	"	"	ND	103	"	---	---	
1,3-Dichlorobenzene	1680	---	40.1	"	"	"	ND	105	"	---	---	
1,4-Dichlorobenzene	1630	---	40.1	"	"	"	ND	102	"	---	---	
Dichlorodifluoromethane	1650	---	160	"	"	"	ND	103	"	---	---	
1,1-Dichloroethane	1600	---	40.1	"	"	"	ND	100	"	---	---	
1,2-Dichloroethane (EDC)	1310	---	40.1	"	"	"	ND	82	"	---	---	
1,1-Dichloroethene	1570	---	40.1	"	"	"	ND	98	"	---	---	
cis-1,2-Dichloroethene	1540	---	40.1	"	"	"	ND	96	"	---	---	
trans-1,2-Dichloroethene	1610	---	40.1	"	"	"	ND	100	"	---	---	
1,2-Dichloropropane	1630	---	40.1	"	"	"	ND	102	"	---	---	
1,3-Dichloropropane	1470	---	80.1	"	"	"	ND	92	"	---	---	
2,2-Dichloropropane	1500	---	80.1	"	"	"	ND	93	"	---	---	
1,1-Dichloropropene	1620	---	80.1	"	"	"	ND	101	"	---	---	
cis-1,3-Dichloropropene	1610	---	80.1	"	"	"	ND	101	"	---	---	
trans-1,3-Dichloropropene	1670	---	80.1	"	"	"	ND	104	"	---	---	
Ethylbenzene	1640	---	40.1	"	"	"	ND	102	"	---	---	

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A							**Soil**					
Matrix Spike (5110781-MS1)					Prepared: 11/24/15 18:05		Analyzed: 11/25/15 21:32					**V-15**
QC Source Sample: 7586-151124-100 (A5K0808-01)												
Hexachlorobutadiene	1530	---	160	ug/kg dry	"	"	ND	96	"	---	---	
2-Hexanone	2080	---	801	"	"	3200	ND	65	"	---	---	Q-31
Isopropylbenzene	1640	---	80.1	"	"	1600	ND	103	"	---	---	
4-Isopropyltoluene	1730	---	80.1	"	"	"	ND	108	"	---	---	
4-Methyl-2-pentanone (MiBK)	2400	---	801	"	"	3200	ND	75	"	---	---	
Methyl tert-butyl ether (MTBE)	1450	---	80.1	"	"	1600	ND	90	"	---	---	
Methylene chloride	1700	---	401	"	"	"	ND	106	"	---	---	
Naphthalene	1740	---	160	"	"	"	ND	109	"	---	---	
n-Propylbenzene	1750	---	40.1	"	"	"	ND	109	"	---	---	
Styrene	1610	---	80.1	"	"	"	ND	101	"	---	---	
1,1,1,2-Tetrachloroethane	1550	---	40.1	"	"	"	ND	97	"	---	---	
1,1,2,2-Tetrachloroethane	1510	---	40.1	"	"	"	ND	95	"	---	---	
Tetrachloroethene (PCE)	1640	---	40.1	"	"	"	ND	102	"	---	---	
Toluene	1680	---	80.1	"	"	"	ND	105	"	---	---	
1,2,3-Trichlorobenzene	1560	---	401	"	"	"	ND	97	"	---	---	
1,2,4-Trichlorobenzene	1550	---	401	"	"	"	ND	97	"	---	---	
1,1,1-Trichloroethane	1440	---	40.1	"	"	"	ND	90	"	---	---	
1,1,2-Trichloroethane	1550	---	40.1	"	"	"	ND	97	"	---	---	
Trichloroethene (TCE)	1620	---	40.1	"	"	"	ND	101	"	---	---	
Trichlorofluoromethane	1430	---	160	"	"	"	ND	89	"	---	---	
1,2,3-Trichloropropane	1300	---	80.1	"	"	"	ND	81	"	---	---	
1,2,4-Trimethylbenzene	1770	---	80.1	"	"	"	ND	110	"	---	---	
1,3,5-Trimethylbenzene	1720	---	80.1	"	"	"	ND	108	"	---	---	
Vinyl chloride	2150	---	40.1	"	"	"	ND	134	"	---	---	
m,p-Xylene	3390	---	80.1	"	"	3200	ND	106	"	---	---	
o-Xylene	1680	---	40.1	"	"	1600	ND	105	"	---	---	

Surr: Dibromofluoromethane (Surr)	*Recovery: 97 %*	*Limits: 70-130 %*	*Dilution: 1x*
1,4-Difluorobenzene (Surr)	*102 %*	*70-130 %*	*"*
Toluene-d8 (Surr)	*101 %*	*70-130 %*	*"*

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Tigard, OR 97223
503-718-2323 Phone
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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5110781 - EPA 5035A							**Soil**					
Matrix Spike (5110781-MS1)					Prepared: 11/24/15 18:05 Analyzed: 11/25/15 21:32							**V-15**
QC Source Sample: 7586-151124-100 (A5K0808-01)												
Surr: 4-Bromofluorobenzene (Surr)					*Recovery: 101 %*	*Limits: 70-130 %*					*Dilution: 1x*	

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Philip Nerenberg, Lab Director

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 5110845 - Total Solids (Dry Weight) **Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

SAMPLE PREPARATION INFORMATION

Volatile Organic Compounds by EPA 8260B

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5110781							
A5K0808-01	Soil	5035/8260B	11/24/15 11:10	11/24/15 18:05	12.134g/10mL	10g/10mL	0.82

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5110845							
A5K0808-01	Soil	EPA 8000C	11/24/15 11:10	11/30/15 15:35	1N/A/1N/A	1N/A/1N/A	NA

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:28

Notes and Definitions

Qualifiers:

Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
V-15	Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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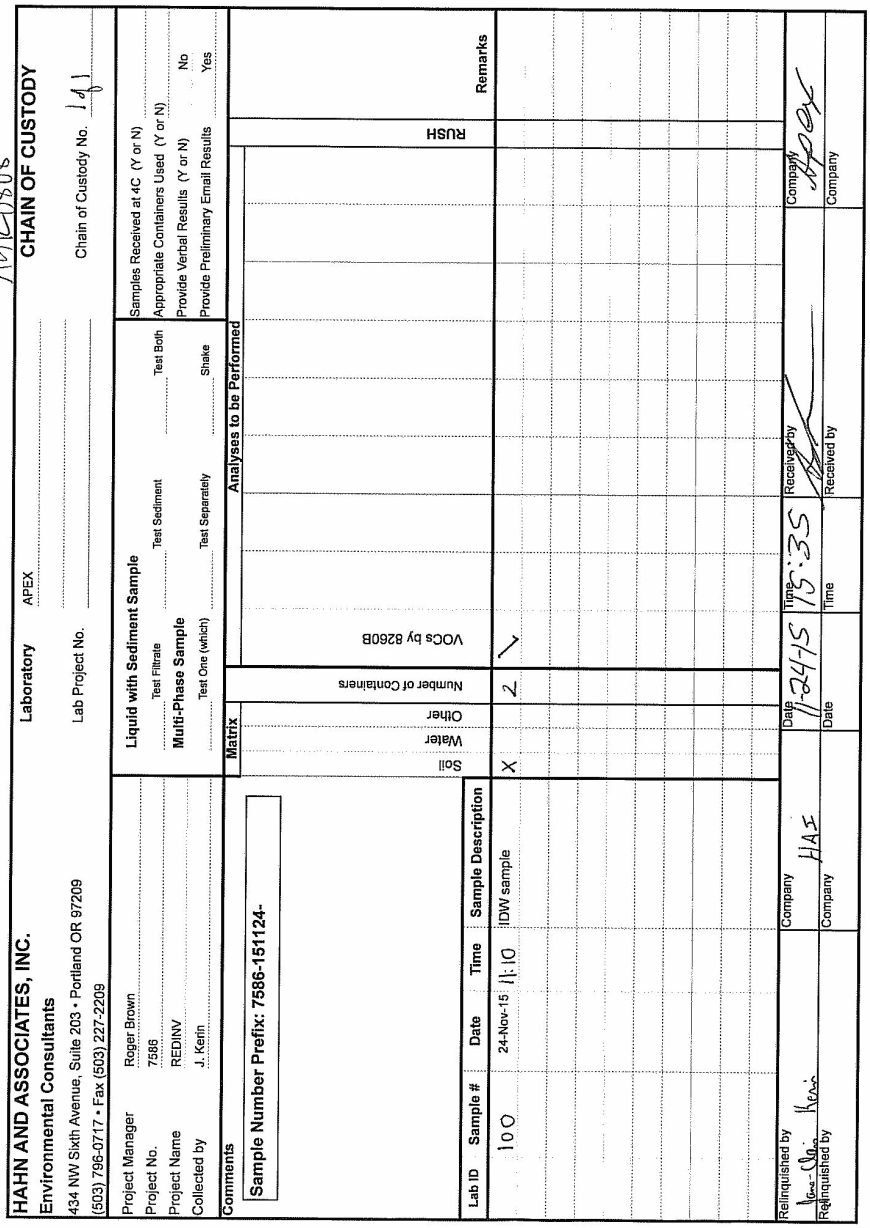

HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

Laboratory APEX
Lab Project No.

CHAIN OF CUSTODY
Chain of Custody No. 1 of 1

Project Manager Roger Brown
Project No. 7586
Project Name REDINV
Collected by J. Kerin

Liquid with Sediment Sample: Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample: Test One (which) / Test Separately / Shake

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) No
Provide Preliminary Email Results Yes

Comments
Sample Number Prefix: 7586-151124-

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil	Water	Other	Number of Containers	Analyses to be Performed: VOCs by 8260B	RUSH	Remarks
100		24-Nov-15	11:10	IDW sample	X			2	1		

Relinquished by — Company HAI — Date 11-24-15 — Time 15:35 — Received by — Company Apex
Relinquished by — Company — Date — Time — Received by — Company

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Philip Nerenberg

Philip Nerenberg, Lab Director

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Wednesday, December 9, 2015

Roger Brown
Hahn and Associates
434 NW 6th Ave. Suite 203
Portland, OR 97209

RE: REDINV / 7586

Enclosed are the results of analyses for work order A5K0856, which was received by the laboratory on 11/24/2015 at 3:35:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
7586-151124-001	A5K0856-01	Water	11/24/15 11:00	11/24/15 15:35

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Philip Nerenberg

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7586-151124-001 (A5K0856-01RE1)			**Matrix: Water**		**Batch: 5120143**			
Acetone	ND	---	20.0	ug/L	1	12/04/15 21:23	EPA 8260B	
Benzene	ND	---	0.200	"	"	"	"	
Bromobenzene	ND	---	0.500	"	"	"	"	
Bromochloromethane	ND	---	1.00	"	"	"	"	
Bromodichloromethane	ND	---	1.00	"	"	"	"	
Bromoform	ND	---	1.00	"	"	"	"	
Bromomethane	ND	---	5.00	"	"	"	"	
2-Butanone (MEK)	ND	---	10.0	"	"	"	"	
n-Butylbenzene	ND	---	1.00	"	"	"	"	
sec-Butylbenzene	ND	---	1.00	"	"	"	"	
tert-Butylbenzene	ND	---	1.00	"	"	"	"	
Carbon tetrachloride	ND	---	1.00	"	"	"	"	
Chlorobenzene	ND	---	0.500	"	"	"	"	
Chloroethane	ND	---	5.00	"	"	"	"	
Chloroform	ND	---	1.00	"	"	"	"	
Chloromethane	ND	---	5.00	"	"	"	"	Q-31
2-Chlorotoluene	ND	---	1.00	"	"	"	"	
4-Chlorotoluene	ND	---	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	---	5.00	"	"	"	"	
Dibromochloromethane	ND	---	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
Dibromomethane	ND	---	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	---	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	---	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	---	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	---	1.00	"	"	"	"	Q-31
1,1-Dichloroethane	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
1,1-Dichloroethene	ND	---	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	---	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	---	0.500	"	"	"	"	
1,2-Dichloropropane	ND	---	0.500	"	"	"	"	
1,3-Dichloropropane	ND	---	1.00	"	"	"	"	
2,2-Dichloropropane	ND	---	1.00	"	"	"	"	
1,1-Dichloropropene	ND	---	1.00	"	"	"	"	

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Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
7586-151124-001 (A5K0856-01RE1)			**Matrix: Water**		**Batch: 5120143**			
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Hexachlorobutadiene	ND	---	5.00	"	"	"	"	
2-Hexanone	ND	---	10.0	"	"	"	"	
Isopropylbenzene	ND	---	1.00	"	"	"	"	
4-Isopropyltoluene	ND	---	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
Methylene chloride	ND	---	5.00	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
n-Propylbenzene	ND	---	0.500	"	"	"	"	
Styrene	ND	---	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	---	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	---	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	---	0.500	"	"	"	"	
Toluene	ND	---	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	---	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	---	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	---	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	---	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	---	0.500	"	"	"	"	
Trichlorofluoromethane	ND	---	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	---	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	"	"	
Vinyl chloride	ND	---	0.500	"	"	"	"	
m,p-Xylene	ND	---	1.00	"	"	"	"	
o-Xylene	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 103 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*105 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*102 %*	*Limits: 80-120 %*	"	"	"	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B							**Water**					
Blank (5120143-BLK1)					Prepared: 12/04/15 09:30 Analyzed: 12/04/15 12:30							
EPA 8260B												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	"	"	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	---	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	"	"	---	---	---	---	---	---	
Chloroform	ND	---	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	"	"	---	---	---	---	---	---	Q-31
2-Chlorotoluene	ND	---	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	"	"	---	---	---	---	---	---	Q-31
1,1-Dichloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.500	"	"	---	---	---	---	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B							**Water**					
Blank (5120143-BLK1)					Prepared: 12/04/15 09:30 Analyzed: 12/04/15 12:30							
cis-1,2-Dichloroethene	ND	---	0.500	ug/L	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	---	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	"	"	---	---	---	---	---	---	

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B								**Water**				
Blank (5120143-BLK1)					Prepared: 12/04/15 09:30 Analyzed: 12/04/15 12:30							
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 96 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*99 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*104 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*105 %*		*80-120 %*			*"*				
LCS (5120143-BS1)					Prepared: 12/04/15 09:30 Analyzed: 12/04/15 11:35							
EPA 8260B												
Acetone	34.6	---	20.0	ug/L	1	40.0	---	87	70-130%	---	---	
Benzene	18.2	---	0.200	"	"	20.0	---	91	"	---	---	
Bromobenzene	19.4	---	0.500	"	"	"	---	97	"	---	---	
Bromochloromethane	21.5	---	1.00	"	"	"	---	108	"	---	---	
Bromodichloromethane	19.8	---	1.00	"	"	"	---	99	"	---	---	
Bromoform	22.4	---	1.00	"	"	"	---	112	"	---	---	
Bromomethane	16.5	---	5.00	"	"	"	---	82	"	---	---	
2-Butanone (MEK)	31.6	---	10.0	"	"	40.0	---	79	"	---	---	
n-Butylbenzene	18.2	---	1.00	"	"	20.0	---	91	"	---	---	
sec-Butylbenzene	18.9	---	1.00	"	"	"	---	95	"	---	---	
tert-Butylbenzene	18.3	---	1.00	"	"	"	---	91	"	---	---	
Carbon tetrachloride	39.3	---	1.00	"	"	"	---	197	"	---	---	Q-41
Chlorobenzene	19.5	---	0.500	"	"	"	---	97	"	---	---	
Chloroethane	27.9	---	5.00	"	"	"	---	139	"	---	---	Q-29
Chloroform	18.0	---	1.00	"	"	"	---	90	"	---	---	
Chloromethane	13.5	---	5.00	"	"	"	---	67	"	---	---	Q-31
2-Chlorotoluene	19.4	---	1.00	"	"	"	---	97	"	---	---	
4-Chlorotoluene	18.8	---	1.00	"	"	"	---	94	"	---	---	
1,2-Dibromo-3-chloropropane	19.2	---	5.00	"	"	"	---	96	"	---	---	

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Philip Nerenberg, Lab Director

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B							**Water**					
LCS (5120143-BS1)					Prepared: 12/04/15 09:30 Analyzed: 12/04/15 11:35							
Dibromochloromethane	22.9	---	1.00	ug/L	"	"	---	114	"	---	---	
1,2-Dibromoethane (EDB)	21.2	---	0.500	"	"	"	---	106	"	---	---	
Dibromomethane	18.8	---	1.00	"	"	"	---	94	"	---	---	
1,2-Dichlorobenzene	19.8	---	0.500	"	"	"	---	99	"	---	---	
1,3-Dichlorobenzene	19.0	---	0.500	"	"	"	---	95	"	---	---	
1,4-Dichlorobenzene	18.6	---	0.500	"	"	"	---	93	"	---	---	
Dichlorodifluoromethane	15.4	---	1.00	"	"	"	---	77	"	---	---	Q-31
1,1-Dichloroethane	18.8	---	0.500	"	"	"	---	94	"	---	---	
1,2-Dichloroethane (EDC)	17.9	---	0.500	"	"	"	---	89	"	---	---	
1,1-Dichloroethene	16.3	---	0.500	"	"	"	---	82	"	---	---	
cis-1,2-Dichloroethene	18.4	---	0.500	"	"	"	---	92	"	---	---	
trans-1,2-Dichloroethene	18.4	---	0.500	"	"	"	---	92	"	---	---	
1,2-Dichloropropane	18.9	---	0.500	"	"	"	---	94	"	---	---	
1,3-Dichloropropane	20.1	---	1.00	"	"	"	---	100	"	---	---	
2,2-Dichloropropane	20.0	---	1.00	"	"	"	---	100	"	---	---	
1,1-Dichloropropene	17.9	---	1.00	"	"	"	---	89	"	---	---	
cis-1,3-Dichloropropene	20.9	---	1.00	"	"	"	---	104	"	---	---	
trans-1,3-Dichloropropene	22.0	---	1.00	"	"	"	---	110	"	---	---	
Ethylbenzene	18.6	---	0.500	"	"	"	---	93	"	---	---	
Hexachlorobutadiene	17.4	---	5.00	"	"	"	---	87	"	---	---	
2-Hexanone	33.2	---	10.0	"	"	40.0	---	83	"	---	---	
Isopropylbenzene	19.1	---	1.00	"	"	20.0	---	95	"	---	---	
4-Isopropyltoluene	19.4	---	1.00	"	"	"	---	97	"	---	---	
4-Methyl-2-pentanone (MiBK)	34.0	---	10.0	"	"	40.0	---	85	"	---	---	
Methyl tert-butyl ether (MTBE)	17.9	---	1.00	"	"	20.0	---	90	"	---	---	
Methylene chloride	19.3	---	5.00	"	"	"	---	96	"	---	---	
Naphthalene	17.3	---	2.00	"	"	"	---	86	"	---	---	
n-Propylbenzene	18.9	---	0.500	"	"	"	---	94	"	---	---	
Styrene	19.1	---	1.00	"	"	"	---	96	"	---	---	
1,1,1,2-Tetrachloroethane	23.8	---	0.500	"	"	"	---	119	"	---	---	

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Philip Nerenberg, Lab Director

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B								**Water**				
LCS (5120143-BS1)					Prepared: 12/04/15 09:30		Analyzed: 12/04/15 11:35					
1,1,2,2-Tetrachloroethane	19.4	---	0.500	"	"	"	---	97	"	---	---	
Tetrachloroethene (PCE)	18.7	---	0.500	"	"	"	---	94	"	---	---	
Toluene	18.8	---	1.00	"	"	"	---	94	"	---	---	
1,2,3-Trichlorobenzene	17.0	---	2.00	"	"	"	---	85	"	---	---	
1,2,4-Trichlorobenzene	17.3	---	2.00	"	"	"	---	86	"	---	---	
1,1,1-Trichloroethane	18.6	---	0.500	"	"	"	---	93	"	---	---	
1,1,2-Trichloroethane	20.2	---	0.500	"	"	"	---	101	"	---	---	
Trichloroethene (TCE)	18.7	---	0.500	"	"	"	---	93	"	---	---	
Trichlorofluoromethane	28.2	---	2.00	"	"	"	---	141	"	---	---	Q-41
1,2,3-Trichloropropane	19.8	---	1.00	"	"	"	---	99	"	---	---	
1,2,4-Trimethylbenzene	18.9	---	1.00	"	"	"	---	95	"	---	---	
1,3,5-Trimethylbenzene	19.0	---	1.00	"	"	"	---	95	"	---	---	
Vinyl chloride	24.0	---	0.500	"	"	"	---	120	"	---	---	
m,p-Xylene	37.0	---	1.00	"	"	40.0	---	92	"	---	---	
o-Xylene	19.2	---	0.500	"	"	20.0	---	96	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*97 %*		*80-120 %*		*"*					
Toluene-d8 (Surr)			*104 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*		*"*					
Matrix Spike (5120143-MS1)					Prepared: 12/04/15 12:21		Analyzed: 12/04/15 21:51					
QC Source Sample: 7586-151124-001 (A5K0856-01)												
EPA 8260B												
Acetone	420	---	200	ug/L	10	400	ND	105	70-130%	---	---	
Benzene	191	---	2.00	"	"	200	1.90	95	"	---	---	
Bromobenzene	195	---	5.00	"	"	"	ND	97	"	---	---	
Bromochloromethane	239	---	10.0	"	"	"	ND	120	"	---	---	
Bromodichloromethane	214	---	10.0	"	"	"	ND	107	"	---	---	
Bromoform	232	---	10.0	"	"	"	ND	116	"	---	---	
Bromomethane	132	---	50.0	"	"	"	ND	66	"	---	---	Q-01
2-Butanone (MEK)	365	---	100	"	"	400	ND	91	"	---	---	
n-Butylbenzene	185	---	10.0	"	"	200	ND	93	"	---	---	

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Hahn and Associates	Project: **REDINV**	
434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B								**Water**				
Matrix Spike (5120143-MS1)					Prepared: 12/04/15 12:21		Analyzed: 12/04/15 21:51					
QC Source Sample: 7586-151124-001 (A5K0856-01)												
sec-Butylbenzene	192	---	10.0	ug/L	"	"	ND	96	"	---	---	
tert-Butylbenzene	190	---	10.0	"	"	"	ND	95	"	---	---	
Carbon tetrachloride	442	---	10.0	"	"	"	ND	221	"	---	---	Q-41
Chlorobenzene	195	---	5.00	"	"	"	ND	98	"	---	---	
Chloroethane	313	---	50.0	"	"	"	ND	156	"	---	---	Q-29
Chloroform	198	---	10.0	"	"	"	ND	99	"	---	---	
Chloromethane	144	---	50.0	"	"	"	ND	72	"	---	---	Q-31
2-Chlorotoluene	194	---	10.0	"	"	"	ND	97	"	---	---	
4-Chlorotoluene	190	---	10.0	"	"	"	ND	95	"	---	---	
1,2-Dibromo-3-chloropropane	195	---	50.0	"	"	"	ND	98	"	---	---	
Dibromochloromethane	232	---	10.0	"	"	"	ND	116	"	---	---	
1,2-Dibromoethane (EDB)	216	---	5.00	"	"	"	ND	108	"	---	---	
Dibromomethane	202	---	10.0	"	"	"	ND	101	"	---	---	
1,2-Dichlorobenzene	195	---	5.00	"	"	"	ND	98	"	---	---	
1,3-Dichlorobenzene	191	---	5.00	"	"	"	ND	95	"	---	---	
1,4-Dichlorobenzene	186	---	5.00	"	"	"	ND	93	"	---	---	
Dichlorodifluoromethane	168	---	10.0	"	"	"	ND	84	"	---	---	Q-31
1,1-Dichloroethane	201	---	5.00	"	"	"	ND	101	"	---	---	
1,2-Dichloroethane (EDC)	196	---	5.00	"	"	"	ND	98	"	---	---	
1,1-Dichloroethene	184	---	5.00	"	"	"	ND	92	"	---	---	
cis-1,2-Dichloroethene	196	---	5.00	"	"	"	ND	98	"	---	---	
trans-1,2-Dichloroethene	198	---	5.00	"	"	"	ND	99	"	---	---	
1,2-Dichloropropane	196	---	5.00	"	"	"	ND	98	"	---	---	
1,3-Dichloropropane	206	---	10.0	"	"	"	ND	103	"	---	---	
2,2-Dichloropropane	179	---	10.0	"	"	"	ND	90	"	---	---	
1,1-Dichloropropene	193	---	10.0	"	"	"	ND	97	"	---	---	
cis-1,3-Dichloropropene	205	---	10.0	"	"	"	ND	103	"	---	---	
trans-1,3-Dichloropropene	219	---	10.0	"	"	"	ND	110	"	---	---	
Ethylbenzene	191	---	5.00	"	"	"	ND	95	"	---	---	

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B							**Water**					
Matrix Spike (5120143-MS1)					Prepared: 12/04/15 12:21		Analyzed: 12/04/15 21:51					
QC Source Sample: 7586-151124-001 (A5K0856-01)												
Hexachlorobutadiene	171	---	50.0	ug/L	"	"	ND	86	"	---	---	
2-Hexanone	362	---	100	"	"	400	ND	90	"	---	---	
Isopropylbenzene	194	---	10.0	"	"	200	ND	97	"	---	---	
4-Isopropyltoluene	193	---	10.0	"	"	"	ND	96	"	---	---	
4-Methyl-2-pentanone (MiBK)	361	---	100	"	"	400	ND	90	"	---	---	
Methyl tert-butyl ether (MTBE)	192	---	10.0	"	"	200	ND	96	"	---	---	
Methylene chloride	196	---	50.0	"	"	"	ND	98	"	---	---	
Naphthalene	176	---	20.0	"	"	"	ND	88	"	---	---	
n-Propylbenzene	192	---	5.00	"	"	"	ND	96	"	---	---	
Styrene	189	---	10.0	"	"	"	ND	94	"	---	---	
1,1,1,2-Tetrachloroethane	243	---	5.00	"	"	"	ND	122	"	---	---	
1,1,2,2-Tetrachloroethane	204	---	5.00	"	"	"	ND	102	"	---	---	
Tetrachloroethene (PCE)	188	---	5.00	"	"	"	ND	94	"	---	---	
Toluene	191	---	10.0	"	"	"	ND	95	"	---	---	
1,2,3-Trichlorobenzene	170	---	20.0	"	"	"	ND	85	"	---	---	
1,2,4-Trichlorobenzene	171	---	20.0	"	"	"	ND	86	"	---	---	
1,1,1-Trichloroethane	204	---	5.00	"	"	"	ND	102	"	---	---	
1,1,2-Trichloroethane	204	---	5.00	"	"	"	ND	102	"	---	---	
Trichloroethene (TCE)	194	---	5.00	"	"	"	ND	97	"	---	---	
Trichlorofluoromethane	332	---	20.0	"	"	"	ND	166	"	---	---	Q-41
1,2,3-Trichloropropane	207	---	10.0	"	"	"	ND	104	"	---	---	
1,2,4-Trimethylbenzene	192	---	10.0	"	"	"	ND	96	"	---	---	
1,3,5-Trimethylbenzene	194	---	10.0	"	"	"	ND	97	"	---	---	
Vinyl chloride	246	---	5.00	"	"	"	ND	123	"	---	---	
m,p-Xylene	379	---	10.0	"	"	400	ND	95	"	---	---	
o-Xylene	193	---	5.00	"	"	200	ND	96	"	---	---	

Surr: Dibromofluoromethane (Surr)	*Recovery: 104 %*	*Limits: 80-120 %*	*Dilution: 1x*	
1,4-Difluorobenzene (Surr)	*100 %*	*80-120 %*	*"*	
Toluene-d8 (Surr)	*104 %*	*80-120 %*	*"*	

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5120143 - EPA 5030B												**Water**
Matrix Spike (5120143-MS1)						Prepared: 12/04/15 12:21		Analyzed: 12/04/15 21:51				
QC Source Sample: 7586-151124-001 (A5K0856-01)												
Surr: 4-Bromofluorobenzene (Surr)						*Recovery: 99 %*		*Limits: 80-120 %*				*Dilution: 1x*

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

SAMPLE PREPARATION INFORMATION

Volatile Organic Compounds by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5120143							
A5K0856-01RE1	Water	EPA 8260B	11/24/15 11:00	12/04/15 12:22	5mL/5mL	5mL/5mL	1.00

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434 NW 6th Ave. Suite 203	Project Number: 7586	**Reported:**
Portland, OR 97209	Project Manager: Roger Brown	12/09/15 14:29

Notes and Definitions

Qualifiers:

Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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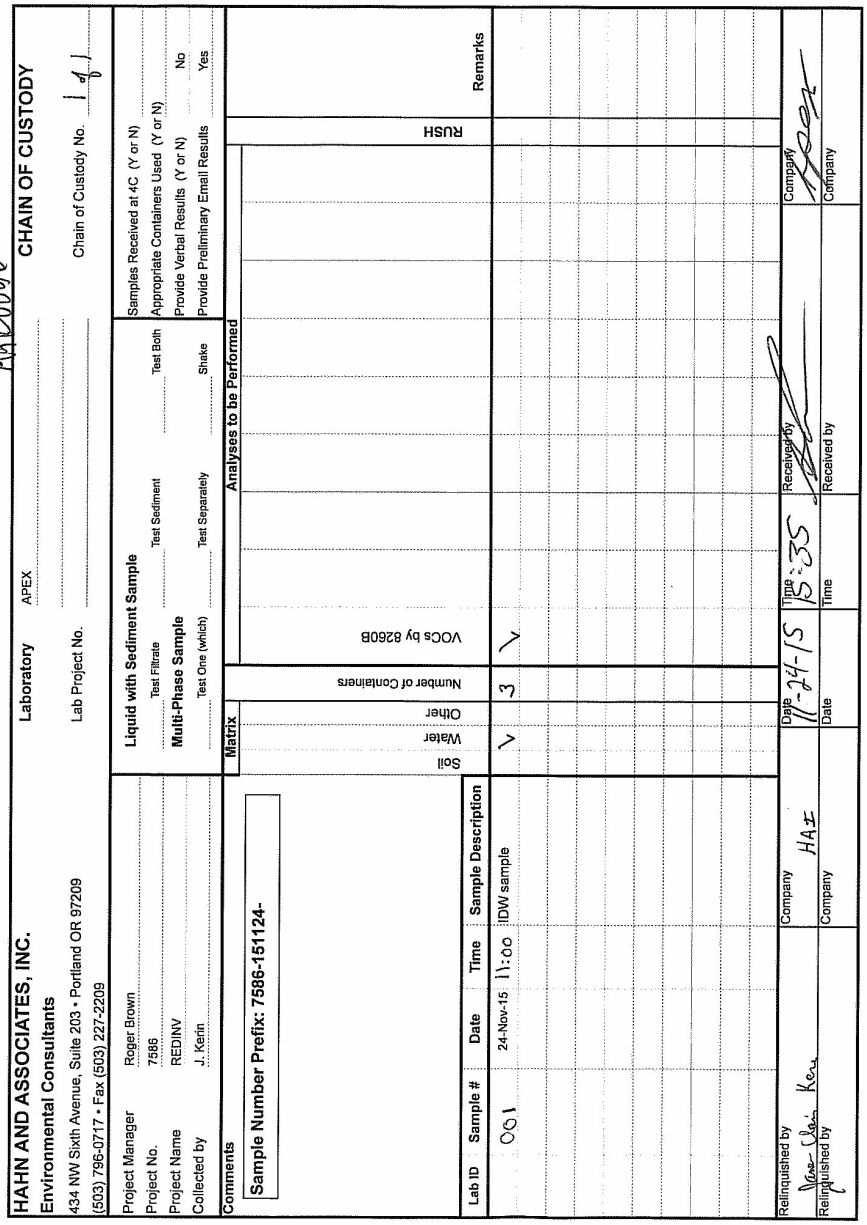

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CHAIN OF CUSTODY

Laboratory APEX
Lab Project No.
Chain of Custody No. 1 of 1

Project Manager Roger Brown
Project No. 7586
Project Name REDINV
Collected by J. Kerin

Liquid with Sediment Sample — Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample — Test One (which) / Test Separately / Shake
Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) — No
Provide Preliminary Email Results — Yes

Comments
Sample Number Prefix: 7586-151124-

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil	Water	Other	Number of Containers	Analyses to be Performed: VOCs by 8260B	RUSH	Remarks
	001	24-Nov-15	11:00	IDW sample		✓		3	✓		

Relinquished by — Company HAH — Date 11-24-15 — Time 15:35 — Received by — Company
Relinquished by — Company — Date — Time — Received by — Company

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ATTACHMENT C

Investigative-Derived Waste
Manifest

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CE3OG

Manifest Document No.: 12805

2. Page 1 of 1

3. Generator's Name and Mailing Address
Reed College
3203 SE Woodstock
Portland, OR 97202

4. Generator's Phone (503) 777-7763

3203 SE Woodstock Blvd.
Portland, OR 97202

5. Transporter 1 Company Name: Waste Watch, Inc.

6. US EPA ID Number: ORO000006221

A. State Transporter's ID

B. Transporter 1 Phone: 503-465-8682

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
US Ecology Idaho, Inc.
20400 Lemley Rd
Grand View, ID 83624

10. US EPA ID Number: IDD073114654

E. State Facility's ID

F. Facility's Phone: 800-274-1516

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non Hazardous, Non RCRA Regulated (soil)	1	DM	350	P
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

1) US EI39326

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: JANE-CLAIR KERIN

Signature: Jane-Clair Kerin

Date: Month 2 Day 3 Year 16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Kevin Lenton

Signature

Date: Month 2 Day 3 Year 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

Date: Month Day Year

NON-HAZARDOUS WASTE