Geosyntec consultants

621 SW Morrison St., Suite 600
Portland, OR 97205
PH 503.222.9518
www.geosyntec.com

2 April 2018

Mr. Kenneth Thiessen
Oregon Department of Environmental Quality
700 NE Multnomah St., Suite #600
Portland, Oregon 97232

Subject: Revised Well Decommissioning Work Plan
East Multnomah County Troutdale Sandstone Aquifer Remedy
Fairview, Oregon
ECSI No. 1479

Dear Ken:

Geosyntec Consultants (Geosyntec) has prepared this Revised Work Plan for well decommissioning as part of the East Multnomah County Troutdale Sandstone Aquifer (TSA) remedy being conducted jointly by Cascade Corporation (Cascade) and The Boeing Company (Boeing). The TSA remedy is being implemented under the Oregon State Department of Environmental Quality (DEQ) Consent Order No. WMCSR-NWR-96-08 (DEQ, 1997). This Work Plan provides the procedures and schedule to decommission seven groundwater monitoring wells [D-16(ds, dg), D-18(ds, dg), BOP-71(ds), BOP-70(ds), RPW-1(ds)] and two vapor extraction wells [VW-17-42.5, -75]. The locations of the wells to be decommissioned are shown on Figure 1.

Decommissioning five of these groundwater monitoring wells, D-18(ds), D-16(ds), RPW-1(ds), and two soil vapor extraction wells, VW-17D-75.0 and VW-17D-42.5, was recommended in the *2016 TSA Annual Report* (Geosyntec et al., 2017), which was approved by DEQ (DEQ, 2017). Decommissioning was recommended for these wells because 1) concentrations of volatile organic compounds (VOCs) met the TSA criteria for well decommissioning; 2) the well locations were no longer needed for PWB contingency monitoring or were redundant with other locations; or 3) soil vapor extraction (SVE) at the vapor wells was completed and the wells were no longer necessary.

Decommissioning of two groundwater monitoring wells, BOP-70(ds) and BOP-71(ds), was recommended in the 2015 TSA Annual Report (Geosyntec et al., 2016). These two Upper TSA wells were removed from the monitoring program because the wells were considered redundant with other wells located downgradient and closer to the leading edge of the dissolved VOC plume. The report was approved by DEQ (DEQ, 2016a), although the decommissioning was placed on hold pending potential transfer of these wells to the Portland Water Bureau (PWB). PWB declined the well transfer (PWB, 2016), and DEQ approved decommissioning of these two wells (along

with monitoring wells BOP22-dg and EMC-2usg which were decommissioned in November 2016 and April 2017, respectively) (DEQ, 2016b).

The history for decommissioning requests for D-16(dg) is uncertain, as we have not definitively identified a decommissioning request for the well in the project archive. The location and presence of D-16(dg) was confirmed in the field August 2017, and an above-ground monument and three bollards are present adjacent to well D-16(ds). A separate well tag was not identified for D-16(dg); it appears a single well tag was filed for the well pair [D-16(ds) and D-16(dg)]. D-16(dg) was last sampled in 2007, and it was not listed as part of the remedy monitoring well network after August 2007 (3rd Quarter 07; Prowell Environmental 2007) and water level discontinuation was requested in 2008 (Prowell Environmental and Landau Associates, 2008). In 2012, D-16(dg) was noted to be in use for PWB contingency monitoring (Prowell Environmental, et al., 2012); although it is not a selected compliance well in the 2015, 2012, or 2009 PWB Contingency Monitoring Plans (Landau Associates, 2015; Prowell Environmental, 2012; Prowell Environmental and Landau Associates, 2009), and no data were reported after 2008. Analytical data from D-16(dg) indicates all VOCs concentrations were below the laboratory reporting limits. Because D-16(dg) is not needed for PWB contingency monitoring and is redundant with other locations closer to the current VOC groundwater plume, we request DEQ approval for decommissioning this well.

D-18(dg) was reportedly decommissioned in 2010 with DEQ approval (Prowell Environmental, 2011). However, anecdotal information suggests monitoring well D-18(dg), or the monument for D-18(dg), may still be in place. D-18(dg) is located inside a building that we have not been able to access to confirm the well location. We continue to attempt to gain access to the well location to determine the well status. As such, this well is included in this document to decommission any remaining part of the well, if present.

WELL DESCRIPTIONS

Well construction details, including well location coordinates, screened aquifer units, ground surface elevations, well screen elevations, and total boring depths, are provided in Table 1. The boring and well construction logs for the wells are provided in Attachment 1. Historical VOC concentrations for well groundwater and soil vapor are summarized in Tables 2 and 3. Well location and construction information are summarized below.

- **BOP-70(ds):** Monitoring well BOP-70(ds) is located within the City of Gresham (City) right-of-way for NE 185th Avenue near the eastern curb just north of NE Sandy Boulevard (Figure 1). Decommissioning of this well will require a City right-of-way permit and traffic control plan. BOP-70(ds) has a flush-mount monument and contains three screened intervals in a single boring, as follows:

  - Shallow screen: -144.51 to -154.51 feet mean sea level (ft MSL), correlates to the lower unit of the confining layer between the Troutdale Gravel Aquifer (TGA) and the underlying TSA.
  - Intermediate screen: -174.51 to -184.51 ft MSL, correlates to the Upper TSA.
  - Deep screen: -204.51 to -214.51 ft MSL, correlates to the Lower TSA.

  Only the deep screen [BOP-70(ds)-215] was utilized for groundwater monitoring as part of the remedy progress monitoring program.

- **BOP-71(ds):** Monitoring well BOP-71(ds) is located just north of NE Sandy Boulevard on property owned by the Cereghino Trust. This well was originally thought to be located in City of Gresham right-of-way, and a right-of-way permit was issued for installation of this well. We understand the City currently is looking at expanding NE Sandy Blvd to the north. Monitoring well BOP-71(ds) has an above-grade monument with three bollards and is screened from elevation -185 to -205 ft MSL in the Upper TSA.

- **Wells D-16(ds) and D-16(dg):** Monitoring wells D-16(ds) and D-16(dg) are paired wells screened in the Upper and Lower TSA, respectively. The wells are located in an undeveloped agricultural field north of Sandy Blvd and east of Portal Way.
  - D-16(ds) has an above-ground monument with three bollards and is screened from elevation -114 to -134 ft MSL in the Upper TSA.
  - D-16(dg) has an above-ground monument with three bollards and is screened from elevation -206 to -226 ft MSL in the Lower TSA.

- **D-18(ds) and D-18(dg)**: Monitoring wells D-18(ds) and D-18(dg) are paired wells screened in the Upper and Lower TSA, respectively. The wells were installed in an undeveloped agricultural field north of NE Sandy Boulevard and east of Portal Way, which was later developed with a concrete slab on grade building. Well D-18(dg) was incorporated into the building (inside of a closet with an external door), D-18(ds) is located at the building exterior.
  - D-18(ds) has an above-ground monument and is screened from elevation -153 to -163 ft MSL in the Upper TSA.
  - D-18(dg) had a flush mount monument and is screened from elevation -237 to -257 ft MSL in the Lower TSA.

- **RPW-1(ds):** Monitoring well RPW1-(ds) is located in an undeveloped agricultural field north of NE Sandy Boulevard. This well was converted to an above ground completion in 2010 with surrounding bollards. RPW1-(ds) is screened from -63 to -103 ft MSL in the Upper TSA

- **VW-17-42.5 and VW-17-75:** Vapor wells VW-17-42.5 and -75 are located on the Cascade remediation property near the CTS compound. These wells were used for soil vapor extraction and were shut down in 2016 when VOC mass removal became isotropic. Both wells have above-ground monuments and three bollards.
    - VW-17-42.5 is screened just below Confining Unit 1 (CU1) from elevation 82.5 to 77.5 ft MSL (the base of screen is at 42.5 feet below ground surface [ft bgs]).
    - VW-17-75 is screened in the unsaturated portion of the Upper TSA from elevation 65 to 45 ft MSL (the base of screen is at 75.5 ft bgs)

METHODOLOGY

Well decommissioning procedures will be conducted in accordance with applicable Oregon Administrative Rules (OARs) outlined in OAR 690-240 using an Oregon Certified Driller.

Prior to decommissioning activities, the following activities will be performed:

- Perform underground utility locate survey to determine the potential presence and location of buried utilities in the well vicinity.
- Submit a well decommissioning start card, as required by OAR 690-240-0385.
- Measure the depth to water and the total depth of the well.

The Oregon Water Resources Department (OWRD) approved special standard requests to backfill or decommission in place seven of these nine wells on 23 January 2018 (Attachment 2). Two wells will be decommissioned by overdrilling [BOP-70(ds) and RPW-1ds].

Decommissioned in Place

Five groundwater monitoring wells D-16(ds, dg), D-18(ds, dg), and BOP-71(ds) along with the two vapor wells VW-17d-42.5 and VW-17d-75 will be decommissioned in place by backfilling. Decommissioning methods will be conducted in accordance with OAR 690-240-0510(2) and will follow the general steps outlined below:

- The monument, concrete pad, steel vault, and other surface items (e.g. bollards) will be removed using an excavator or similar heavy equipment.
- The boring will be decommissioned by filling the well from the bottom up with a bentonite grout slurry that will meet the requirements of OAR 690-240-0475.
- The well casing will then be cut below grade, as compatible with the local site conditions and land practices.

- The holes/excavations will be backfilled with gravel or as determined by the property owner, and the ground surface will be finished to match surrounding areas.
- Upon completion of the well decommissioning, the decommissioning materials and debris will be removed, and the ground surface restored to match surrounding terrain.

Over-Drilling

Two groundwater monitoring wells, BOP-70(ds) and RPW-1ds, will be decommissioned by over-drilling using a truck-mounted sonic drilling rig. Decommissioning methods will be conducted in accordance with OAR 690-240-0510(1) and will follow the general steps outlined below:

- The concrete pad, steel vault or well monument, and other surface items (e.g. bollards) will be removed using an excavator or similar heavy equipment.
- The well casing and screen, and well seal materials (e.g. filter pack sand, bentonite) will be removed by over-drilling the well from ground surface to the total depth of the well borehole. The drill bit will be selected to match the maximum outer diameter of the borehole.
- The drill cuttings, sand filter pack, and other debris will be removed from the boring.
- The bore hole will be backfilled with bentonite grout slurry from the bottom of the boring to approximately 5 ft bgs. The bentonite grout slurry will meet the requirements of OAR 690-240-0475 for backfill materials. Hydrated bentonite chips will be used to backfill the boring from 5 ft bgs to ground surface.
- Upon completion of the well decommissioning, the decommissioning materials and debris will be removed, and the ground surface restored to match surrounding terrain.

SITE CLEANUP AND WASTE MANAGEMENT

Solid wastes and soil cuttings generated during decommissioning will be contained in 55-gallon drums or lined and covered soil roll-off boxes, staged in temporary storage pending characterization, permitting, and transport to an off-site disposal facility.

Metal and concrete removed from the well will be decontaminated and recycled at an appropriate solid waste or recycling facility.

Displaced water or decontamination water collected and/or generated during decommissioning will be temporarily stored in 55-gallon drums or water storage totes, allowed to settle, and the water will be transferred to the TSA central treatment system (CTS) for treatment and ultimately discharged under the existing National Pollutant Discharge Elimination System permit. Remaining solids will be added to the soil drums prior to characterization and off-site disposal.

NOTIFICATION AND SCHEDULE

DEQ will be notified via email prior to, and upon the completion of, the well decommissioning. Notification information will include the following, in accordance with OAR 690-240-0510(6) (notification requirements):

- Well identification information;
- Decommissioning methodology;
- Amount and type of sealant/backfill material (i.e. bentonite grout) used; and
- Other information required by the DEQ.

Well decommissioning activities will also be reported in the 2018 TSA Annual Report. Well decommissioning activities are scheduled to begin Spring 2018 and are expected to require approximately 10 to 15 days to complete. The completion notification email will be sent to DEQ within two weeks after decommissioning activities are completed.

CLOSURE

We look forward to your review and approval of this Work Plan. Please contact us at 503-222-9518 with any questions regarding this Work Plan or if you need additional information.

Sincerely,

Geosyntec Consultants, Inc.

Cindy Bartlett, R.G.
Senior Geologist/Project Manager

Brent A. Miller, P.E.
Senior Principal

Cc: Jason Hegdahl, Cascade Corporation
Nick Garson, The Boeing Company
Christine Kimmel, Landau Associates

References:

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Attachments:

Table 1	Well Construction Summary
Table 2	Groundwater VOC Results Summary
Table 3	Soil Vapor VOC Results Summary
Figure 1	TSA Monitoring Wells to be decommissioned
Attachment 1	Well Boring and Exploration Logs
Attachment 2	OWRD Special Standard Letters

Tables

Table 1
Monitoring and Vapor Well Decommissioning Work Plan
Well Construction Summary
East Multnomah County TSA Remedy

Well Name	Well Type	Well Tag	Stratigraphic Unit	Survey Data Easting (X)	Survey Data Northing (Y)	Grnd Surface (ft MSL)	Measuring Point (ft MSL)	Screen Top (ft bgs)	Screen Bottom (ft bgs)	Screen Top Elev (ft MSL)	Screen Bottom Elev (ft MSL)	Screen Length (ft)	Well Diameter (inches)	Well Material	Well Depth (ft bgs)	Boring Depth (ft bgs)	Boring Diameter	Casing Material	Completed Date
BOP-70(ds-215) (triple completion)	Monitoring Well	L88979	Upper TSA	1,495,082.86	691,532.75	65.49	65.15	210	220	-144.51	-154.51	10	2	S80 PVC	220	285	12" (285 ft)	S80 PVC	03/29/2007
BOP-70(ds-245) (triple completion)	Monitoring Well	L88979	Upper TSA	1,495,082.86	691,532.75	65.49	65.13	240	250	-174.51	-184.51	10	2	S80 PVC	250	285	12" (285 ft)	S80 PVC	03/29/2007
BOP-70(ds-275) (triple completion)	Monitoring Well	L88979	Upper TSA	1,495,082.86	691,532.75	65.49	65.12	270	280	-204.51	-214.51	10	2	S80 PVC	280	285	12" (285 ft)	S80 PVC	03/29/2007
BOP-71(ds)	Monitoring Well	L88978	Upper TSA	1,494,310.26	691,381.33	85.62	87.88	271	291	-185.38	-205.38	20	3	S80 PVC	292	308	12" (195 ft) 8" (308 ft)	S80 PVC	03/01/2007
D-16(dg) (Clustered pair with D-16ds)	Monitoring Well	L13024	Lower TSA	1,497,511.90	693,134.80	15.1	16.84	221	241	-205.9	-225.9	20	2	S80 PVC	241	247	8 / 6	S80 PVC	08/10/1993
D-16(ds) (Clustered pair with D-16dg)	Monitoring Well	no tag	Upper TSA	7,699,286.38	693,072.86	15.4	16.91	129	149	-113.6	-133.6	20	2	S80 PVC	149	152.3	8 / 6	S80 PVC	09/02/1993
D-18(dg) Clustered pair with D-18ds)	Monitoring Well	L75476	Lower TSA	1,495,375.50	692,825.60	15.1	18.13	252.3	271.9	-237.2	-256.8	20	2	S80 PVC	273	301	9.75" (89.4 ft) 7" (301 ft)	S80 PVC	04/13/1995
D-18(ds) (Clustered pair with D-18dg)	Monitoring Well	no tag	Upper TSA	7,697,175.03	692,775.89	14.9	18.01	167.6	177.6	-152.7	-162.7	10	2	S80 PVC	178.6	178.6	9.75" (104.7 ft) 7" (178.6 ft)	S80 PVC	04/19/1995
RPW-1(ds)	Monitoring Well	L58103	Upper TSA	7,700,327.76	693,175.05	10.9	15.9	74	114	-63.1	-103.1	40	10	Steel	117	119	14" (119 ft)	Steel	08/08/1993
VW-17d-42.5	Vapor Well	L99270	CU1	7,700,554.10	689,407.13	120	123	37.5	42.5	82.5	77.5	5	2	S40 PVC	42.5	45	12" (25 ft) 6" (45 ft)	S40 PVC	03/01/2012
VW-17d-75.0	Vapor Well	L99269	Upper TSA	7,700,546.35	689,408.58	120	123	55	75	65	45	20	2	S40 PVC	75	95	12" (25 ft) 6" (75.5 ft) 4" (95 ft)	S40 PVC	03/08/2012

Notes:
TSA = Troutdale Sandstone Aquifer
ft = feet
PVC = polyvinyl chloride
MSL = mean sea level
bgs = below ground surface
T-R-S = Township, Range, Section
VOCs = volatile organic compound
ND = not detected

Table 1
Monitoring and Vapor Well Decommissioning Work Plan
Well Construction Summary
East Multnomah County TSA Remedy

Well Name	Property Owner	T-R-S	Notes
BOP-70(ds-215) **(triple completion)**	Gresham ROW - NE 185th Dr Community Development Phone: 503-618-2891 Fax: 503-618-2333 Alexandra.Walker@GreshamOregon.gov Gresham City Hall	1.00N-3.00E-29 NE-SW Multnomah County	VOCs ND Triple completed well (single bore hole). Well located in northbound travel lane of NE 185th Drv. Sight-lines are very poor for driving. Traffic control will be required and set up per the right of way permit for backfilling or overdrilling.
BOP-70(ds-245) **(triple completion)**			
BOP-70(ds-275) **(triple completion)**			
BOP-71(ds)	Well Address: undeveloped agricultural field north of Sandy Blvd Owner: MICHAEL CEREGHINO J 20525 NE Wistful Vista Drive Fairview, Oregon 97024	1.00N-3.00E-29 NE-SW Multnomah County	VOCs ND Well is located very close to a rock retaining wall for Sandy Blvd and a driveway for building/business adjacent to east. Both of these were constructed after the well was installed, and access for an air rotary drilling rig set up would be extremely limited and require a gravel access road to drive across field to well for the heavy drill rig.
D-16(dg) **(Clustered pair with D-16ds)**	Well Address: undeveloped agricultural field north of Sandy Blvd and east of Portal Way Owner: BT Property LLC ATTN REAL ESTATE TAX DEPT 55 GLENLAKE PKWY NE ATLANTA, GA 30328 Or use: PO BOX 28606 ATLANTA, GA 30358-0606	1.00N-3.00E-20 SW-SW Multnomah County 1N3E20C	VOCs ND Well converted to above grade completion in 2004.
D-16(ds) **(Clustered pair with D-16dg)**			VOCs ND Well converted to above grade completion in 2004. A gravel access road may be needed to drive across field to well for the heavy air rotary drill rig (since well is deep) to overdrill this well.
D-18(dg) **Clustered pair with D-18ds)**	Well/Building Address: 18792 NE Portal Way Gresham, OR 97203 Owner: Western B Northwest OR LLC c/o Marvin F Poer & Co 18818 Teller Ave #277 Irvine, CA 92612	1.00N-3.00E-20 SW-SW Multnomah County 1N3E20	VOCs ND. Inside building, which was constructed on top of the well with access through a door (the well is in a closet). No access for drill rig to overdrill.
D-18(ds) **(Clustered pair with D-18dg)**			VOCs ND A building was constructed adjacent to monitoring well and there is not access to overdrill (see photo)
RPW-1(ds)	Well Address: undeveloped agricultural field north of Sandy Blvd Owner: MICHAEL CEREGHINO J 20525 NE Wistful Vista Drive Fairview, Oregon 97024	1.00N-3.00E-20 NE-SE Multnomah County	VOCs ND Well converted to above grade 09/14/10. Concrete vault located in close proximity to well (see special standard for bollards installation) A gravel access road may be needed to drive across field to well for the heavy air rotary drill rig (since well is deep) to overdrill this well.
VW-17d-42.5	Cascade Corporation 2201 NE 201st Ave, Gresham, OR Well address: 2525 NE 201st Ave, Gresham, OR	1.00N-3.00E-29 SE-NE Multnomah County	VOCs ND in vapor; These are a vapor monitoring wells that do not intersect groundwater.
VW-17d-75.0			

Table 2
Monitoring and Vapor Well Decommissioning Work Plan
Groundwater VOC Results Summary
East Multnomah County TSA Remedy

Location	Date Sampled	Sample Identification	Trichloroethene (TCE)	Tetrachloroethene (PCE)	cis-1,2-Dichloroethene	Vinyl Chloride	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-dichloro-1-Propene	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	Acetone	Acrolein	acrylonitrile	Benzene	bromobenzene	Bromoform	Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroform	Chloromethane	cis-1,3-Dichloropropene	Dibromomethane	Dichlorobromomethane	Diisopropyl Ether
BOP-70ds (215)	2011-08-08	BOP-70ds (215);BOP-70ds-215;20110808	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2012-02-22	BOP-70ds (215);BOP-70ds-215;20120222	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2012-07-30	BOP-70ds (215);BOP-70ds-215;20120730	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2013-02-13	BOP70-ds215-021313	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	< 0.50								< 0.50	< 0.50	< 0.50		< 0.50		< 0.50						< 0.50				< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	
BOP-70ds (215)	2013-08-20	BOP70 DS-215	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
BOP-70ds (215)	2014-02-05	BOP 70DS215-020514	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
BOP-70ds (215)	2014-08-05	BOP70DS-215-080514	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-215);20070418	0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-215)-Dup;20070418	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-215);20070418	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-05-15	BOP-70ds (215);BOP-70(ds-215);20070515	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-08-06	BOP-70ds (215);BOP-70(ds-215);20070806	0.62	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-11-07	BOP-70ds (215);BOP-70(ds-215);20071107	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2008-02-07	BOP-70ds (215);BOP-70(ds-215);20080207	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2008-05-07	BOP-70ds (215);BOP-70(ds-215);20080507	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2008-08-12	BOP-70ds (215);BOP-70(ds-215);20080812	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2008-11-11	BOP-70ds (215);BOP-70(ds-215);20081111	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2009-02-09	BOP-70ds (215);BOP-70(ds-215);20090209	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2009-05-13	BOP-70ds (215);BOP-70(ds-215);20090513	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2009-08-13	BOP-70ds (215);BOP-70(ds-215);20090813	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2010-02-10	BOP-70ds (215);BOP-70(ds-215);20100210	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2010-08-10	BOP-70ds (215);BOP-70(ds-215);20100810	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2011-02-08	BOP-70ds (215);BOP-70(ds-215);20110208	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-245);20070418	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-275);20070418	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-245);20070418	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-275);20070418	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-05-15	BOP-70ds (215);BOP-70(ds-245);20070515	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-70ds (215)	2007-05-15	BOP-70ds (215);BOP-70(ds-275);20070515	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-04-17	BOP-71ds;BOP-71(ds);20070417	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-04-17	BOP-71ds;BOP-71(ds);20070417	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-05-15	BOP-71ds;BOP-71(ds);20070515	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-08-06	BOP-71ds;BOP-71(ds);20070806	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-11-07	BOP-71ds;BOP-71(ds);20071107	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-04-17	BOP-71ds;BOP-71(ds);20070417	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-05-15	BOP-71ds;BOP-71(ds);20070515	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-08-06	BOP-71ds;BOP-71(ds);20070806	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2007-11-07	BOP-71ds;BOP-71(ds);20071107	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2008-02-07	BOP-71ds;BOP-71(ds);20080207	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2008-05-07	BOP-71ds;BOP-71(ds);20080507	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2008-08-12	BOP-71ds;BOP-71(ds);20080812	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2008-11-11	BOP-71ds;BOP-71(ds);20081111	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2009-02-09	BOP-71ds;BOP-71(ds);20090209	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2009-05-13	BOP-71ds;BOP-71(ds);20090513	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2009-08-13	BOP-71ds;BOP-71(ds);20090813	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2010-02-10	BOP-71ds;BOP-71(ds);20100210	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2010-08-10	BOP-71ds;BOP-71(ds);20100810	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2011-02-08	BOP-71ds;BOP-71(ds);20110208	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2011-08-08	BOP-71ds;BOP-71ds;20110808	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2012-02-22	BOP-71ds;BOP-71ds;20120222	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2012-07-30	BOP-71ds;BOP-71ds;20120730	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
BOP-71ds	2013-02-13	BOP71ds-021313	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	< 0.50								< 0.50	< 0.50	< 0.50		< 0.50		< 0.50						< 0.50				< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	
BOP-71ds	2013-08-20	BOP71-082013	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
BOP-71ds	2014-02-05	BOP 71DS-020514	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
BOP-71ds	2014-08-05	BOP71DS-080514	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
D-16dg	1993-09-08	D-16dg;;19930908	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0								< 2.0	< 1.0		< 1.0	
D-16dg	1993-10-06	D-16dg;;19931006	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1993-11-30	D-16dg;;19931130	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1994-03-03	D-16dg;;19940303	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1994-05-25	D-16dg;;19940525	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1994-08-12	D-16dg;;19940812	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1994-09-01	D-16dg;BLA PT;19940901	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20								< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 2.0	< 0.20		< 0.20	
D-16dg	1994-09-29	D-16dg;BLA PT;19940929	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1994-10-27	D-16dg;;19941027	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1994-11-22	D-16dg;SGA PT;19941122	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1995-01-03	D-16dg;SGA PT;19950103	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1995-02-14	D-16dg;;19950214	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20								0.00038		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 2.0	< 0.20		< 0.20	
D-16dg	1995-08-15	D-16dg;;19950815	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-02-16	D-16dg;;19960216	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-08-05	D-16dg;;19960805	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-09-11	D-16dg;BLA PT;19960911	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-09-18	D-16dg;BLA PT;19960918	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-09-25	D-16dg;BLA PT;19960925	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-10-01	D-16dg;BLA PT;19961001	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-10-17	D-16dg;TSA PT;19961017	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1996-10-24	D-16dg;TSA PT;19961024	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1997-02-14	D-16dg;;19970214	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0					< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16dg	1998-02-16	D-16dg;;19980216	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20					< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 2.0	< 0.20		< 0.20	
D-16dg	1998-08-11	D-16dg;;19980811	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20					< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 2.0	< 0.20		< 0.20	
D-16dg	1999-08-14	D-16dg;;19990814	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20					< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 2.0	< 0.20		< 0.20	
D-16dg	2000-08-21	D-16dg;TSA28-0800;20000821	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20					< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 2.0	< 0.20		< 0.20	
D-16dg	2001-08-17	D-16dg;BOPTSA29;20010817	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J										< 0.20 J	< 0.20 J					< 0.0010 J			< 0.00020 J		< 0.50 J		< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	0.20 J	< 0.20 J		< 0.20 J	
D-16dg	2002-08-15	D-16dg;D-16(dg);20020815	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16dg	2003-08-25	D-16dg;D-16(dg);20030825	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16dg	2004-08-23	D-16dg;D-16(dg);20040823	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														

Table 2
Monitoring and Vapor Well Decommissioning Work Plan
Groundwater VOC Results Summary
East Multnomah County TSA Remedy

Location	Date Sampled	Sample Identification	Trichloroethene (TCE)	Tetrachloroethene (PCE)	cis-1,2-Dichloroethene	Vinyl Chloride	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-dichloro-1-Propene	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,3-Trimethylbenzene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	Acetone	Acrolein	acrylonitrile	Benzene	bromobenzene	Bromoform	Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroform	Chloromethane	cis-1,3-Dichloropropene	Dibromomethane	Dichlorobromomethane	Diisopropyl Ether
D-16dg	2005-08-15	D-16dg;D-16(dg);20050815	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16dg	2006-08-16	D-16dg;D-16(dg);20060816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16dg	2007-08-16	D-16dg;D-16(dg);20070816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	1993-09-08	D-16ds;;19930908	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1993-11-30	D-16ds;;19931130	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1993-11-30	D-16ds;;19931130	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1994-02-15	D-16ds;;19940215	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1994-03-03	D-16ds;;19940303	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1994-05-25	D-16ds;;19940525	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1994-08-11	D-16ds;;19940811	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20									< 0.00020		< 0.50			< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	1994-09-01	D-16ds;BLA PT;19940901	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20									< 0.00020		< 0.50			< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	1994-09-29	D-16ds;BLA PT;19940929	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1994-10-28	D-16ds;;19941028	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1994-11-22	D-16ds;SGA PT;19941122	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1995-01-03	D-16ds;SGA PT;19950103	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1995-02-14	D-16ds;;19950214	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20									< 0.00020		< 0.50			< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	1995-08-15	D-16ds;;19950815	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-02-16	D-16ds;;19960216	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						0.024			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-08-05	D-16ds;;19960805	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-09-11	D-16ds;BLA PT;19960911	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-09-18	D-16ds;BLA PT;19960918	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-09-25	D-16ds;BLA PT;19960925	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-10-01	D-16ds;BLA PT;19961001	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-10-17	D-16ds;TSA PT;19961017	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1996-10-24	D-16ds;TSA PT;19961024	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1997-02-24	D-16ds;;19970224	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-16ds	1998-02-16	D-16ds;;19980216	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	1998-08-11	D-16ds;;19980811	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		3.3 J	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	1999-08-14	D-16ds;;19990814	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	2000-08-21	D-16ds;TSA27-0800;20000821	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-16ds	2001-08-17	D-16ds;BOPTSA28;20010817	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J										< 0.20 J	< 0.20 J						< 0.0010 J			< 0.00020 J		< 0.50 J		< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	0.30 J	< 0.20 J		< 0.20 J	
D-16ds	2002-08-15	D-16ds;D-16(ds);20020815	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2003-08-25	D-16ds;D-16(ds);20030825	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2004-08-23	D-16ds;D-16(ds);20040823	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2005-08-15	D-16ds;D-16(ds);20050815	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2006-08-16	D-16ds;D-16(ds);20060816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2007-08-16	D-16ds;D-16(ds);20070816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2008-08-11	D-16ds;D-16(ds);20080811	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2009-08-13	D-16ds;D-16(ds);20090813	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2011-08-10	D-16ds;D-16ds;20110810	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-16ds	2013-08-20	D16DS-082013	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
D-16ds	2013-08-20	D16DS-082013-D	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
D-16ds	2015-08-04	D-16DS-080415	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
D-18dg	1995-05-10	D-18dg;;19950510	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0											< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1995-06-07	D-18dg;;19950607	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1995-08-15	D-18dg;;19950815	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1995-11-07	D-18dg;;19951107	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1996-02-08	D-18dg;;19960208	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		3.8	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1996-02-15	D-18dg;;19960215	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0057			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1996-08-06	D-18dg;;19960806	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1997-02-13	D-18dg;;19970213	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1997-02-13	D-18dg;;19970213	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18dg	1998-02-18	D-18dg;;19980218	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18dg	1998-08-11	D-18dg;;19980811	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18dg	1999-08-17	D-18dg;;19990817	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18dg	2000-08-22	D-18dg;TSA32-0800;20000822	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18dg	2001-08-21	D-18dg;BOPTSA33;20010821	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J										< 0.20 J	< 0.20 J						< 0.0010 J			< 0.00020 J		< 0.50 J		< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	0.40 J	< 0.20 J		< 0.20 J	
D-18dg	2002-08-19	D-18dg;D-18(dg);20020819	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2003-08-26	D-18dg;D-18(dg);20030826	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2004-08-23	D-18dg;D-18(dg);20040823	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2005-08-15	D-18dg;D-18(dg);20050815	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2006-10-16	D-18dg;D-18(dg);20061016	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2007-08-16	D-18dg;D-18(dg);20070816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2010-01-06	D-18dg;D-18(dg);20100106	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18dg	2010-01-06	D-18dg;D-18(dg);20100106-U	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	1995-05-10	D-18ds;;19950510	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1995-06-07	D-18ds;;19950607	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		22	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1995-08-15	D-18ds;;19950815	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1995-11-07	D-18ds;;19951107	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1996-02-08	D-18ds;;19960208	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1996-02-15	D-18ds;;19960215	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1996-08-06	D-18ds;;19960806	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1997-02-13	D-18ds;;19970213	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
D-18ds	1998-02-16	D-18ds;;19980216	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18ds	1998-08-10	D-18ds;;19980810	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18ds	1999-08-17	D-18ds;;19990817	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18ds	2000-08-22	D-18ds;TSA31-0800;20000822	0.60	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
D-18ds	2001-08-21	D-18ds;BOPTSA32;20010821	1.4 J	< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	< 0.20 J										< 0.20 J	< 0.20 J						< 0.0010 J			< 0.00020 J		< 0.50 J		< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J	< 0.20 J		< 0.20 J	
D-18ds	2001-11-13	D-18ds;D-18(ds);20011113	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2002-02-18	D-18ds;D-18(ds);20020218	0.60	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2002-05-06	D-18ds;D-18(ds);20020506	0.62	< 0.50	< 0.50	< 0.50							< 0.50																														

Table 2
Monitoring and Vapor Well Decommissioning Work Plan
Groundwater VOC Results Summary
East Multnomah County TSA Remedy

Location	Date Sampled	Sample Identification	Trichloroethene (TCE)	Tetrachloroethene (PCE)	cis-1,2-Dichloroethene	Vinyl Chloride	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-dichloro-1-Propene	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,3-Trimethylbenzene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	Acetone	Acrolein	acrylonitrile	Benzene	bromobenzene	Bromoform	Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroform	Chloromethane	cis-1,3-Dichloropropene	Dibromomethane	Dichlorobromomethane	Diisopropyl Ether
D-18ds	2002-08-19	D-18ds;D-18(ds);20020819	0.76	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2003-08-21	D-18ds;D-18(ds);20030821	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2004-02-09	D-18ds;D-18(ds);20040209	0.77	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2004-08-23	D-18ds;D-18(ds);20040823	0.62	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2005-02-15	D-18ds;D-18(ds);20050215	0.56	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2005-08-07	D-18ds;D-18(ds);20050807	0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2006-02-06	D-18ds;D-18(ds);20060206	0.52	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2006-02-06	D-18ds;D-18(ds);20060206	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2006-05-10	D-18ds;D-18(ds);20060510	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2006-05-10	D-18ds;D-18(ds);20060510	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2006-08-16	D-18ds;D-18(ds);20060816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2007-08-16	D-18ds;D-18(ds);20070816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2008-08-11	D-18ds;D-18(ds);20080811	0.54	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2009-08-13	D-18ds;D-18(ds);20090813	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2010-08-10	D-18ds;D-18(ds);20100810	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2011-08-10	D-18ds;D-18ds;20110810	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
D-18ds	2013-08-20	D18DS-082013	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
D-18ds	2015-08-04	D-18DS-080415	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
D-18ds	2015-08-04	D-18DS-080415-DUP	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 1.0	< 0.0010	< 0.0025	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 0.0010	< 1.0	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0010	< 1.0	< 0.0010	< 0.050	< 0.050	< 0.010	< 0.0010	< 0.0010	< 1.0	< 0.0010		< 1.0	< 1.0	< 1.0	< 5.0	< 2.5	< 1.0	< 0.0010	< 1.0	< 0.0010
RPW-1ds	1993-09-18	RPW-1ds;RPW-2 PT;19930918																																										
RPW-1ds	1993-09-18	RPW-1ds;RPW-2 PT;19930918																																										
RPW-1ds	1993-09-29	RPW-1ds;RPW-2 PT;19930929																																										
RPW-1ds	1993-09-29	RPW-1ds;RPW-2 PT;19930929																																										
RPW-1ds	1993-10-08	RPW-1ds;RPW-2 PT;19931008	1.0																																									
RPW-1ds	1993-10-08	RPW-1ds;RPW-2 PT;19931008																																										
RPW-1ds	1993-10-12	RPW-1ds;RPW-2 PT;19931012	3.2																																									
RPW-1ds	1993-12-29	RPW-1ds;;19931229	4.6		1.8																																							
RPW-1ds	1994-04-01	RPW-1ds;;19940401	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	< 0.50										< 0.50	< 0.50														< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50		< 0.50	
RPW-1ds	1994-06-27	RPW-1ds;;19940627	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	< 0.50										< 0.50	< 0.50														< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50		< 0.50	
RPW-1ds	1994-06-27	RPW-1ds;;19940627	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	< 0.50										< 0.50	< 0.50														< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50		< 0.50	
RPW-1ds	1994-08-02	RPW-1ds;;19940802	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						0.056			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1994-08-23	RPW-1ds;;19940823	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	< 0.50										< 0.50	< 0.50														< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50		< 0.50	
RPW-1ds	1994-09-01	RPW-1ds;BLA PT;19940901	0.72	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20									< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	1994-09-15	RPW-1ds;BLA PT;19940915	0.71	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20									< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	1994-09-29	RPW-1ds;BLA PT;19940929	1.1	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1994-10-13	RPW-1ds;BLA PT;19941013	1.8	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1994-10-13	RPW-1ds;BLA PT;19941013	1.9	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1994-10-27	RPW-1ds;;19941027	2.8	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1995-02-20	RPW-1ds;;19950220	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20									< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	1995-05-24	RPW-1ds;;19950524	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1995-08-15	RPW-1ds;;19950815	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1995-11-06	RPW-1ds;;19951106	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-02-21	RPW-1ds;Boeing;19960221	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-05-30	RPW-1ds;;19960530	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-08-19	RPW-1ds;;19960819	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-09-11	RPW-1ds;BLA PT;19960911	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-09-19	RPW-1ds;BLA PT;19960919	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-09-26	RPW-1ds;BLA PT;19960926	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1996-10-02	RPW-1ds;BLA PT;19961002	< 1.0	< 1.0	< 1.0	< 2.0		< 1.0	< 1.0	< 1.0		< 1.0	< 1.0										< 1.0	< 1.0						< 0.0050			< 0.0010		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0		< 1.0	
RPW-1ds	1998-02-17	RPW-1ds;;19980217	0.70	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	1998-08-19	RPW-1ds;;19980819	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	1999-08-18	RPW-1ds;;19990818	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	2000-08-21	RPW-1ds;TSA33-0800;20000821	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	
RPW-1ds	2001-08-23	RPW-1ds;BOPTSA35;20010823	< 0.20	< 0.20	< 0.20	< 0.20		< 0.20	< 0.20	< 0.20		< 0.20	< 0.20										< 0.20	< 0.20						< 0.0010			< 0.00020		< 0.50		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.30	< 0.20		< 0.20	
RPW-1ds	2002-08-20	RPW-1ds;RPW-1(ds);20020820	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2003-08-19	RPW-1ds;RPW-1(ds);20030819	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2004-08-24	RPW-1ds;RPW-1(ds);20040824	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2005-08-15	RPW-1ds;RPW-1(ds);20050815	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-02-20	RPW-1ds;RPW-1(ds);20060220-L	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-05-10	RPW-1ds;RPW-1(ds);20060510-L	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-08-16	RPW-1ds;RPW-1(ds);20060816	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-02-20	RPW-1ds;RPW-1(ds);20060220	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-05-10	RPW-1ds;RPW-1(ds);20060510	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-02-20	RPW-1ds;RPW-1(ds);20060220-U	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-05-10	RPW-1ds;RPW-1(ds);20060510-U	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														
RPW-1ds	2006-08-16	RPW-1ds;RPW-1(ds);20060816-U	< 0.50	< 0.50	< 0.50	< 0.50							< 0.50																														

Table 2
Monitoring and Vapor Well Decommissioning Work Plan
Groundwater VOC Results Summary
East Multnomah County TSA Remedy

Location	Date Sampled	Sample Identification	Ethyl Chloride	Ethylbenzene	Ethylene	Fluoride	Freon 11	Freon 113	Freon 12	Hexachlorobutadiene (HCBD)	Isopropylbenzene	Methyl Bromide	Methyl butyl ketone	Methyl ethyl ketone	Methyl Isobutyl Ketone (MIBK)	Methyl tert-Butyl Ether (MTBE)	Methylene Chloride (DCM)	Naphthalene	n-Propylbenzene	o-Chlorotoluene	p-Chlorotoluene	p-Cymene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Vinyl 2-Chloroethyl ether	Vinyl Acetate	Xylenes, Total
BOP-70ds (215)	2011-08-08	BOP-70ds (215);BOP-70ds-215;20110808																													
BOP-70ds (215)	2012-02-22	BOP-70ds (215);BOP-70ds-215;20120222																													
BOP-70ds (215)	2012-07-30	BOP-70ds (215);BOP-70ds-215;20120730																													
BOP-70ds (215)	2013-02-13	BOP70-ds215-021313	< 0.50				< 0.50	< 0.50	< 0.50			< 0.50					< 2.0									< 0.50	< 0.50				
BOP-70ds (215)	2013-08-20	BOP70 DS-215	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
BOP-70ds (215)	2014-02-05	BOP 70DS215-020514	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
BOP-70ds (215)	2014-08-05	BOP70DS-215-080514	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-215);20070418																													
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-215)-Dup;20070418																													
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-215);20070418																													
BOP-70ds (215)	2007-05-15	BOP-70ds (215);BOP-70(ds-215);20070515																													
BOP-70ds (215)	2007-08-06	BOP-70ds (215);BOP-70(ds-215);20070806																													
BOP-70ds (215)	2007-11-07	BOP-70ds (215);BOP-70(ds-215);20071107																													
BOP-70ds (215)	2008-02-07	BOP-70ds (215);BOP-70(ds-215);20080207																													
BOP-70ds (215)	2008-05-07	BOP-70ds (215);BOP-70(ds-215);20080507																													
BOP-70ds (215)	2008-08-12	BOP-70ds (215);BOP-70(ds-215);20080812																													
BOP-70ds (215)	2008-11-11	BOP-70ds (215);BOP-70(ds-215);20081111																													
BOP-70ds (215)	2009-02-09	BOP-70ds (215);BOP-70(ds-215);20090209																													
BOP-70ds (215)	2009-05-13	BOP-70ds (215);BOP-70(ds-215);20090513																													
BOP-70ds (215)	2009-08-13	BOP-70ds (215);BOP-70(ds-215);20090813																													
BOP-70ds (215)	2010-02-10	BOP-70ds (215);BOP-70(ds-215);20100210																													
BOP-70ds (215)	2010-08-10	BOP-70ds (215);BOP-70(ds-215);20100810																													
BOP-70ds (215)	2011-02-08	BOP-70ds (215);BOP-70(ds-215);20110208																													
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-245);20070418																													
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-275);20070418																													
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-245);20070418																													
BOP-70ds (215)	2007-04-18	BOP-70ds (215);BOP-70(ds-275);20070418																													
BOP-70ds (215)	2007-05-15	BOP-70ds (215);BOP-70(ds-245);20070515																													
BOP-70ds (215)	2007-05-15	BOP-70ds (215);BOP-70(ds-275);20070515																													
BOP-71ds	2007-04-17	BOP-71ds;BOP-71(ds);20070417																													
BOP-71ds	2007-04-17	BOP-71ds;BOP-71(ds);20070417																													
BOP-71ds	2007-05-15	BOP-71ds;BOP-71(ds);20070515																													
BOP-71ds	2007-08-06	BOP-71ds;BOP-71(ds);20070806																													
BOP-71ds	2007-11-07	BOP-71ds;BOP-71(ds);20071107																													
BOP-71ds	2007-04-17	BOP-71ds;BOP-71(ds);20070417																													
BOP-71ds	2007-05-15	BOP-71ds;BOP-71(ds);20070515																													
BOP-71ds	2007-08-06	BOP-71ds;BOP-71(ds);20070806																													
BOP-71ds	2007-11-07	BOP-71ds;BOP-71(ds);20071107																													
BOP-71ds	2008-02-07	BOP-71ds;BOP-71(ds);20080207																													
BOP-71ds	2008-05-07	BOP-71ds;BOP-71(ds);20080507																													
BOP-71ds	2008-08-12	BOP-71ds;BOP-71(ds);20080812																													
BOP-71ds	2008-11-11	BOP-71ds;BOP-71(ds);20081111																													
BOP-71ds	2009-02-09	BOP-71ds;BOP-71(ds);20090209																													
BOP-71ds	2009-05-13	BOP-71ds;BOP-71(ds);20090513																													
BOP-71ds	2009-08-13	BOP-71ds;BOP-71(ds);20090813																													
BOP-71ds	2010-02-10	BOP-71ds;BOP-71(ds);20100210																													
BOP-71ds	2010-08-10	BOP-71ds;BOP-71(ds);20100810																													
BOP-71ds	2011-02-08	BOP-71ds;BOP-71(ds);20110208																													
BOP-71ds	2011-08-08	BOP-71ds;BOP-71ds;20110808																													
BOP-71ds	2012-02-22	BOP-71ds;BOP-71ds;20120222																													
BOP-71ds	2012-07-30	BOP-71ds;BOP-71ds;20120730																													
BOP-71ds	2013-02-13	BOP71ds-021313	< 0.50				< 0.50	< 0.50	< 0.50			< 0.50					< 2.0									< 0.50	< 0.50				
BOP-71ds	2013-08-20	BOP71-082013	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
BOP-71ds	2014-02-05	BOP 71DS-020514	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
BOP-71ds	2014-08-05	BOP71DS-080514	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
D-16dg	1993-09-08	D-16dg;;19930908	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	0.0070	< 0.0050		< 2.0								< 0.0010		0.00080 J	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16dg	1993-10-06	D-16dg;;19931006	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16dg	1993-11-30	D-16dg;;19931130	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16dg	1994-03-03	D-16dg;;19940303	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16dg	1994-05-25	D-16dg;;19940525	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16dg	1994-08-12	D-16dg;;19940812	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	0.0066	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16dg	1994-09-01	D-16dg;BLA PT;19940901	< 0.20	< 0.00020			< 0.20				< 0.20					< 0.20								< 0.00020		< 0.00020	< 0.20	< 0.20			< 0.00020
D-16dg	1994-09-29	D-16dg;BLA PT;19940929	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16dg	1994-10-27	D-16dg;;19941027	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		0.0011	< 1.0	< 1.0		< 5.0	< 0.0020
D-16dg	1994-11-22	D-16dg;SGA PT;19941122	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16dg	1995-01-03	D-16dg;SGA PT;19950103	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16dg	1995-02-14	D-16dg;;19950214	< 0.20	< 0.00020			< 0.20				< 0.20					< 0.20								< 0.00020		0.0018	< 0.20	< 0.20			< 0.00020
D-16dg	1995-08-15	D-16dg;;19950815	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-16dg	1996-02-16	D-16dg;;19960216	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1996-08-05	D-16dg;;19960805	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1996-09-11	D-16dg;BLA PT;19960911	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1996-09-18	D-16dg;BLA PT;19960918	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1996-09-25	D-16dg;BLA PT;19960925	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1996-10-01	D-16dg;BLA PT;19961001	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1996-10-17	D-16dg;TSA PT;19961017	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-16dg	1996-10-24	D-16dg;TSA PT;19961024	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-16dg	1997-02-14	D-16dg;;19970214	< 2.0	< 0.0010			< 2.0	< 2.0			< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16dg	1998-02-16	D-16dg;;19980216	< 0.20	< 0.00020			< 0.20	< 0.20			< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16dg	1998-08-11	D-16dg;;19980811	< 0.20	< 0.00020			< 0.20	< 0.20			< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16dg	1999-08-14	D-16dg;;19990814	< 0.20	< 0.00020			< 0.20	< 0.20			< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16dg	2000-08-21	D-16dg;TSA28-0800;20000821	< 0.20	< 0.00020			< 0.20	< 0.20			< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16dg	2001-08-17	D-16dg;BOPTSA29;20010817	< 0.20 J	< 0.00020 J			< 0.20 J	< 0.20 J			< 0.20 J	< 1.0 J	< 0.0010 J	< 0.0010 J		< 0.30 J								< 0.00020 J		< 0.00020 J	< 0.20 J	< 0.20 J	< 0.00050 J	< 0.20 J	< 0.00040 J
D-16dg	2002-08-15	D-16dg;D-16(dg);20020815																													
D-16dg	2003-08-25	D-16dg;D-16(dg);20030825																													
D-16dg	2004-08-23	D-16dg;D-16(dg);20040823																													

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Monitoring and Vapor Well Decommissioning Work Plan
Groundwater VOC Results Summary
East Multnomah County TSA Remedy

Location	Date Sampled	Sample Identification	Ethyl Chloride	Ethylbenzene	Ethylene	Fluoride	Freon 11	Freon 113	Freon 12	Hexachlorobutadiene (HCBD)	Isopropylbenzene	Methyl Bromide	Methyl butyl ketone	Methyl ethyl ketone	Methyl Isobutyl Ketone (MIBK)	Methyl tert-Butyl Ether (MTBE)	Methylene Chloride (DCM)	Naphthalene	n-Propylbenzene	o-Chlorotoluene	p-Chlorotoluene	p-Cymene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Vinyl 2-Chloroethyl ether	Vinyl Acetate	Xylenes, Total
D-16dg	2005-08-15	D-16dg;D-16(dg);20050815																													
D-16dg	2006-08-16	D-16dg;D-16(dg);20060816																													
D-16dg	2007-08-16	D-16dg;D-16(dg);20070816																													
D-16ds	1993-09-08	D-16ds;;19930908	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16ds	1993-11-30	D-16ds;;19931130	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16ds	1993-11-30	D-16ds;;19931130	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16ds	1994-02-15	D-16ds;;19940215	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16ds	1994-03-03	D-16ds;;19940303	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0010	< 1.0	< 0.0020
D-16ds	1994-05-25	D-16ds;;19940525	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16ds	1994-08-11	D-16ds;;19940811	< 0.20	< 0.00020			< 0.20					< 0.20					< 0.50							< 0.00020		< 0.00020	< 0.20	< 0.20			< 0.00020
D-16ds	1994-09-01	D-16ds;BLA PT;19940901	< 0.20	< 0.00020			< 0.20					< 0.20					< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20			< 0.00020
D-16ds	1994-09-29	D-16ds;BLA PT;19940929	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16ds	1994-10-28	D-16ds;;19941028	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0020
D-16ds	1994-11-22	D-16ds;SGA PT;19941122	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16ds	1995-01-03	D-16ds;SGA PT;19950103	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
D-16ds	1995-02-14	D-16ds;;19950214	< 0.20	< 0.00020			< 0.20					< 0.20					< 0.20							< 0.00020		0.00063	< 0.20	< 0.20			< 0.00020
D-16ds	1995-08-15	D-16ds;;19950815	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-16ds	1996-02-16	D-16ds;;19960216	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	0.0060	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16ds	1996-08-05	D-16ds;;19960805	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16ds	1996-09-11	D-16ds;BLA PT;19960911	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16ds	1996-09-18	D-16ds;BLA PT;19960918	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16ds	1996-09-25	D-16ds;BLA PT;19960925	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16ds	1996-10-01	D-16ds;BLA PT;19961001	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-16ds	1996-10-17	D-16ds;TSA PT;19961017	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-16ds	1996-10-24	D-16ds;TSA PT;19961024	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-16ds	1997-02-24	D-16ds;;19970224	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.010	< 5.0	< 0.0010
D-16ds	1998-02-16	D-16ds;;19980216	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16ds	1998-08-11	D-16ds;;19980811	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16ds	1999-08-14	D-16ds;;19990814	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16ds	2000-08-21	D-16ds;TSA27-0800;20000821	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-16ds	2001-08-17	D-16ds;BOPTSA28;20010817	< 0.20 J	< 0.00020 J			< 0.20 J	< 0.20 J				< 0.20 J	< 1.0 J	< 0.0010 J	< 0.0010 J		< 0.30 J							< 0.00020 J		< 0.00020 J	< 0.20 J	< 0.20 J	< 0.00050 J	< 0.20 J	< 0.00040 J
D-16ds	2002-08-15	D-16ds;D-16(ds);20020815																													
D-16ds	2003-08-25	D-16ds;D-16(ds);20030825																													
D-16ds	2004-08-23	D-16ds;D-16(ds);20040823																													
D-16ds	2005-08-15	D-16ds;D-16(ds);20050815																													
D-16ds	2006-08-16	D-16ds;D-16(ds);20060816																													
D-16ds	2007-08-16	D-16ds;D-16(ds);20070816																													
D-16ds	2008-08-11	D-16ds;D-16(ds);20080811																													
D-16ds	2009-08-13	D-16ds;D-16(ds);20090813																													
D-16ds	2011-08-10	D-16ds;D-16ds;20110810																													
D-16ds	2013-08-20	D16DS-082013	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
D-16ds	2013-08-20	D16DS-082013-D	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
D-16ds	2015-08-04	D-16DS-080415	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
D-18dg	1995-05-10	D-18dg;;19950510	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-18dg	1995-06-07	D-18dg;;19950607	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-18dg	1995-08-15	D-18dg;;19950815	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	0.059	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-18dg	1995-11-07	D-18dg;;19951107	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18dg	1996-02-08	D-18dg;;19960208	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18dg	1996-02-15	D-18dg;;19960215	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18dg	1996-08-06	D-18dg;;19960806	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18dg	1997-02-13	D-18dg;;19970213	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18dg	1997-02-13	D-18dg;;19970213	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18dg	1998-02-18	D-18dg;;19980218	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18dg	1998-08-11	D-18dg;;19980811	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18dg	1999-08-17	D-18dg;;19990817	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	0.0011	< 0.0010		< 0.30							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18dg	2000-08-22	D-18dg;TSA32-0800;20000822	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18dg	2001-08-21	D-18dg;BOPTSA33;20010821	< 0.20 J	< 0.00020 J			< 0.20 J	< 0.20 J				< 0.20 J	< 1.0 J	< 0.0010 J	< 0.0010 J		< 0.30 J							< 0.00020 J		< 0.00020 J	< 0.20 J	< 0.20 J	< 0.00050 J	< 0.20 J	< 0.00040 J
D-18dg	2002-08-19	D-18dg;D-18(dg);20020819																													
D-18dg	2003-08-26	D-18dg;D-18(dg);20030826																													
D-18dg	2004-08-23	D-18dg;D-18(dg);20040823																													
D-18dg	2005-08-15	D-18dg;D-18(dg);20050815																													
D-18dg	2006-10-16	D-18dg;D-18(dg);20061016																													
D-18dg	2007-08-16	D-18dg;D-18(dg);20070816																													
D-18dg	2010-01-06	D-18dg;D-18(dg);20100106																													
D-18dg	2010-01-06	D-18dg;D-18(dg);20100106-U																													
D-18ds	1995-05-10	D-18ds;;19950510	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	0.012	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-18ds	1995-06-07	D-18ds;;19950607	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	0.022	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-18ds	1995-08-15	D-18ds;;19950815	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
D-18ds	1995-11-07	D-18ds;;19951107	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18ds	1996-02-08	D-18ds;;19960208	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18ds	1996-02-15	D-18ds;;19960215	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18ds	1996-08-06	D-18ds;;19960806	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18ds	1997-02-13	D-18ds;;19970213	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0							< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
D-18ds	1998-02-16	D-18ds;;19980216	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18ds	1998-08-10	D-18ds;;19980810	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18ds	1999-08-17	D-18ds;;19990817	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18ds	2000-08-22	D-18ds;TSA31-0800;20000822	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30							< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
D-18ds	2001-08-21	D-18ds;BOPTSA32;20010821	< 0.20 J	< 0.00020 J			< 0.20 J	< 0.20 J				< 0.20 J	< 1.0 J	< 0.0010 J	< 0.0010 J		< 0.30 J							< 0.00020 J		< 0.00020 J	< 0.20 J	< 0.20 J	< 0.00050 J	< 0.20 J	< 0.00040 J
D-18ds	2001-11-13	D-18ds;D-18(ds);20011113																													
D-18ds	2002-02-18	D-18ds;D-18(ds);20020218																													
D-18ds	2002-05-06	D-18ds;D-18(ds);20020506																													

Table 2
Monitoring and Vapor Well Decommissioning Work Plan
Groundwater VOC Results Summary
East Multnomah County TSA Remedy

Location	Date Sampled	Sample Identification	Ethyl Chloride	Ethylbenzene	Ethylene	Fluoride	Freon 11	Freon 113	Freon 12	Hexachlorobutadiene (HCBD)	Isopropylbenzene	Methyl Bromide	Methyl butyl ketone	Methyl ethyl ketone	Methyl Isobutyl Ketone (MIBK)	Methyl tert-Butyl Ether (MTBE)	Methylene Chloride (DCM)	Naphthalene	n-Propylbenzene	o-Chlorotoluene	p-Chlorotoluene	p-Cymene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Vinyl 2-Chloroethyl ether	Vinyl Acetate	Xylenes, Total
D-18ds	2002-08-19	D-18ds;D-18(ds);20020819																													
D-18ds	2003-08-21	D-18ds;D-18(ds);20030821																													
D-18ds	2004-02-09	D-18ds;D-18(ds);20040209																													
D-18ds	2004-08-23	D-18ds;D-18(ds);20040823																													
D-18ds	2005-02-15	D-18ds;D-18(ds);20050215																													
D-18ds	2005-08-07	D-18ds;D-18(ds);20050807																													
D-18ds	2006-02-06	D-18ds;D-18(ds);20060206																													
D-18ds	2006-02-06	D-18ds;D-18(ds);20060206																													
D-18ds	2006-05-10	D-18ds;D-18(ds);20060510																													
D-18ds	2006-05-10	D-18ds;D-18(ds);20060510																													
D-18ds	2006-08-16	D-18ds;D-18(ds);20060816																													
D-18ds	2007-08-16	D-18ds;D-18(ds);20070816																													
D-18ds	2008-08-11	D-18ds;D-18(ds);20080811																													
D-18ds	2009-08-13	D-18ds;D-18(ds);20090813																													
D-18ds	2010-08-10	D-18ds;D-18(ds);20100810																													
D-18ds	2011-08-10	D-18ds;D-18ds;20110810																													
D-18ds	2013-08-20	D18DS-082013	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
D-18ds	2015-08-04	D-18DS-080415	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
D-18ds	2015-08-04	D-18DS-080415-DUP	< 5.0	< 0.0010			< 5.0	< 1.0	< 5.0	< 0.0010	< 0.0010	< 5.0		< 0.010	< 0.010	< 0.0010	< 5.0	< 0.0050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0050	< 1.0	< 1.0			< 0.0030
RPW-1ds	1993-09-18	RPW-1ds;RPW-2 PT;19930918					1.0																								
RPW-1ds	1993-09-18	RPW-1ds;RPW-2 PT;19930918					1.0																								
RPW-1ds	1993-09-29	RPW-1ds;RPW-2 PT;19930929																													
RPW-1ds	1993-09-29	RPW-1ds;RPW-2 PT;19930929																													
RPW-1ds	1993-10-08	RPW-1ds;RPW-2 PT;19931008																													
RPW-1ds	1993-10-08	RPW-1ds;RPW-2 PT;19931008																													
RPW-1ds	1993-10-12	RPW-1ds;RPW-2 PT;19931012																													
RPW-1ds	1993-12-29	RPW-1ds;;19931229																													
RPW-1ds	1994-04-01	RPW-1ds;;19940401	< 0.50				< 0.50	< 0.50				< 0.50					< 5.0										< 0.50	< 0.50	< 0.0050		
RPW-1ds	1994-06-27	RPW-1ds;;19940627	< 0.50				< 0.50	< 0.50				< 0.50					< 5.0										< 0.50	< 0.50	< 0.0050		
RPW-1ds	1994-06-27	RPW-1ds;;19940627	< 0.50				< 0.50	< 0.50				< 0.50					< 5.0										< 0.50	< 0.50	< 0.0050		
RPW-1ds	1994-08-02	RPW-1ds;;19940802	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	7.6	0.0083		< 2.0								< 0.0010		0.34	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
RPW-1ds	1994-08-23	RPW-1ds;;19940823	< 0.50				< 0.50	< 0.50				< 0.50					< 1.0											< 0.50	< 0.50	< 0.0050		
RPW-1ds	1994-09-01	RPW-1ds;BLA PT;19940901	< 0.20	< 0.00020			< 0.20					< 0.20					< 0.20								< 0.00020		0.034	< 0.20	< 0.20			0.00030
RPW-1ds	1994-09-15	RPW-1ds;BLA PT;19940915	< 0.20	< 0.00020			< 0.20					< 0.20					< 0.20								< 0.00020		0.084	< 0.20	< 0.20			0.00102
RPW-1ds	1994-09-29	RPW-1ds;BLA PT;19940929	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
RPW-1ds	1994-10-13	RPW-1ds;BLA PT;19941013	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		0.0064 J	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
RPW-1ds	1994-10-13	RPW-1ds;BLA PT;19941013	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		0.029 J	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0020
RPW-1ds	1994-10-27	RPW-1ds;;19941027	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		0.022	< 1.0	< 1.0		< 5.0	< 0.0020
RPW-1ds	1995-02-20	RPW-1ds;;19950220	< 0.20	< 0.00020			< 0.20					< 0.20					< 0.20								< 0.00020		< 0.00020	< 0.20	< 0.20			< 0.00020
RPW-1ds	1995-05-24	RPW-1ds;;19950524	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
RPW-1ds	1995-08-15	RPW-1ds;;19950815	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0	< 0.0050	< 5.0	< 0.0010
RPW-1ds	1995-11-06	RPW-1ds;;19951106	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-02-21	RPW-1ds;Boeing;19960221	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-05-30	RPW-1ds;;19960530	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-08-19	RPW-1ds;;19960819	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-09-11	RPW-1ds;BLA PT;19960911	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-09-19	RPW-1ds;BLA PT;19960919	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-09-26	RPW-1ds;BLA PT;19960926	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1996-10-02	RPW-1ds;BLA PT;19961002	< 2.0	< 0.0010			< 2.0	< 2.0				< 2.0	< 5.0	< 0.0050	< 0.0050		< 2.0								< 0.0010		< 0.0010	< 1.0	< 1.0		< 5.0	< 0.0010
RPW-1ds	1998-02-17	RPW-1ds;;19980217	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
RPW-1ds	1998-08-19	RPW-1ds;;19980819	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.20								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
RPW-1ds	1999-08-18	RPW-1ds;;19990818	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
RPW-1ds	2000-08-21	RPW-1ds;TSA33-0800;20000821	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
RPW-1ds	2001-08-23	RPW-1ds;BOPTSA35;20010823	< 0.20	< 0.00020			< 0.20	< 0.20				< 0.20	< 1.0	< 0.0010	< 0.0010		< 0.30								< 0.00020		< 0.00020	< 0.20	< 0.20	< 0.00050	< 0.20	< 0.00040
RPW-1ds	2002-08-20	RPW-1ds;RPW-1(ds);20020820																													
RPW-1ds	2003-08-19	RPW-1ds;RPW-1(ds);20030819																													
RPW-1ds	2004-08-24	RPW-1ds;RPW-1(ds);20040824																													
RPW-1ds	2005-08-15	RPW-1ds;RPW-1(ds);20050815																													
RPW-1ds	2006-02-20	RPW-1ds;RPW-1(ds);20060220-L																													
RPW-1ds	2006-05-10	RPW-1ds;RPW-1(ds);20060510-L																													
RPW-1ds	2006-08-16	RPW-1ds;RPW-1(ds);20060816																													
RPW-1ds	2006-02-20	RPW-1ds;RPW-1(ds);20060220																													
RPW-1ds	2006-05-10	RPW-1ds;RPW-1(ds);20060510																													
RPW-1ds	2006-02-20	RPW-1ds;RPW-1(ds);20060220-U																													
RPW-1ds	2006-05-10	RPW-1ds;RPW-1(ds);20060510-U																													
RPW-1ds	2006-08-16	RPW-1ds;RPW-1(ds);20060816-U																													

Table 3
Monitoring and Vapor Well Decommissioning Work Plan
Soil Vapor VOC Results Summary
East Multnomah County TSA Remedy

Location	Depth	Date Sampled	Analyte	Trichloroethene (TCE)	Tetrachloroethene (PCE)	cis-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Butadiene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,4-Dioxane	1-Ethyl-4-methylbenzene	2,2,4-Trimethylpentane (Isoctane)	3-Chloropropene	Acetone	Benzene	Benzyl Chloride	Bromoform
VW-17d-42.5	37.5	2014-07-08	VW-17D-42.5-070914-0HR	1100	120	310	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	< 40	27	< 2.1	< 12
VW-17d-42.5	37.5	2014-07-09	VW-17D-42.5-070914-4HR	2800	160	290	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	2.0	< 2.0	< 1.9	< 1.3	93 J	1.4	< 2.1	< 12
VW-17d-42.5	37.5	2014-07-10	VW-17D-42.5-071014-24HR	2100	120	210	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	43 J	< 1.3	< 2.1	< 12
VW-17d-42.5	37.5	2014-07-12	VW-17D-42.5-071214-72HR	1300	68	130	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	< 40	22	< 2.1	< 12
VW-17d-42.5	37.5	2014-07-16	VW-17D-42.5-071614-168HR	1100	120	160	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	62 J	< 1.3	< 2.1	< 12
VW-17d-42.5	37.5	2014-07-23	VW-17D-42.5-072314-REBOUND	1900	130	290	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 7.4	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	< 40	1.6	< 2.1	< 12
VW-17d-42.5	37.5	2015-04-28	VW17D-42.5-042815	2800	97	390	< 7.3					< 7.3																		
VW-17d-42.5	37.5	2015-07-28	VW17D-42.5-072815	1200	54	150	< 0.86					< 0.86																		
VW-17d-42.5	37.5	2015-10-27	VW17d-42.5-102715	1200	53	130	< 6.8					< 6.8																		
VW-17d-42.5	37.5	2015-11-30	VW 17d 42.5 - 113015	31	< 1.9	3.6	< 1.9					< 1.9																		
VW-17d-42.5	37.5	2016-01-26	VW17d-42.5-012616	< 2.1	< 2.1	< 2.1	< 2.1					< 2.1																		
VW-17d-42.5	37.5	2016-03-15	VW17d 42.5-0.031516	17	13	2.6	< 2.0					< 2.0																		
VW-17d-42.5	37.5	2016-06-21	VW17d-42.5-062116	440	25	72	< 2.3					< 2.3																		
VW-17d-75.0	55	2014-07-08	VW-17D-75-070814-0HR	< 2.1	< 2.7	< 1.6	< 1.0	< 2.2	< 2.8	< 2.2	< 1.6	< 1.6	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	50 J	< 1.3	< 2.1	< 12
VW-17d-75.0	55	2014-07-08	VW-17D-75-070814-4HR	5900	670	260	< 2.0	< 4.4	< 5.5	< 4.4	< 3.2	9.1	< 19	< 7.4	< 6.2	< 4.8	< 3.2	< 3.7	< 3.9	< 18	< 4.8	< 4.8	< 2.9	< 3.9	< 3.7	< 2.5	200	3.5	< 4.2	< 25
VW-17d-75.0	55	2014-07-10	VW-17D-75-071014-24HR	8000	1100 J	480 J	< 4.1	< 8.7	< 11	< 8.7	< 6.4	14 J	< 37	390 J	< 12	< 9.6	< 6.5	< 7.4	240 J	< 35	< 9.6	< 9.6	< 5.8	64 J	< 7.5	< 5.0	< 40 J	< 5.1	< 8.3	< 50
VW-17d-75.0	55	2014-07-10	DUP#2-071014	8600	750 J	280 J	< 1.0	3.9	< 2.8	< 2.2	< 1.6	10 J	< 9.3	< 2.0 J	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0 J	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0 J	< 1.9	< 1.3	48 J	< 1.3	< 2.1	< 12
VW-17d-75.0	55	2014-07-12	VW-17D-75-071214-72HR	8600	680	270	< 4.1	< 8.7	< 11	< 8.7	< 6.4	7.1	< 37	< 7.9	< 12	< 9.6	< 6.5	< 7.4	< 7.9	< 35	< 9.6	< 9.6	< 5.8	< 7.9	< 7.5	< 5.0	< 24	< 5.1	< 8.3	< 50
VW-17d-75.0	55	2014-07-16	VW-17D-75-071614-168HR	4400	530	520	< 2.0	< 4.4	< 5.5	< 4.4	< 3.2	5.2	< 19	< 3.9	< 6.2	< 4.8	< 3.2	< 3.7	< 3.9	< 18	< 4.8	< 4.8	< 2.9	< 3.9	< 3.7	< 2.5	< 40	< 2.6	< 4.2	< 25
VW-17d-75.0	55	2014-07-23	VW-17D-75-072314-REBOUND	3100	260	270	< 1.0	3.9	< 2.8	< 2.2	< 1.6	5.9	< 9.3	< 2.0	< 3.1	< 2.4	< 1.6	< 1.9	< 2.0	< 8.9	< 2.4	< 2.4	< 1.4	< 2.0	< 1.9	< 1.3	74 J	1.9	< 2.1	< 12
VW-17d-75.0	55	2015-04-28	VW17D-75.0-042815	4500	260	400	< 16					< 16																		
VW-17d-75.0	55	2015-07-28	VW17D-75.0-072815	950	140	150	< 0.87					< 0.87																		
VW-17d-75.0	55	2015-10-27	VW17d-75-102715	520	120	70	< 1.9					< 1.9																		
VW-17d-75.0	55	2015-11-30	VW 17d 75.0 - 113015	710	120	53	< 3.8					< 3.8																		
VW-17d-75.0	55	2016-01-26	VW17d-75-012616	1600	120	58	< 9.8					< 9.8																		
VW-17d-75.0	55	2016-03-15	VW17d 75.0-0.031516	550	93	52	< 3.2					< 3.2																		
VW-17d-75.0	55	2016-06-21	VW17d-75-062116	< 2.2	< 2.2	< 2.2	< 2.2					< 2.2																		

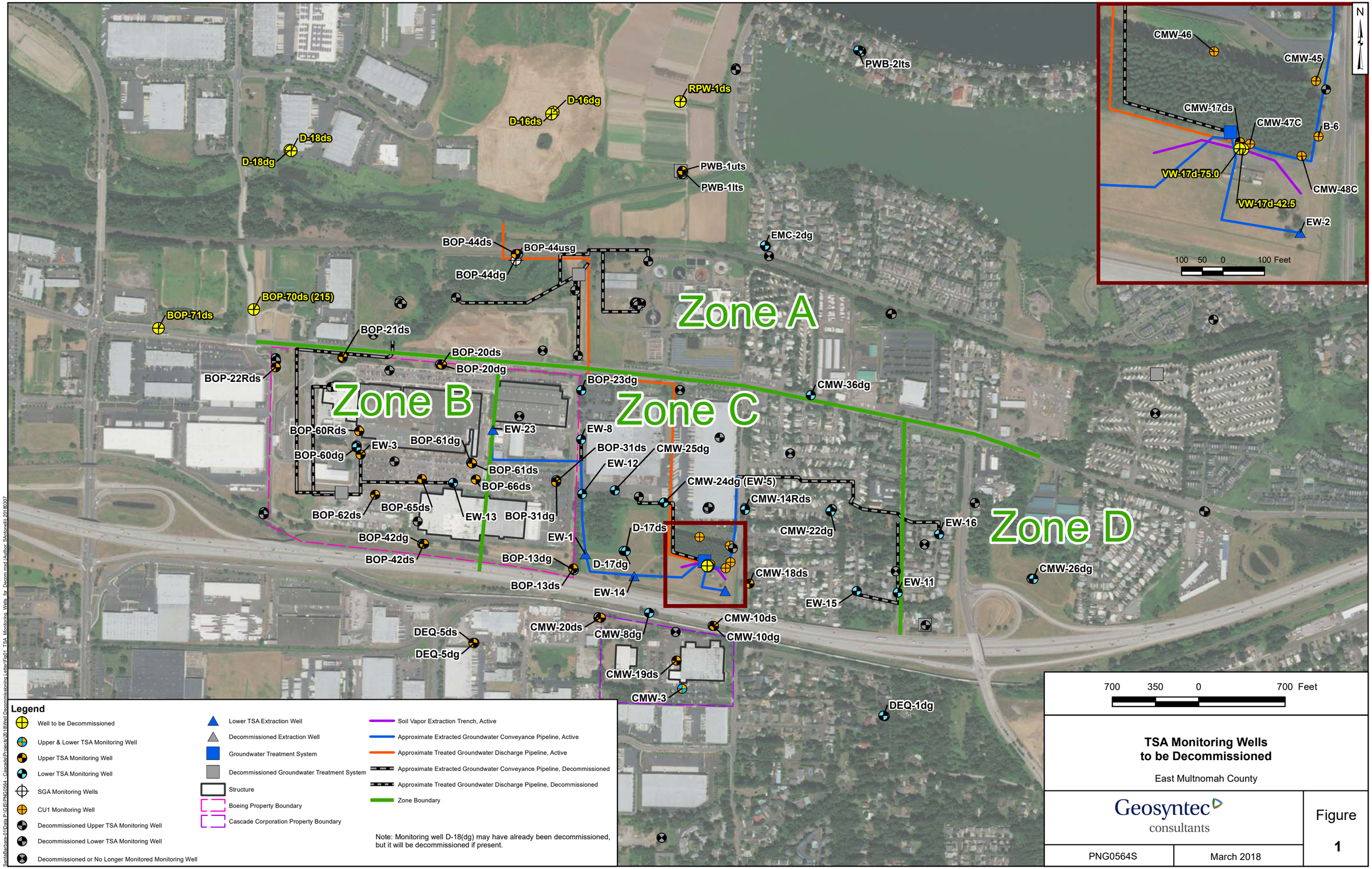
Table 3
Monitoring and Vapor Well Decommissioning Work Plan
Soil Vapor VOC Results Summary
East Multnomah County TSA Remedy

Location	Depth	Date Sampled	Analyte	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroform	Chloromethane	cis-1,3-Dichloropropene	Cyclohexane	Dichlorobromomethane	Ethanol	Ethyl Chloride	Ethylbenzene	Freon 11	Freon 113	Freon 114	Freon 12	Heptane	Hexachlorobutadiene (HCBD)	Hexane	Isopropyl Alcohol	Isopropylbenzene	m&p-Xylenes	Methyl Bromide	Methyl butyl ketone	Methyl ethyl ketone	Methyl Isobutyl Ketone (MIBK)	methyl methacrylate
VW-17d-42.5	37.5	2014-07-08	VW-17D-42.5-070914-0HR	< 1.2	< 2.5	< 1.9	< 3.4	10 J	< 5.8	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	< 2.0	< 1.6	< 14	< 1.4	< 6.2	18	< 3.5	< 1.6	< 10	8.3	< 10	< 1.6
VW-17d-42.5	37.5	2014-07-09	VW-17D-42.5-070914-4HR	< 1.2	< 2.5	< 1.9	< 3.4	12 J	< 0.83	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	2.6 J	< 1.6	< 14	< 1.4	< 6.2	4.4	< 3.5	< 1.6	< 10	12	< 10	< 1.6
VW-17d-42.5	37.5	2014-07-10	VW-17D-42.5-071014-24HR	< 1.2	< 2.5	< 1.9	< 3.4	8.3 J	< 0.83	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	2.2 J	< 1.6	< 14	< 1.4	< 6.2	2.5	< 3.5	< 1.6	< 10	8.6	< 10	< 1.6
VW-17d-42.5	37.5	2014-07-12	VW-17D-42.5-071214-72HR	< 1.2	< 2.5	< 1.9	< 3.4	4.1 J	< 5.8	< 1.8	3.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	3.0 J	1.9	< 14	< 53	< 6.2	19	< 3.5	< 1.6	< 10	< 7.4	< 10	< 1.6
VW-17d-42.5	37.5	2014-07-16	VW-17D-42.5-071614-168HR	< 1.2	< 2.5	< 1.9	< 3.4	7.8 J	< 0.83	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	5.9 J	< 1.6	< 14	< 1.4	34	5.4	< 3.5	< 1.6	< 10	13	< 10	< 1.6
VW-17d-42.5	37.5	2014-07-23	VW-17D-42.5-072314-REBOUND	< 1.2	< 2.5	< 1.9	< 3.4	8.3 J	< 0.83	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	4.9 J	< 1.6	< 14	< 53	< 6.2	4.3	< 3.5	< 1.6	< 10	< 7.4	< 10	120
VW-17d-42.5	37.5	2015-04-28	VW17D-42.5-042815																											
VW-17d-42.5	37.5	2015-07-28	VW17D-42.5-072815																											
VW-17d-42.5	37.5	2015-10-27	VW17d-42.5-102715																											
VW-17d-42.5	37.5	2015-11-30	VW 17d 42.5 - 113015																											
VW-17d-42.5	37.5	2016-01-26	VW17d-42.5-012616																											
VW-17d-42.5	37.5	2016-03-15	VW17d 42.5-0.031516																											
VW-17d-42.5	37.5	2016-06-21	VW17d-42.5-062116																											
VW-17d-75.0	55	2014-07-08	VW-17D-75-070814-0HR	< 1.2	< 2.5	< 1.9	< 3.4	< 2.0	< 5.8	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	< 2.3	< 3.1	< 2.8	3.1 J	< 1.6	< 14	< 1.4	< 6.2	< 2.0	< 3.5	< 1.6	< 10	< 7.4	< 10	< 1.6
VW-17d-75.0	55	2014-07-08	VW-17D-75-070814-4HR	< 2.5	< 5.0	< 3.7	< 6.8	< 3.9	< 1.7	< 3.6	< 2.8	< 5.4	110 J	< 2.1	< 3.5	9.6	< 6.1	< 5.6	4.6 J	< 3.3	< 27	< 53	13	21	9.5	< 3.1	< 20	29	< 21	< 3.3
VW-17d-75.0	55	2014-07-10	VW-17D-75-071014-24HR	< 5.0	< 10	< 7.4	< 14	< 7.8	< 3.3	< 7.3	59 J	< 11	< 53	< 4.2	< 6.9	18 J	< 12	< 11	< 7.9	26 J	< 54	260 J	< 25	< 7.9	160 J	< 6.2	< 41	< 30	< 41	< 6.6
VW-17d-75.0	55	2014-07-10	DUP#2-071014	< 1.2	< 2.5	< 1.9	< 3.4	3.4 J	< 0.83	< 1.8	< 1.4 J	< 2.7	< 53	< 1.1	< 1.7	13 J	< 3.1	< 2.8	3.3 J	< 1.6 J	< 14	< 1.4 J	< 6.2	2.3	< 3.5 J	< 1.6	< 10	8.3	< 10	< 1.6
VW-17d-75.0	55	2014-07-12	VW-17D-75-071214-72HR	< 5.0	< 10	< 7.4	< 14	< 7.8	< 3.3	< 7.3	< 5.5	< 11	< 53	< 4.2	< 6.9	11	< 12	< 11	< 7.9	< 6.5	< 54	< 5.6	< 25	23	< 14	< 6.2	< 41	< 30	< 41	< 6.6
VW-17d-75.0	55	2014-07-16	VW-17D-75-071614-168HR	< 2.5	< 5.0	< 3.7	< 6.8	9.7 J	< 1.7	< 3.6	< 2.8	< 5.4	58 J	< 2.1	< 3.5	13	< 6.1	< 5.6	4.6 J	< 3.3	< 27	< 2.8	15	< 3.9	< 6.9	< 3.1	< 20	< 15	< 21	< 3.3
VW-17d-75.0	55	2014-07-23	VW-17D-75-072314-REBOUND	< 1.2	< 2.5	< 1.9	< 3.4	11 J	< 0.83	< 1.8	< 1.4	< 2.7	< 53	< 1.1	< 1.7	15	< 3.1	< 2.8	5.4 J	< 1.6	< 14	< 1.4	6.1	6.4	< 3.5	< 1.6	11	41	< 10	< 1.6
VW-17d-75.0	55	2015-04-28	VW17D-75.0-042815																											
VW-17d-75.0	55	2015-07-28	VW17D-75.0-072815																											
VW-17d-75.0	55	2015-10-27	VW17d-75-102715																											
VW-17d-75.0	55	2015-11-30	VW 17d 75.0 - 113015																											
VW-17d-75.0	55	2016-01-26	VW17d-75-012616																											
VW-17d-75.0	55	2016-03-15	VW17d 75.0-0.031516																											
VW-17d-75.0	55	2016-06-21	VW17d-75-062116																											

Table 3
Monitoring and Vapor Well Decommissioning Work Plan
Soil Vapor VOC Results Summary
East Multnomah County TSA Remedy

Location	Depth	Date Sampled	Analyte	Methyl tert-Butyl Ether (MTBE)	Methylene Chloride (DCM)	Naphthalene	o-Chlorotoluene	o-Xylene	Propylene	Styrene	Tetrahydrofuran	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Vinyl Acetate	Vinyl Bromide
VW-17d-42.5	37.5	2014-07-08	VW-17D-42.5-070914-0HR	< 1.4	< 1.4	< 6.6	< 2.1	< 1.7	< 1.4	< 1.7	< 1.2	7.9 J	< 1.6	< 1.8	< 1.4	< 1.8
VW-17d-42.5	37.5	2014-07-09	VW-17D-42.5-070914-4HR	< 1.4	< 1.4	< 6.6	< 2.1	< 1.7	< 1.4	< 1.7	< 1.2	9.4 J	< 1.6	< 1.8	< 1.4	< 1.8
VW-17d-42.5	37.5	2014-07-10	VW-17D-42.5-071014-24HR	< 1.4	< 1.4	< 6.6	< 2.1	< 1.7	2.9 J	< 1.7	< 1.2	< 5.3	< 1.6	< 1.8	< 1.4	< 1.8
VW-17d-42.5	37.5	2014-07-12	VW-17D-42.5-071214-72HR	< 1.4	< 42	< 6.6	< 2.1	< 1.7	< 1.4	< 1.7	< 1.2	< 5.3	< 1.6	< 1.8	< 1.4	< 1.8
VW-17d-42.5	37.5	2014-07-16	VW-17D-42.5-071614-168HR	< 1.4	< 1.4	< 6.6	< 2.1	< 1.7	< 1.4	< 1.7	< 1.2	< 5.3	< 1.6	< 1.8	< 1.4	< 1.8
VW-17d-42.5	37.5	2014-07-23	VW-17D-42.5-072314-REBOUND	< 1.4	< 42	< 6.6	< 2.1	< 1.7	< 2.9	< 1.7	< 1.2	< 5.3	1.6	< 1.8	< 1.4	< 1.8
VW-17d-42.5	37.5	2015-04-28	VW17D-42.5-042815													
VW-17d-42.5	37.5	2015-07-28	VW17D-42.5-072815													
VW-17d-42.5	37.5	2015-10-27	VW17d-42.5-102715													
VW-17d-42.5	37.5	2015-11-30	VW 17d 42.5 - 113015													
VW-17d-42.5	37.5	2016-01-26	VW17d-42.5-012616													
VW-17d-42.5	37.5	2016-03-15	VW17d 42.5-0.031516													
VW-17d-42.5	37.5	2016-06-21	VW17d-42.5-062116													
VW-17d-75.0	55	2014-07-08	VW-17D-75-070814-0HR	< 1.4	< 1.4	< 6.6	< 2.1	< 1.7	< 1.4	< 1.7	< 1.2	< 5.3	< 1.6	< 1.8	< 1.4	< 1.8
VW-17d-75.0	55	2014-07-08	VW-17D-75-070814-4HR	< 2.9	< 2.8	< 13	< 4.1	< 3.5	< 2.8	< 3.4	< 2.4	60	8.3	< 3.6	< 2.8	< 3.5
VW-17d-75.0	55	2014-07-10	VW-17D-75-071014-24HR	< 5.8	< 5.6	< 26	< 8.3	17 J	< 5.5	< 6.8	< 4.7	17 J	15	< 7.3	< 5.6	< 7.0
VW-17d-75.0	55	2014-07-10	DUP#2-071014	< 1.4	< 42	< 6.6	< 2.1	< 1.7 J	< 2.9	< 1.7	< 1.2	< 5.3 J	12	< 1.8	< 1.4	< 1.8
VW-17d-75.0	55	2014-07-12	VW-17D-75-071214-72HR	< 5.8	< 5.6	< 26	< 8.3	< 6.9	< 5.5	< 6.8	< 4.7	< 6.0	10	< 7.3	< 5.6	< 7.0
VW-17d-75.0	55	2014-07-16	VW-17D-75-071614-168HR	< 2.9	< 2.8	< 13	< 4.1	< 3.5	< 2.8	< 3.4	< 2.4	37	15	< 3.6	< 2.8	< 3.5
VW-17d-75.0	55	2014-07-23	VW-17D-75-072314-REBOUND	< 1.4	< 1.4	< 6.6	< 2.1	< 1.7	3.1 J	< 1.7	< 1.2	< 1.5	17	< 1.8	< 1.4	< 1.8
VW-17d-75.0	55	2015-04-28	VW17D-75.0-042815													
VW-17d-75.0	55	2015-07-28	VW17D-75.0-072815													
VW-17d-75.0	55	2015-10-27	VW17d-75-102715													
VW-17d-75.0	55	2015-11-30	VW 17d 75.0 - 113015													
VW-17d-75.0	55	2016-01-26	VW17d-75-012616													
VW-17d-75.0	55	2016-03-15	VW17d 75.0-0.031516													
VW-17d-75.0	55	2016-06-21	VW17d-75-062116													

Figure



Legend

- Well to be Decommissioned
- Upper & Lower TSA Monitoring Well
- Upper TSA Monitoring Well
- Lower TSA Monitoring Well
- SGA Monitoring Wells
- CU1 Monitoring Well
- Decommissioned Upper TSA Monitoring Well
- Decommissioned Lower TSA Monitoring Well
- Decommissioned or No Longer Monitored Monitoring Well
- Lower TSA Extraction Well
- Decommissioned Extraction Well
- Groundwater Treatment System
- Decommissioned Groundwater Treatment System
- Structure
- Boeing Property Boundary
- Cascade Corporation Property Boundary
- Soil Vapor Extraction Trench, Active
- Approximate Extracted Groundwater Conveyance Pipeline, Active
- Approximate Treated Groundwater Discharge Pipeline, Active
- Approximate Extracted Groundwater Conveyance Pipeline, Decommissioned
- Approximate Treated Groundwater Discharge Pipeline, Decommissioned
- Zone Boundary

Note: Monitoring well D-18(dg) may have already been decommissioned, but it will be decommissioned if present.

TSA Monitoring Wells to be Decommissioned

East Multnomah County

Geosyntec consultants

PNG0564S | March 2018

Figure 1

SantaBarbara-01\Data P:\GIS\PNG0564 - Cascade\Projects\2018\Well Decommissioning Letter\Fig01_TSA_Monitoring_Wells_for_Decom.mxd (Author: SAntonelli) 2018/3/7

Attachment 1
Well Boring and Exploration Logs

Well VW-17d-42.5

AMENDED 6/15/12

STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0395)

MULT 110009

6/8/2012

WELL I.D. LABEL# L 99270

START CARD # 1015934

(1) LAND OWNER

Owner Well I.D. VW-17D-42.5

First Name _____ Last Name _____

Company CASCADE CORPORATION

Address 2201 NE 201 AVE

City GRESHAM State OR Zip 97024

(2) TYPE OF WORK

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

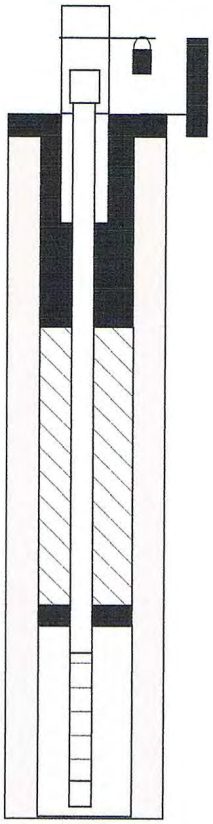
(3) DRILL METHOD

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

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 42.50 ft. Special Standard ☐



MONUMENT/VAULT Above Ground From 0 To 3

BORE HOLE Diameter 12 From 0 To ~~27~~ 25

CASING Dia. ~~8~~ 2 From ☒ 0 +2.8' To ~~27~~ 37.5

Gauge ~~.375~~ sch 40 Wld ☐ Thrd ☐

Material ☒ Steel ☐ Plastic

LINER Dia. _____ From ☐ _____ To _____

Gauge _____ Wld ☐ Thrd ☐

Material ☐ Steel ☐ Plastic

SEAL From 2.5 To 32.5

Material Bentonite Grout

Amount 5 Sacks Grout weight _____

SCREEN Casing/Liner Casing Material PVC

Diameter 2 From 37.5 To 42.5

Slot Size 0.020

FILTER From 36 To 43.7 Material SAND Size of pack 8/12

(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 N N/S Range 3.00 E E/W WM

Sec 29 SE 1/4 of the NE 1/4 Tax Lot 1

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

◉ Street address of well ○ Nearest address

2525 NE 201 AVENUE
GRESHAM, OREGON 97024

(7) STATIC WATER LEVEL

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

WATER BEARING ZONES Flowing Artesian? ☐ Dry Hole? ☒

Depth water was first found _____

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

(8) WELL LOG

Ground Elevation _____

Material	From	To
Silt and Gravel Fill	0	1
Silty, Sandy Gravel & Cobbles	1	10
Sand & Silt	10	19.3
Weathered Silt & Sand	19.3	20.2
Clayey Siltstone	20.2	30.2
Weathered Clayey Siltstone	30.2	35
Sandstone & Siltstone	35	45

Date Started ~~3/1/2012~~ 2/27/12 Completed ~~3/5/2012~~ 3/1/12

(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 10576 Date 6/8/2012

Password : (if filing electronically) _____

Signed AARON J ADAMS (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 10306 Date 6/8/2012

Password : (if filing electronically) _____

Signed J TRENT CASTNER (E-filed)

Contact Info (optional) Boart Longyear

ORIGINAL - WATER RESOURCES DEPARTMENT

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

Form Version:

6/8/2012

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
6	27 25	45

FILTER PACK

From	To	Material	Size

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
Bentonite Chips	32.5	36	1	S	

CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
~~6~~	~~6~~		~~27~~	~~37.5~~	~~.375~~				
8	8		0	27	.375				

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

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

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

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

(8) WELL LOG

Material	From	To

Comments/Remarks

Borehole over-drilled and backfilled with hydrated bentonite pellets
43.7-45
Well installed 42.5'

LITHOLOGIC LOG – VW-17d-42.5

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 1, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
0	NA	NA		FILL	**0.0 - 1.0 ft: Silt and Gravel (GM**) gray, dry, 3/4-minus gravel & silt (FILL).	**FILL**
				GW-GM	**1.0 - 10.0 ft: Well-Graded Silty Sandy Gravel with Cobbles (GW-GM)**, red-brn, moist 1 to 7 ft; WET @ 7 ft; matrix 35-60%, v. fine sa. & low plasticity fines, abundant mica, localized or.-blk matrix discoloration, or.-blk staining along some cobble & gravel faces, weathering rinds around some basaltic gravel; gravel & cobbles predominantly basalt.	**UPPER TGA GRAVEL** 12-in. diam. borehole: 0 to 25 ft
5					**From 1.0 - 8.0 ft:** Matrix 60%, soft to stiff, v. fine sa., few palagonite clay pockets (ligh tan, waxy), WET @ 7 ft; gravel well-graded fine to coarse, cobbles to 6-in., predominantly dense basalt (blk to grn-gray), subrounded, elongate/flat, & subangular; trace quartzite granite, gneiss, cinder, rhyolite & angular basalt.	Groundwater encountered @ 7 ft
					From 8.0 - 10.0 ft: Matrix decreases to 40%, increase in coarse sa., WET; gravel/cobbles increase to 60%, increased proportion of cobbles, fine to med-grained gravel, cobbles to 4.5 in., same composition as above.	
10				ML	**10.0 - 11.0 ft**: **Silt (ML)**, med. brn to light brn, moist, slight plasticity, stiff.	
				SP-SM	**11.0 - 12.0 ft: Poorly-Graded Sand with Silt (SP-SM)**, fine-grained, med. brn, well-cemented to loose, v. dense, WET.	**LOWER TGA SAND AND SILT**
				SM	**12.0 - 15.0 ft: Silty Sand (SM)**, med. brn to dark brn, v. fine-grained sa., 10% non-plastic fines; @ 12-13 ft, loose, WET, low plasticity; @ 13-15 ft, v. well-cemented, massive.	
15				SP-SM	**15.0 - 15.3 ft**: **Poorly-Graded Sand with Silt (SP-SM)**, gray-brn, WET, mod-cemented, dense, med. fine sa.,10% low plasticity fines.	
				SM	**15.3 - 16.0 ft**: **Silty Sand (SM),** med. brn, moist, v. fine sa., low plasticity fines, weathered or.-grn-blk, some med. sa. size white lithics.	
				SW-SM	**16.0 - 19.3 ft**: **Well-Graded Sand with Silt (SW-SM),** fine to coarse lithic sa. (or., white, blk), 10% low plasticity fines, WET, well-cemented, v. dense, few loose horizons; few pockets of higher silt content.	
				SM/ML	**19.3 - 20.2 ft**: **Silty Sand to Sandy Silt (SM/ML)**, highly weathered, light grn-gray to light brn, stiff to soft, extensive or.-red, buff, and red-brn discoloration, texture erratic/irregular, weathering rinds around highly weathered basalt; localized plasticity, some weathered light tan clay (palagonite).	
20						

NOTES: See page 3 of 3 for well construction information.

LITHOLOGIC LOG – VW-17d-42.5

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 1, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
20	NA	NA	0.08	SM/ML	**19.3 - 20.2 ft: Silty Sand to Sandy Silt (SM/ML),** cont'd.	**LOWER TGA SA. & SILT**
			0.15	ML	**20.2 - 23.0 ft: Clayey Siltstone (ML)**, gray-grn, moist, homogeneous, v. stiff, some or. discoloration.	**CONFINING UNIT 1**
			0.09			
			0.05	ML	**23.0 - 25.0 ft: Clayey Silt (ML)**, gray-grn, moist, soft, slight plasticity, homogeneous.	12-in. diam. borehole: 0 to 25 ft.
			0.06			
25			0.34	CL	**25.0 - 26.0 ft: Silty Clay (CL)**, blue-gray, moist, soft, high plasticity.	Stl csg: 0 to 27 ft
			0.35	ML/CL	**26.0 - 26.5 ft: Clayey Silt to Silty Clay (ML/CL)**, mottled dark brn and blue-gray, moist, soft, massive, plagioclase within blue-gray fines.	6-in. diam. borehole: 25 to 45 ft
			0.22			
			0.29	CL	**26.5 - 30.2 ft: Silty Claystone (CL)**, mottled dark brn & dark gray, moist, v. hard, waxy, plagioclase within dark gray fines, some or weathered mottling below 29 ft.	
			0.13			
30			0.13	ML	**30.2 - 33.0 ft: Clayey Silt with Sand (ML),** highly weathered, or.-brn-tan mottled weathering, horizontal preferential partings (1 to 2 in.), weathered along parting faces; @ 31.2 transitions to dark brn & red-brn, moist, stiff to locally soft, irregular/erratic texture, <15% lithic sa., little angular gravel to 2.5 in., trace red cinder gravel.	
			0.08			
			0.13	CL	**33.0 - 33.8 ft: Clay (CL)**, olive-brn & blue-gray, moist, soft, waxy, plastic.	
			<0.05	ML	**33.8 - 35.0 ft: Clayey Siltstone (ML)**, dark brn, hard, mod-cemented thin horizontal planes (<0.5 to 1 in.); or. weathering along parting faces; locally soft, plastic, & WET.	
35			0.13			
			0.05	SM	**35.0 - 41.0 ft: Silty Sandstone (SM)**, dark brn to dark grn-brn, or. mottling, moist, weakly to mod-cemented, preferential parting along horizontal planes (0.5 in.), fine sa., lithic (basalt, cinder, quartzite) & mineral (plagioclase), trace yel-or. palogonite.	
			<0.05			
			<0.05			*VW-17d-42.5 screened from 37.5 to 42.5 ft*
			0.75		**@ 39.0 ft:** change from fine to well-graded sa., increased sa. percentage, moist, varied lithic & mineral composition, per above, few well-cemented thin blk vitric siltstone lenses (<1/4 in).	
			<0.05			
40						

NOTES: See page 3 of 3 for well construction information.

LITHOLOGIC LOG – VW-17d-42.5

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

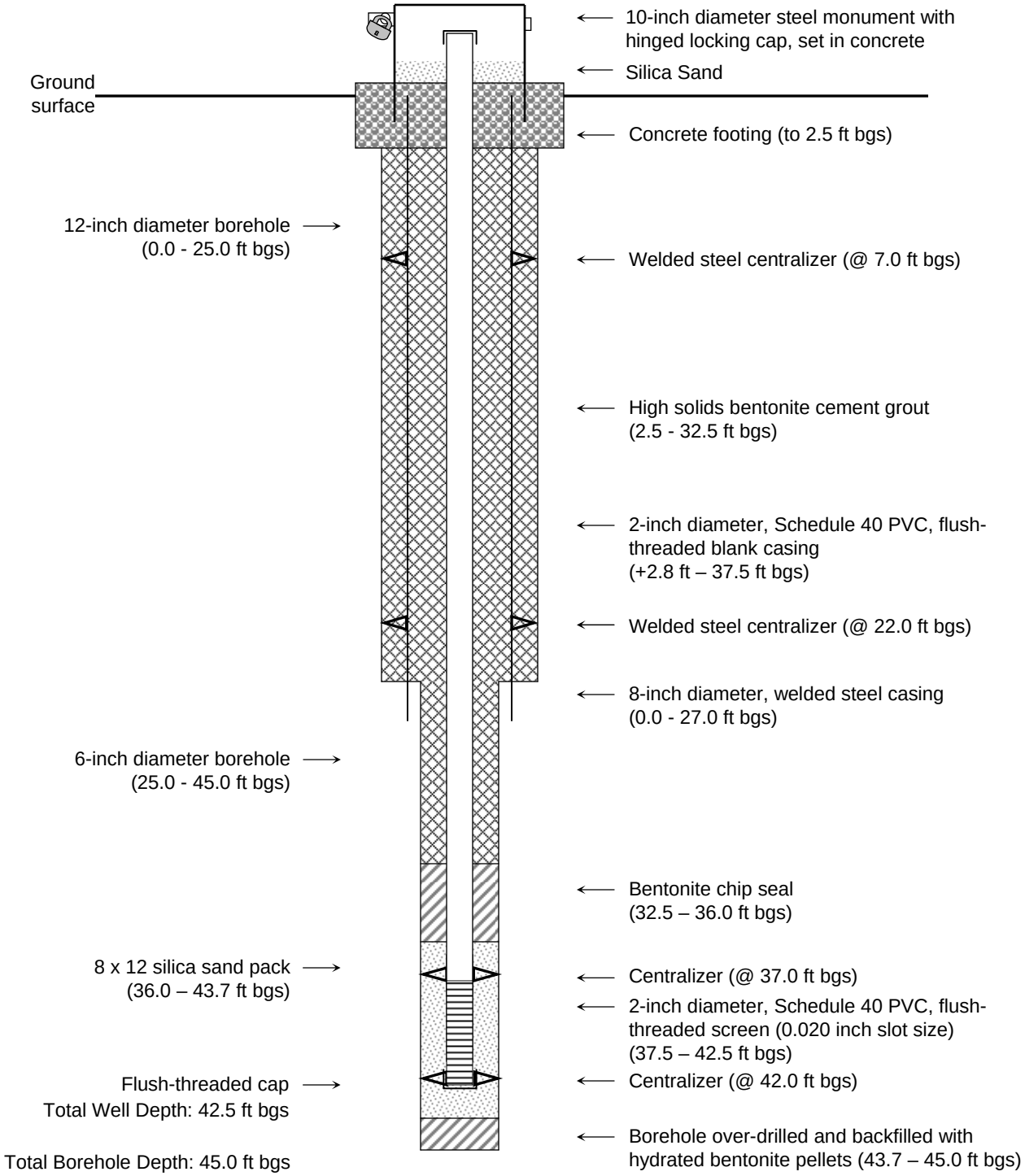
Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 1, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
40	NA	NA		SM	**35.0 - 41.0 ft: Silty Sandstone (SM)**, cont'd.	**CONFINING UNIT 1**
			<0.05			
			<0.05	ML/ SM	**41.0 - 43.0 ft: Siltstone and Sandstone (ML/SM)**, blk vitric thin cemented siltstone lenses interbedded with cemented lithic & blk fine to med. sandstone, damp between cemented lenses.	*VW-17d-42.5 screened from 37.5 to 42.5 ft*
			0.20			
			0.06	ML	**43.0 - 45.0 ft: Sandy Siltstone (ML)**, med. brn to light brn, moist, stiff, weakly-cemented, slight plasticity, v. fine sa. comprised of basalt, weathered lithics (yel-or. palagonite), & plagioclase.	6-in. diam. borehole: 25 to 45 ft
45			<0.05			
50						

Total Drill Depth: 45.0 ft bgs
Total Well Depth: 42.5 ft bgs

Borehole Diameter: 12 inch, 0 - 25.0 ft
Permanent 8" Casing: 0 - 27.0 ft; welded steel
Interaquifer Seal: High solids bentonite grout; 0 - 25.0 ft within annular space; 22.0 - 25.0 ft inside steel csg
Step-down Borehole Diameter: 6 inch, 25.0 - 45.0 ft
Overdrill Interval Seal: Hydrated Coated Bentonite Pellets; 43.7 - 45.0 ft
Well Casing and Screen Material: 2-inch I.D., Schedule 40, flush-threaded PVC with bottom threaded plug
Well Screen: 37.5 - 42.5 ft; 0.02 inch slot size
Filter Sand Pack: 36.0 - 43.7 ft; 8 X 12 clean silica sand
Well Seal: Hydrated Bentonite Chips; 32.5 - 36.0 ft
Well Seal: High Solids Bentonite Grout; 0 - 32.5 ft

NOTES:
Total organic carbon (TOC) analytical method = ASTM D4129-05 MOD by Columbia Analytical Services.



Well Completion Date: March 1, 2012
Drilling Contractor/Method: Boart Longyear / Rotosonic
Ground Surface Elevation: *Approximately 120 ft MSL*
Top of Casing Elevation: *Approximately 123 ft MSL*

Prowell Environmental, Inc., Portland, Oregon.

VW-17d-42.5 Well Details
TSA Remedy – East Multnomah County

Well VW-17d-75.0

STATE OF OREGON MONITORING WELL REPORT

(as required by ORS 537.765 & OR 690-240-0395)

AMENDED 6/15/12

MULT 110008

6/8/2012

WELL I.D. LABEL# L 99269

START CARD # 1015933

(1) LAND OWNER

Owner Well I.D. VW-17D-75.0

First Name _____ Last Name _____

Company CASCADE CORPORATION

Address 2201 NE 201 AVE

City GRESHAM State OR Zip 97024

(2) TYPE OF WORK

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

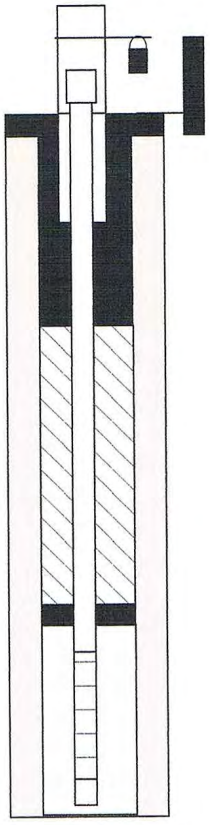
(3) DRILL METHOD

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

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 75.00 ft. Special Standard ☐



MONUMENT/VAULT Above Ground

From 0 To 3

BORE HOLE

Diameter 12 From 0 To ~~27~~ 25

CASING

Dia. ~~8~~ 2 From ☒ ~~0~~ +2.8 To ~~27~~ 55

Gauge ~~.375~~ sch 40 Wld Thrd

Material ☒ Steel ● Plastic ☒ ●

LINER

Dia. _____ From ☐ _____ To _____

Gauge _____ Wld Thrd

Material ○ Steel ○ Plastic ☐ ☐

SEAL

From 2.5 To 49.8

Material Bentonite Grout

Amount 13 Sacks Grout weight _____

SCREEN

Casing/Liner Casing Material PVC

Diameter 2 From 55 To 75

Slot Size 0.020

FILTER

From 52.8 To 75.6 Material SAND Size of pack 8/12

(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 N N/S Range 3.00 E E/W WM

Sec 29 SE 1/4 of the NE 1/4 Tax Lot 1

Tax Map Number _____ Lot _____

Lat ° ' " or _____ DMS or DD

Long ° ' " or _____ DMS or DD

● Street address of well ○ Nearest address

2525 NE 201 AVENUE
GRESHAM, OREGON 97024

(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
Silt and Gravel Fill	0	2
Silty, Sandy Gravel & Cobbles	2	8.5
Sand & Silt	8.5	20.2
Siltstone and Claystone	20.2	30
Clayey Siltstone and Sandstone	30	37.5
Silty Sandstone	37.5	43
Clayey Siltstone	43	51
Clayey Siltstone to Silty Sandstone	51	55
Sandy Siltstone to ~~Silty~~ Sandstone	55	62.5
Clean Standstone Silty	62.5	95

Date Started ~~3/3/2012~~ 3/1/12 Completed 3/8/2012

(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 10576 Date 6/8/2012

Password : (if filing electronically) _____

Signed AARON J ADAMS (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 10306 Date 6/8/2012

Password : (if filing electronically) _____

Signed J TRENT CASTNER (E-filed)

Contact Info (optional) Boart Longyear

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 - continuation page

MULT 110008

6/8/2012

WELL I.D. LABEL# L99269

START CARD # 1015933

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
~~7~~ 6	~~27~~ 25	75.5
4	75.5	95

FILTER PACK

From	To	Material	Size

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
Bentonite Chips	49.8	52.8	1	S	

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
~~●~~	~~○~~	~~6~~		~~27~~	~~55~~	~~.375~~	~~●~~	~~○~~	~~X~~	
○	○						○	○		
●	○	8		0	27	.375	X	○	X	

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

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

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

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

(8) WELL LOG

Material	From	To

Comments/Remarks

Borehole over-drilled and backfilled with high solids bentonite cement grout 75.6'-95'
Well Installed at 75'

LITHOLOGIC LOG – VW-17d-75.0

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 8, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
0				FILL	**0.0 - 2.0 ft: Silty Gravel (GM)**, gray, dry, loose 3/4-minus gravel and silt (FILL).	**FILL** 12-in. diam. borehole: 0 to 25 ft
5				GW-GM	**2.0 - 5.8 ft: Well-Graded Gravel with Silt, Sand, & Cobbles (GW-GM),** med. brn, dry to moist, 55 - 75% gravel & cobbles, gravel fine to 3 in., cobbles to 4 in., subrounded, rounded & flat/elongate, predominantly non-vesicular gray & blk basalt, trace vesicular basalt, some weathered basalt altered grn; trace rhyolite, quartzite, granite & metamorphic (gneissic) gravel.	**UPPER TGA GRAVEL**
				SM	**5.8 - 6.8 ft: Silty Sand with Gravel & Cobbles (SM),** gray w/ or.-red & blk alteration, moist; 75% matrix, v. fine sa., abundant mica, alteration around weathered basalt; 15% gravel to 3/4 in., 10% cobbles to 3.5 in.; subrounded, rounded, mostly basalt; trace quartzite & granitic gravel.	Groundwater encountered @ 7 ft
				GW-GM		
				SM	**6.8 - 8.5 ft: Well-Graded Cobbles & Gravel with Silt & Sand (GW-GM),** med. brn to red-brn, WET, 15% silt & v. fine sa., mica, soft to loose, 60% cobbles to 4 in., 25% gravel, subangular to subrounded, mostly basalt.	
10				SW-SM	**8.5 - 9.0 ft: Silty Sand (SM),** med. brn to light brn, moist, fine to med-grained sa., loose, locally weakly-cemented.	**LOWER TGA SAND AND SILT**
					9.0 - 13.5 ft: Well-Graded Sand with Silt (SW-SM), med. brn, WET, 70% fine to med-grained sa., few poorly-graded med. sa. intervals, loose, locally weakly-cemented; @ 13.5 ft gray, poorly-graded fine sa.	
				ML	**13.5 - 15.0 ft: Sandy Silt (ML),** med. brn, or. red mottling, blk staining, moist, fine- to med-grained, thin slight hoizontal partings, 30% v. fine cinder, basalt, & white lithics; weathered horizon.	
15				SM	**15.0 - 17.7 ft: Silty Sand (SM),** mottled gray & med. brn, localized or.-red & blk alteration to 16 ft, mod-cemented, dense.	
				SP	**17.7 - 18.0 ft: Poorly Graded Sand (SP),** WET, coarse, loose, some thin weakly-cemented horizontal lenses.	
				SM	**18.0 - 18.3 ft: Silty Sand with Gravel (SM),** gray-grn, moist, coarse sa., 25% basalt & quartzite gravel to 3 in.	
				ML		
	15	7	<0.06	SM	**18.3 - 19.7 ft: Sandy Silt (ML),** yel-brn to light brn, mottled or.-grn-tan, dry to moist, weathered, weakly-cemented, stiff, irregular disturbed fluvial texture.	
20					**19.7 - 20.2 ft: Silty Sand (SM),** WET, fine to coarse, partially-cemented, dense, to locally loose.	

NOTES: See page 5 of 5 for well construction information.
Rotosonic drill vibrations and laboratory sample tamping of cemented material may affect grain size analysis results.

LITHOLOGIC LOG – VW-17d-75.0

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor: Boart Longyear, LLC ***Ground Surf Elevation:*** *Approximately 120 ft MSL*

Drilling Method: Rotosonic truck-mounted rig ***Top of PVC Elevation:*** *Approximately 123 ft MSL*

Drill End Date: March 8, 2012 ***Logged by:*** S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
20				SM	**19.7 - 20.2 ft: Silty Sand (SM),** cont'd.	**LOWER TGA SA. & SILT**
	55	20	<0.08	ML	**20.2 - 21.0 ft: Clayey Siltstone (ML),** light red-brn, moist, v. stiff, massive, homogeneous.	**CONFINING UNIT 1**
	30	68	0.25			
	43	54	0.09	CL	**21.0 - 23.0 ft: Silty Claystone (CL),** color change from brn to light grn-brn, to blue-gray, dry to moist, v. hard, massive.	
	37	62	0.12			
	51	48	0.10			
	61	38	<0.06	ML	**23.0 - 25.0 ft: Clayey Siltstone (ML),** blue-gray, some or. mottling, dry to damp, v. hard, massive.	
	71	27	0.09			
	71	27	<0.06			
25			0.06			
	24	68	0.24	CL	**25.0 - 27.0 ft: Silty Claystone (CL),** dark brn and dark gray irregular mottling, some or.-red weathering, moist, v. hard, massive, mod-cemented, few lithics to 1/4 in.	12-in. diam borehole: 0 to 25 ft
			0.35			
	32	59	0.14			Stl csg: 0 to 27 ft
	45	29	0.09	ML	**27.0 - 30.0 ft: Clayey Siltstone with Sand (ML),** weathered dark brn & dark gray, dry to damp, v. hard, massive, weathered or. mottling increases with depth; below 28 ft red-brn & blk-gray mottling, light tan alteration (palagonite), trace subangular basalt to 1/2 in., blk cemented shale pockets & thin seams.	6-in. diam. borehole: 25 to 75.5 ft
	41	21	0.20			
30				ML	**30.0 - 31.0 ft: Sandy Clayey Silt (ML),** v. highly weathered, or. & light brn, grussy texture, trace lithics, soft palagonite pockets, or.-red alteration along weathered bedding planes.	
	39	20	<0.05			
	22	15	<0.05	SM	**31.0 - 33.0 ft: Silty Sandstone with Clay (SM),** (gradational) v. highly weathered, red-brn, moist, mod-cemented, some plasticity, fine-grained lithic sa., some thin, v. hard blk shale lenses.	
	24	11	<0.05			
	30	16	<0.05			
	25	14	<0.05	SM	**33.0 - 37.5 ft: Silty Sandstone with Clay (SM),** (gradational) weathered red-brn, moist, lithic sa. (angular basalt, cinder) grades from v. fine to coarse with depth, weakly-cemented, slight horizontal preferentially partings, med-dense, or. alteration & blk staining on parting faces, some hard blk shale lenses.	
35						
	26	13	<0.05			
	26	17	<0.05			
	23	13	<0.05	SM	**37.5 - 39.0 ft: Silty Sandstone (SM),** (gradational) dark brn to blk on broken faces, mod. well-cemented thin lenses (1/4 in.), 75% poorly-graded fine lithic & vitric sa., 25% fines, mica.	
	17	6	<0.05			
	6	3	0.37	SP-SM	**39.0 - 43.0 ft: Poorly-Graded Sandstone with Silt (SP-SM),** med. brn, moist, 80% v. fine lithic & vitric sa., 20% non-plastic fines, mica, mod-cemented thin horizontal planes, blk staining on parting faces, few thin (1/4 in.) blk vitric siltstone laminae.	
40						

NOTES: See page 5 of 5 for well construction information.
Rotosonic drill vibrations and laboratory sample tamping of cemented material may affect grain size analysis results.

LITHOLOGIC LOG – VW-17d-75.0

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 8, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
40				SP-SM	**39.0 - 43.0 ft: Poorly-Graded Sandstone with Silt (SP-SM),** cont'd; med brn, moist, 80% very fine lithic & vitric sa., 20% non-plastic fines, mica, mod-cemented thin horizontal planes, blk staining on parting faces, few thin (1/4 in.) blk vitreous siltstone laminae.	**CONFINING UNIT 1**
	8	3	0.05			
	8	3	0.11			
	12	5	<0.05			
	40	15	0.06	ML	**43.0 - 46.2 ft: Clayey Siltstone (ML),** light tan to pink, moist, stiff, massive, vugs <1/8 in., weakly cemented, v. fine, 10% lithic & mineral fragments, or. and blk alteration in vugs.	6-in. diam. borehole: 25 to 75.5 ft.
	43	21	0.05			
45	35	14	0.05			
	73	23	0.06	ML	**46.2 - 51.0 ft: Clayey Siltstone (ML),** light grn-brn moist, stiff, weakly-cemented, massive to slight horizontal partings to irregular disturbed fluvial pockets, mica.	
	76	21	<0.05			
	58	21	<0.05			
	50	15	0.06			
50	51	22	0.06			
	38	15	0.11	ML	**51.0 - 53.5 ft: Clayey Siltstone with Sand (ML),** red brn, moist, v. weakly-cemented, thinly bedded siltstone, some v. fine sa.	
	40	19	0.07			
	31	11	<0.05	SM/ML	**53.5 - 55.0 ft: Silty Sandstone to Sandy Siltstone (SM/ML),** red-brn, moist, weakly-cemented, fine to med-grained lithic sand, white mineralized vugs.	
55	36	15	<0.05			
	10	3	0.05	SP-SM	**55.0 - 61.0 ft: Poorly-Graded Sandstone with Silt (SP-SM),** weathered vitric v. fine sa. & silt, blk & or. on broken face, damp to moist, mod-cemented thin horizontal planes (1/2 in.), dense, blk & or. staining along parting faces, little loose sa. between cementation, abundant fine white alteration flecks.	**UPPER TSA SANDSTONE (Gradational Zone)** *VW-17d-75.0 screened from 55.0 to 75.0 ft*
	7	3	0.09			
	5	2	0.07			
	14	5	0.08			
	10	3	0.11			
60						

NOTES: See page 5 of 5 for well construction information.
Rotosonic drill vibrations and laboratory sample tamping of cemented materials may affect grain size analysis results.

LITHOLOGIC LOG – VW-17d-75.0

Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 8, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
60				SP-SM	**55.0 - 61.0 ft: Poorly-Graded Sandstone with Silt (SP-SM),** cont'd.	**UPPER TSA SANDSTONE (Gradational Zone)**
	16	3	0.14			
				SM	**61.0 - 63.0 ft: Silty Sandstone (SM),** weathered devitrified to yel-or. palagonite, damp to moist, cemented, or. alteration on horizontal parting faces, thin dark brn shale interbeds (1/4 in.).	
	17	5	0.05			
	26	6	0.06			
				SP	**63.0 - 64.0 ft: Poorly-Graded Sandstone (SP)** blk vitric with yel-or. palagonitic alteration, dry, v. well-cemented, v. dense rock (heavy sledge stroke to break).	**UPPER TSA SANDSTONE (Vitric Zone)**
			0.06			
	13	1	<0.05			*VW-17d-75.0 screened from 55.0 to 75.0 ft*
65				SP	**64.0 - 70.8 ft: Poorly-Graded Sandstone w Silt (SP)** or.-brn, weathered, med-grained, vitric, weakly-cemented, intensely weathered 64.0 to 64.3 ft, some fines.	
			<0.05			
	11	2	<0.05		@ **65.2 ft:** changes to unweathered gray-blk vitric sa., damp, course, loose to weakly-cemented lenses.	
			<0.05			
	15	1	<0.05		@ **68.5 ft:** changes to 50% fresh gray-blk vitric sa., 50% weathered, yel-or. palagonitic devitrification, horizontal cementation lenses, some loose sa.	
70			<0.05			
	47	12	<0.05	ML	**70.8 - 71.3 ft: Sandy Silt w Clay (ML),** light gray, moist, stiff, horizontal bedding.	
			<0.05			
			<0.05	SP/SW	**71.3 - 95.5 ft: Poorly- to Well-Graded Sandstone (SP/SW),** blk vitric sa., varying degrees of or. palagonitic alteration, predominantly med-grained, varies fine to coarse, predominantly moderately to well-cemented thin horizontal planes (1 to 2 in.) with loose sa. between, some predominantly loose intervals.	6-in. diam. borehole: 25 to 75.5 ft
			<0.05			
	9	1	<0.05			
75					@ **74.0 ft:** dark gry-blk, damp, loose to weakly-cemented, coarse.	4-in. diam. borehole: 75.5 to 95 ft
			0.06			
			<0.05		@ **75.0 ft:** weathered 70%, blk vitric 30%, damp, mod-cemented.	
			<0.05			
					@ **77.0 ft:** blk vitric 80%, or. alteration 20%, damp, mod-cemented.	
			<0.05			
			<0.05			
80						

NOTES: See page 5 of 5 for well construction information.
Rotosonic drill vibrations and laboratory sample tamping of cemented materials may affect grain size analysis results.

LITHOLOGIC LOG – VW-17d-75.0

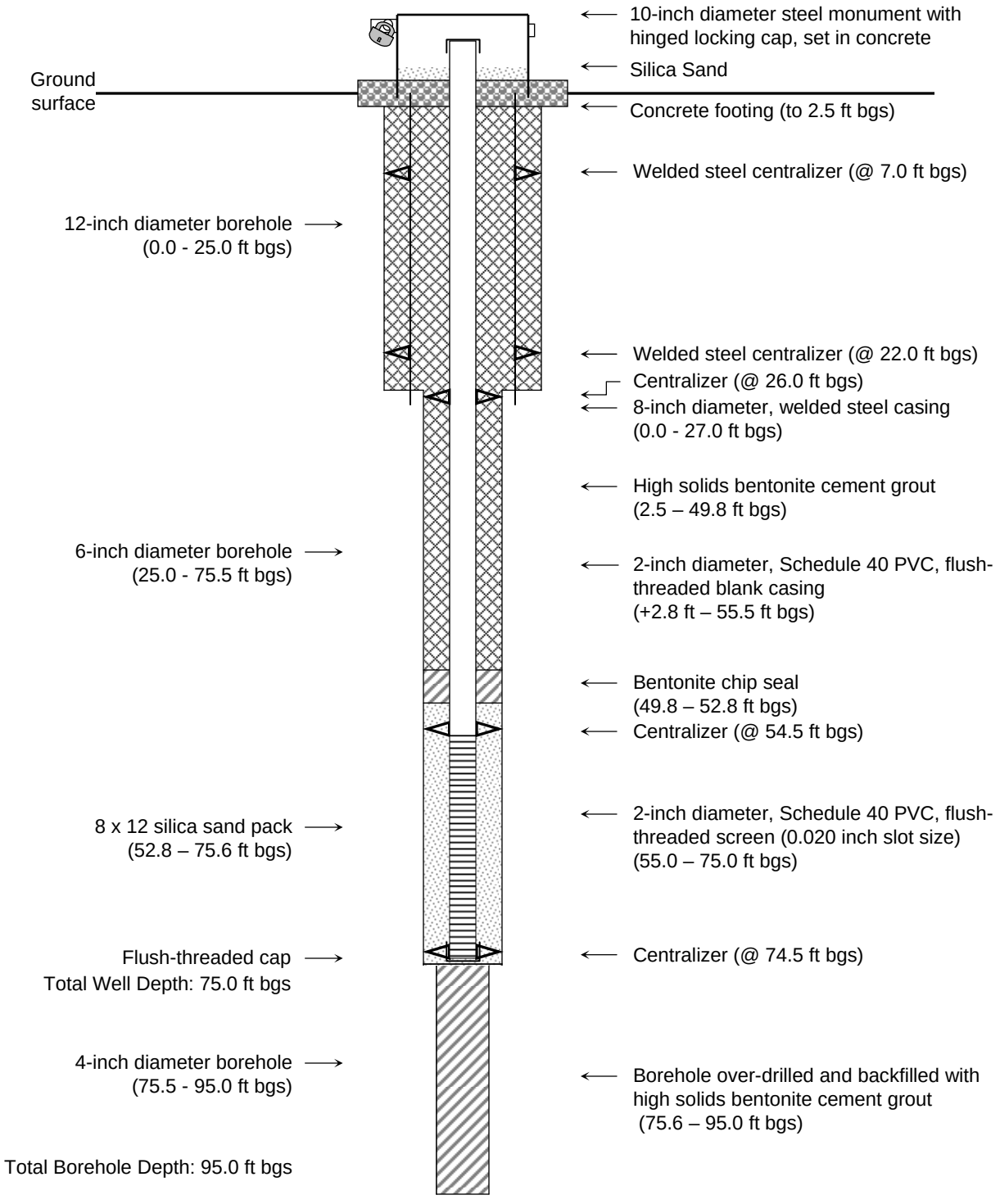
Project: Cascade Corporation, TSA Remedy ***Well Location:*** 2525 NE 201st Avenue, Fairview, OR

Drilling Contractor:	Boart Longyear, LLC	***Ground Surf Elevation:***	*Approximately 120 ft MSL*
Drilling Method:	Rotosonic truck-mounted rig	***Top of PVC Elevation:***	*Approximately 123 ft MSL*
Drill End Date:	March 8, 2012	***Logged by:***	S. Prowell, R.G.

DEPTH BELOW SURFACE (ft)	% SILT	% CLAY	% TOC	SYMBOLIC LOG	SOIL DESCRIPTION Soil name, group symbol, color, moisture, relative density or consistency, soil structure, minerals	COMMENTS Borehole diameter, depth to groundwater, rig response, etc.
80					**71.3 - 95.5 ft: Poorly to Well-Graded Sandstone (SP/SW),** blk vitric sa., cont'd.	**UPPER TSA SANDSTONE (Vitric Zone)**
	9	2	<0.05	SP/ SW	@ **80.0 ft:** blk vitric, damp, predominantly loose,fine to coarse.	
			<0.05			
			<0.05		@ **82.0 ft:** slightly weathered, gray with or. palagonite alteration, damp, predominantly cemented thin planes.	
			<0.05		@ **84.0 ft:** blk vitric, damp, predominantly cemented thin planes, med-grained.	
85			<0.05			
			<0.05		@ **84.5 ft:** weathered horizon, damp, abundant or. alteration, predominantly cemented lenses, med-grained.	4-in. diam. borehole 75.5 to 95 ft
			<0.05		@ **85.0 ft:** blk vitric, damp, predominantly loose, fine to coarse.	
	8	1	<0.05		@ **87.0 ft:** blk vitric, damp, predominantly well-cemented, fine to coarse.	
			<0.05		@ **88.0 ft:** > 60% blk vitric, < 40% or. palagonitic alteration, damp, equal proportions loose and cemented lenses.	
90			<0.05			
			<0.05		@ **89.0 ft:** > 50% blk vitric, < 50% or. palagonite alteration, damp between cemented lenses, predominantly v. well- cemented, v. dense lenses 1 to 2 in. thick.	
			<0.05			
			<0.05			
			<0.05			
95	15	1	<0.05			

Total Drill Depth: 95.0 ft bgs
Total Well Depth: 75.0 ft bgs
Borehole Diameter: 12 inch, 0 - 25.0 ft
Permanent 8" Casing: 0 - 27.0 ft; welded steel
Interaquifer Seal: High solids bentonite grout; 0 -25.0 ft within annular space; 22.0 - 25.0 ft inside steel csg
Step-down Borehole Diameter: 6 inch, 25.0 - 75.5 ft; 4 in, 75.5 - 95.0 ft
Overdrill Interval Seal: High Solids Bentonite Grout; 75.6 - 95.0 ft
Well Casing and Screen Material: 2-inch I.D., Schedule 40, flush-threaded PVC with bottom threaded plug
Well Screen: 55.0 - 75.0 ft; 0.02 inch slot size
Filter Sand Pack: 52.8 - 75.6 ft; 8 X 12 clean silica sand
Well Seal: Hydrated Bentonite Chips; 49.8 - 52.8 ft
Well Seal: High Solids Bentonite Grout; 0 - 49.8 ft

NOTES:
Rotosonic drill vibrations and laboratory sample tamping of cemented materials may affect grain size analysis results.
Grain size analytical method = ASTM D 422 by Northwest Geotech.
Total organic carbon (TOC) analytical method = ASTM D4129-05 MOD by Columbia Analytical Services.



Well Completion Date: March 8, 2012
Drilling Contractor/Method: Boart Longyear / Rotosonic
Ground Surface Elevation: *Approximately 120 ft MSL*
Top of Casing Elevation: *Approximately 123 ft MSL*

Prowell Environmental, Inc., Portland, Oregon.

VW-17d-75.0 Well Details
TSA Remedy – East Multnomah County

D-16(ds)

SAMPLE DATA | **SOIL PROFILE** | **WELL DETAIL**

Drilling Method: Air Rotary

Ground Elevation (ft): 15.4

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/6 Inches	PID/Test Data	Graphic Symbol	USCS Symbol	Description
0						ML	Dark yellow-brown, clayey SILT with very fine sand; slightly micaceous (dry to moist, soft)
10							
20				0.0		ML	Dark gray, clayey SILT with very fine sand; slightly micaceous; occasional brown organic matter (wet, soft)
30							
40				0.0		GP	Dark gray-brown, sandy, medium to coarse GRAVEL and COBBLES with trace silt; sand is fine to coarse; slightly micaceous; well cemented (wet, very dense)
50							
60				0.0			

8" — Lockable Protective Vault

Well Casing

Cement Grout

Bentonite Grout

2-inch Schedule 80 Casing

Bentonite Chips

(Continued Next Page)

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(ds)

Figure C-3

D-16(ds)

SAMPLE DATA | **SOIL PROFILE** | **WELL DETAIL**

Drilling Method: Air Rotary

Ground Elevation (ft): 15.4

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/6 Inches	PID/Test Data	Graphic Symbol	USCS Symbol	Description
60						GP	Dark gray-brown, sandy, medium to coarse GRAVEL and COBBLES with trace silt; sand is fine to coarse; slightly micaceous; well cemented (wet, very dense)
70				0.6			Basalt Boulder
80	1	3				SS/SLT	Black, dark brown, and yellow, medium to coarse grained SANDSTONE with trace silt; occasional thin lenses of light olive brown SILTSTONE
	2	3					
	3	3				SS/SLT	Light olive brown, fine grained SANDSTONE interbedded with light olive brown SILTSTONE; sandstone is heavily weathered; well cemented (wet, medium dense)
90	4	3				SLT	Brown, sandy SILTSTONE with occasional basalt cobbles (moist to dry, hard)
	5	3				SS	Gray and dark gray, coarse grained SANDSTONE; (wet, dense)
	6	1a	30,83/100			SLT	Dark blue gray, SILTSTONE; micaceous (moist to dry, medium stiff)
100	7	3					
	8	3					
	9	3				SS	Gray, SILTSTONE (dry to moist, medium stiff)
	10	3				SLT	Black, vitric, medium grained SANDSTONE (moisture ?, dense)
	11	3				SLT	Very dark gray, SILTSTONE (moist, soft)
	12	1a	105	0.0		SLT	Very dark gray, SILTSTONE with trace of black, fine, sand (moist, soft)
110	13	3		0.1		SS	Black, SILTSTONE with fine sand and trace fine gravel (moist, medium stiff)
	14	3		0.0		SLT	Dark gray, silty fine SANDSTONE; no to slight cementation (wet)
	15	1a	36,73/105	0.4		SLT	Very dark gray, SILTSTONE with fine to medium sand (wet, soft)
120	16	3		3.5			Dark green-gray, SILTSTONE with trace clay; micaceous (dry to moist, stiff)

WELL DETAIL: 8" / 6"; Bentonite Chips; Bentonite Grout

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(ds) | Figure C-3

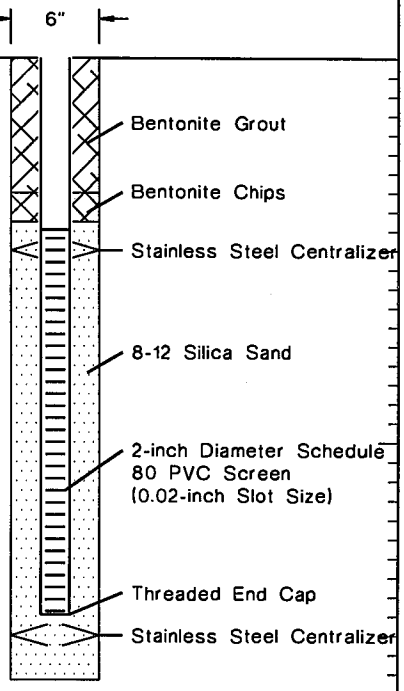
D-16(ds)

SAMPLE DATA | **SOIL PROFILE** | **WELL DETAIL**

Drilling Method: Air Rotary

Ground Elevation (ft): 15.4

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/6 Inches	PID/Test Data	Graphic Symbol	USCS Symbol	Soil Description
120	17	3		0.5		SLT	Dark green-gray, SILTSTONE with trace clay; micaceous (dry to moist, stiff)
	18	3		2.0		SS	Very dark gray, fine to medium SANDSTONE; slight cementation (wet)
130	19	3		2.7		SS	Change in color to black
140	20	3		1.3			
	21	3		1.9			
150	22	3		2.1			
	23	3		1.4			
160							
170							
180							



Boring Completed 08/28/93
Total Depth = 152.3

Well Completed 09/02/93
Elevation at Top of Well Casing = 15.6
Elevation at Top of PVC Casing = 15.4

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(ds) | Figure C-3

D-16(dg)

Drilling Method: Air Rotary

Ground Elevation (ft): 15.1

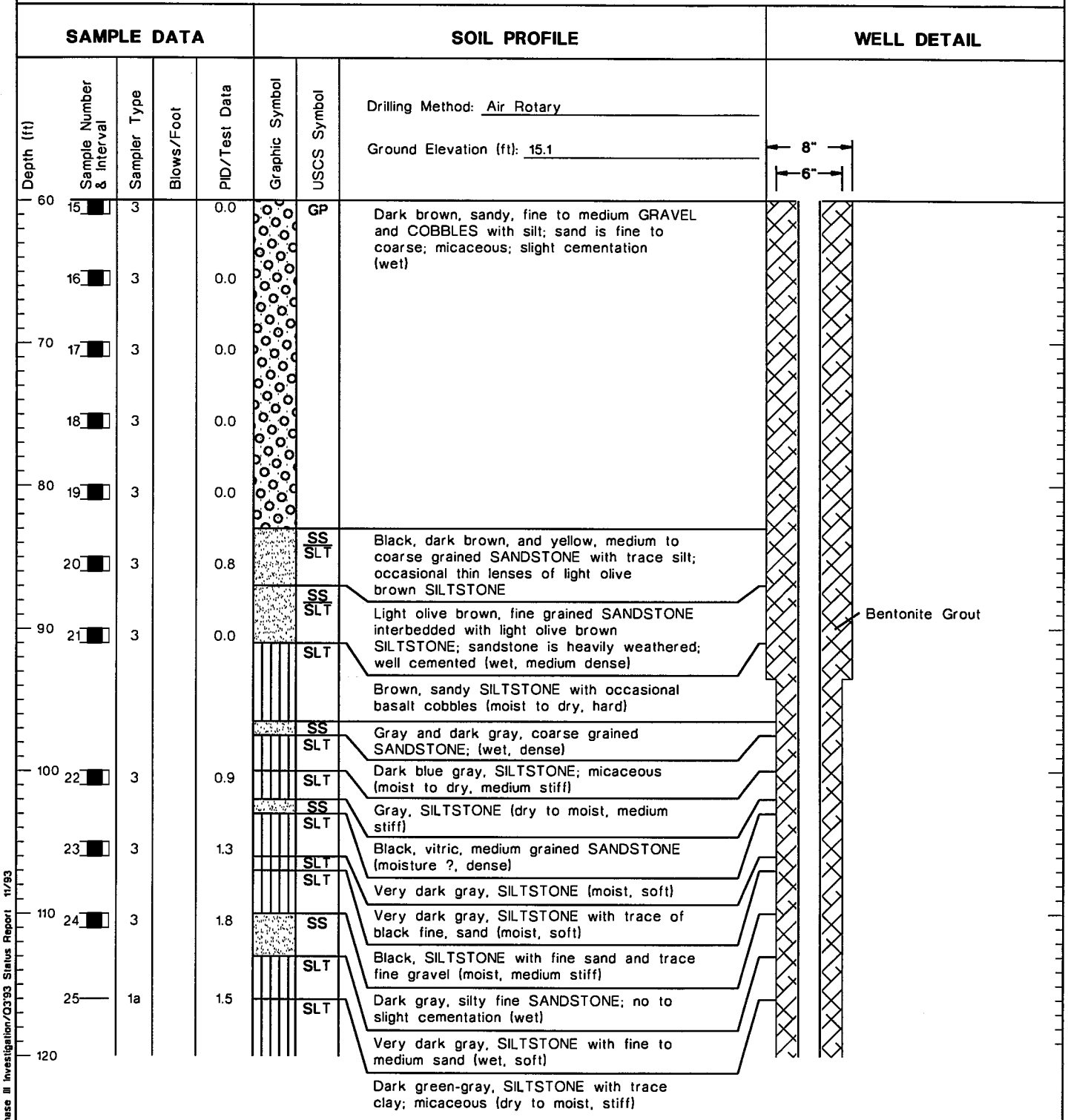
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID/Test Data	Graphic Symbol	USCS Symbol	Soil Profile	Well Detail
0						ML	Dark yellow-brown to very dark gray-brown, clayey SILT; micaceous (dry to moist)	8"
	1	3		2.1				Bentonite Grout
10	2	3		0.2				
	3	3		0.3				
	4	1a		0.4		CL/ML	Very dark gray, silty CLAY to clayey SILT; slightly micaceous; occasional brown organic matter (wet)	
20	5	3		0.4				
	6	3		0.6		ML/CL	Dark gray mottled with very dark gray, clayey SILT; micaceous; occasional wood chips (wet)	
30	7	3		0.6				
	8	3		1.2		GP	Dark brown, sandy, fine to medium GRAVEL and COBBLES with silt; sand is fine to coarse; micaceous; slight cementation (wet)	
40	9	1a						
	10	3		2.5				
	11	3		3.6				
50	12	3		1.9				2-inch Schedule 80 Casing
	13	3		2.5				
60	14	1a						

(Continued Next Page)

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(dg)

Figure C-4



(Continued Next Page)

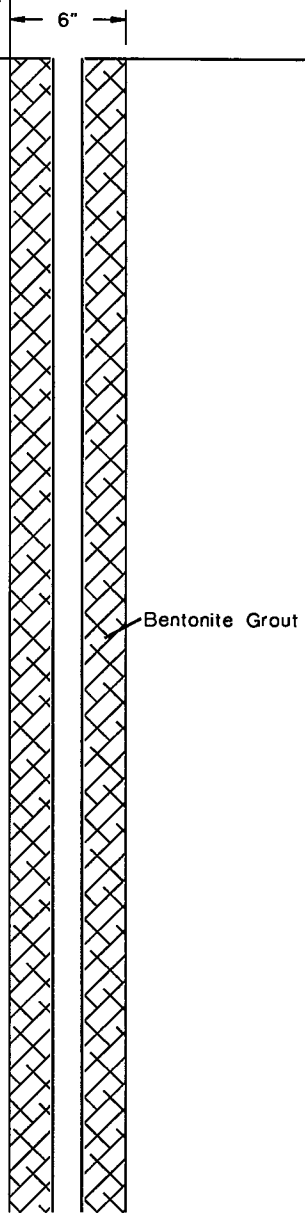
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(dg)

Figure C-4

D-16(dg)

SAMPLE DATA				SOIL PROFILE			WELL DETAIL
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID/Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Air Rotary Ground Elevation (ft): 15.1
120	26	3				SLT	Dark green-gray, SILTSTONE with trace clay; micaceous (dry to moist, stiff)
	27	3					
	28	3				SS	Very dark gray, fine to medium SANDSTONE; slight cementation (wet)
130	29	3					
						SS	Change in color to black
	30	3					
140	31	3					
150	32	3		1.0			
	33	3		2.1			
160	34	3		10.4			
	35	3		2.1			
170	36	3		19.1			
	37	3		0.0			
180							



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Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(dg) | Figure C-4

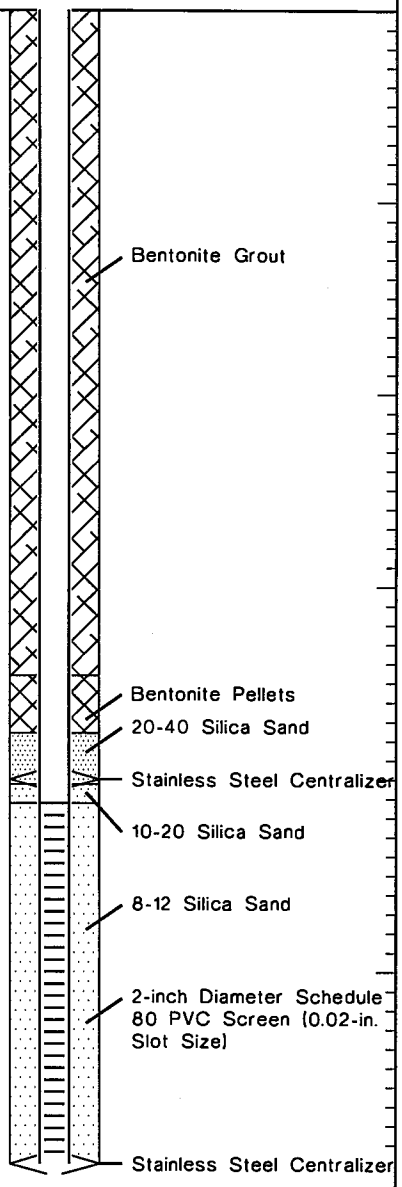
D-16(dg)

SAMPLE DATA | **SOIL PROFILE** | **WELL DETAIL**

Drilling Method: Air Rotary

Ground Elevation (ft): 15.1

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID/Test Data	Graphic Symbol	USCS Symbol	Soil Description
180	38	3		0.9		SS	Blank, fine to medium SANDSTONE; slight cementation (wet)
	39	3		1.3		SLT	Very dark gray-brown, sandy SILTSTONE with clay; sand is fine; micaceous (moist, moderately stiff)
190	40	3		1.0		SS	Black, fine SANDSTONE; no cementation; micaceous; (wet)
	41	3		0.4			
200	42	3		1.0		CO/SS	Dark gray, sandy, fine CONGLOMERATE with trace silt interbedded with medium to coarse SANDSTONE; no to weakly cemented (wet)
	43	3		1.9			
210	44	3		1.9		CO	Very dark gray to black, sandy, fine to medium CONGLOMERATE; no to slight cementation (wet)
	45	3		1.2			
220	46	3		0.0			
	47	3		0.0			
230	48	3		0.0			
	49	3		0.0			
240							



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Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(dg) | Figure C-4

D-16(dg)

SAMPLE DATA				SOIL PROFILE			WELL DETAIL
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID/Test Data	Graphic Symbol	USCS Symbol	
240	50	3		0.0		CO	Very dark gray to black, sandy, fine to medium CONGLOMERATE; no to slight cementation (wet)
	51	3		0.0		SLT	Gray, silty CLAY with fine sand; slightly micaceous (moist to wet, slightly stiff)

Drilling Method: Air Rotary

Ground Elevation (ft): 15.1

6"

8-12 Silica Sand
Threaded End Cap
20-40 Silica Sand
Bentonite Pellets

250
260
270
280
290
300

Boring Completed 08/10/93
Total Depth = 247.0

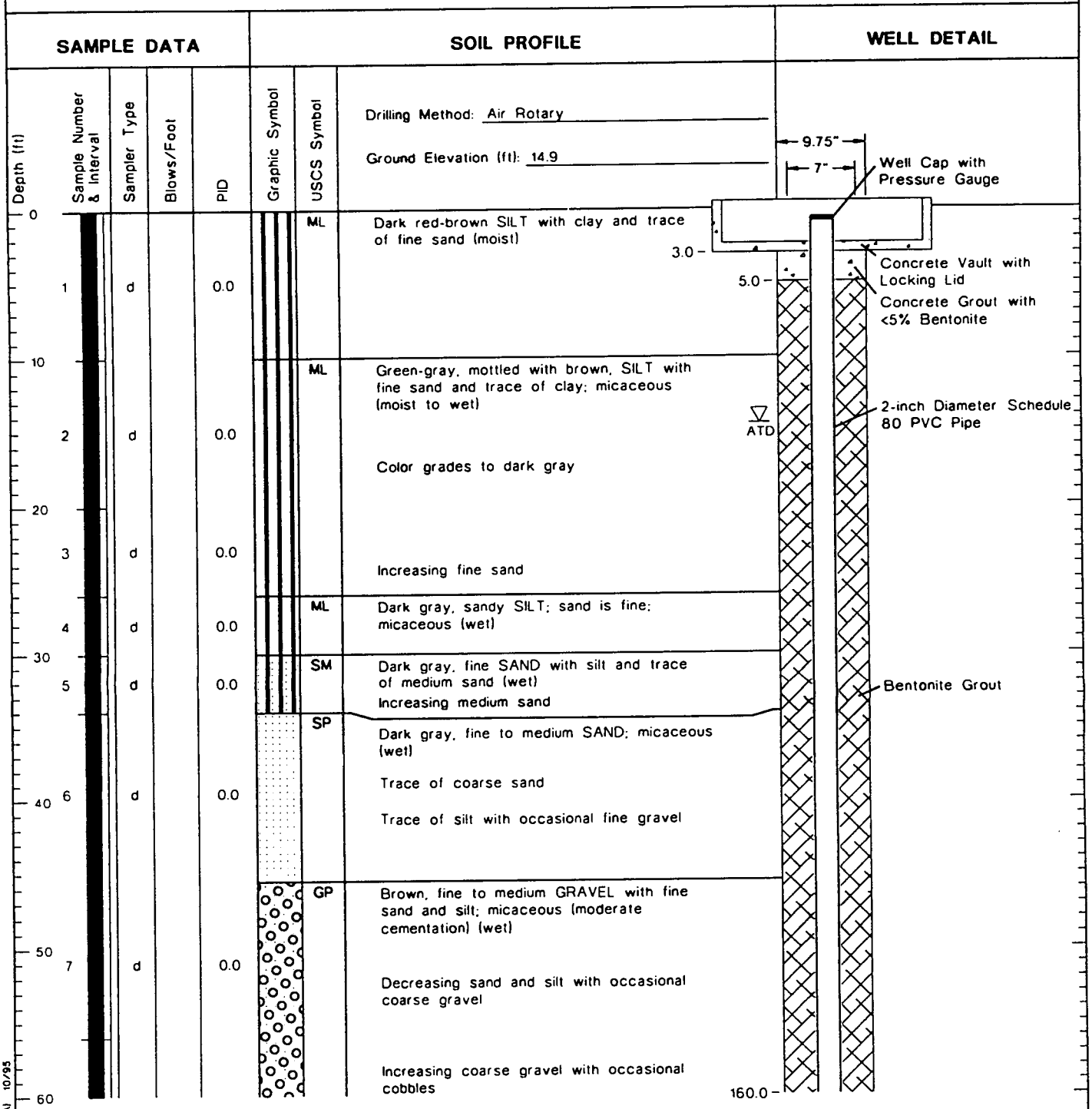
Well Completed 08/31/93
Elevation at Top of Well Casing = 15.2
Elevation at Top of PVC Casing = 14.6

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.

Monitoring Well D-16(dg)

Figure C-4

D-18ds Preliminary



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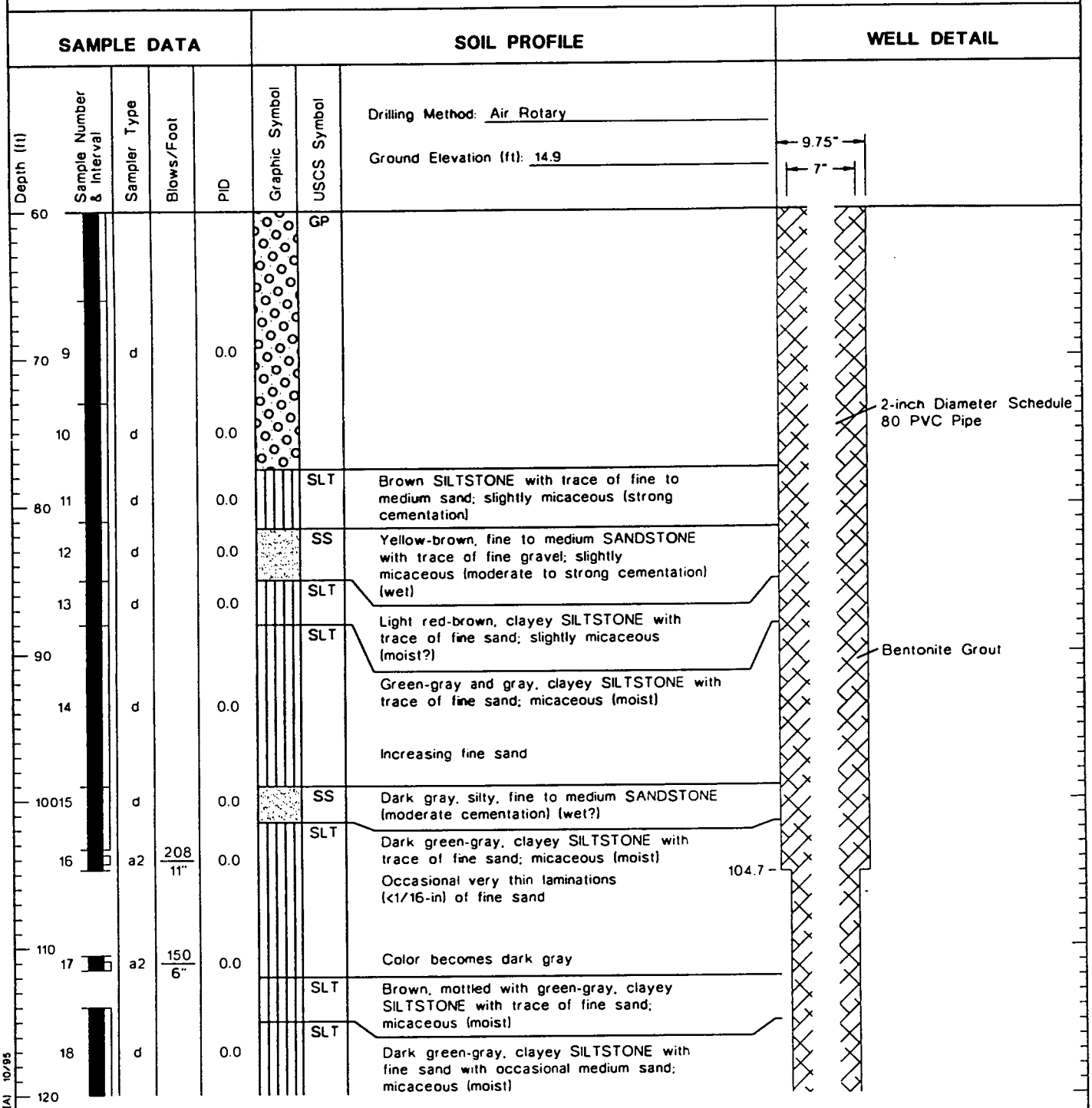
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boring and Monitoring Well D-18ds

Figure A-1 (1 of 3)

D-18ds Preliminary



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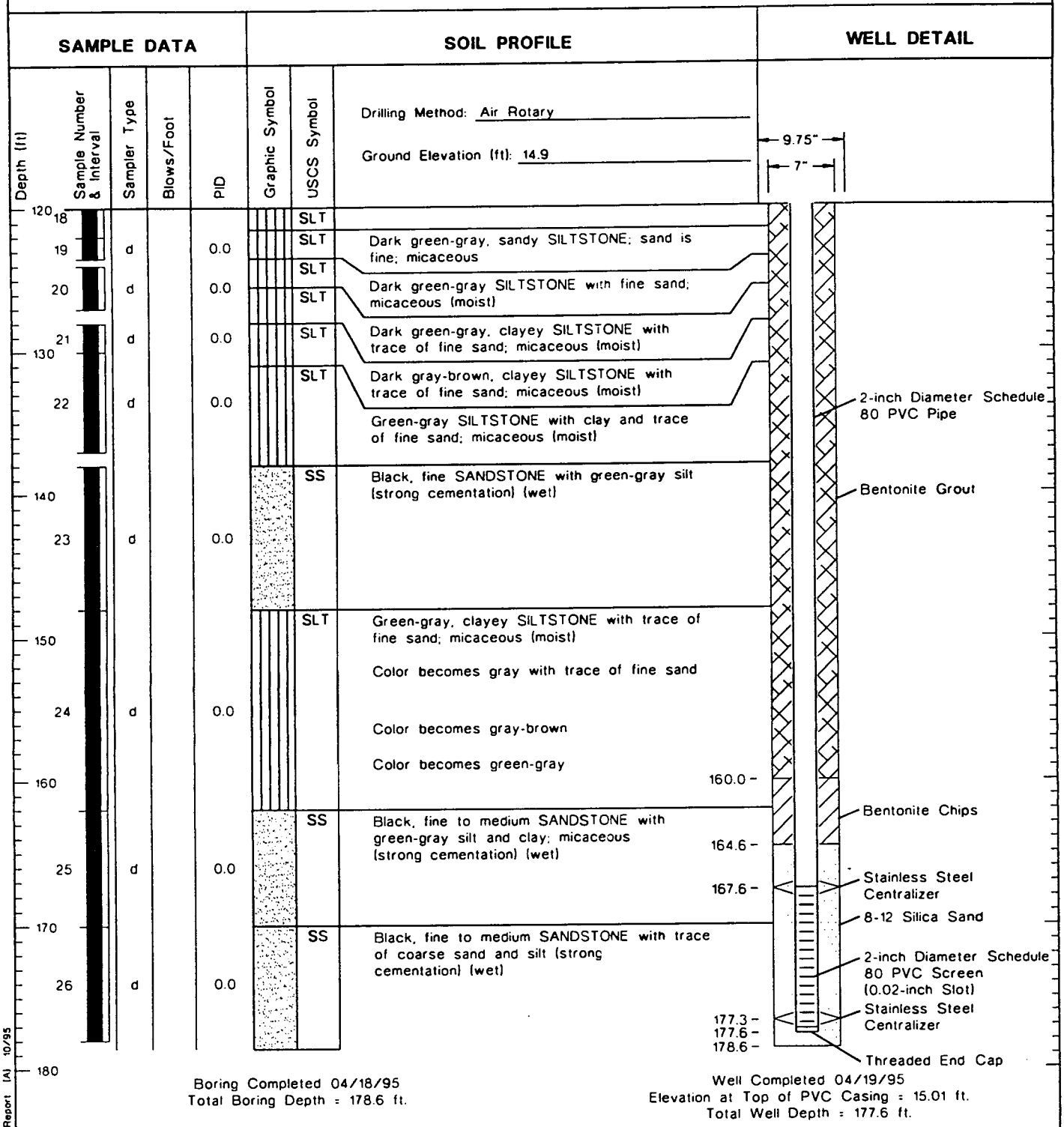
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boring and Monitoring Well D-18ds

Figure A-(2 of 3)

D-18ds Preliminary



Boring Completed 04/18/95
Total Boring Depth = 178.6 ft.

Well Completed 04/19/95
Elevation at Top of PVC Casing = 15.01 ft.
Total Well Depth = 177.6 ft.

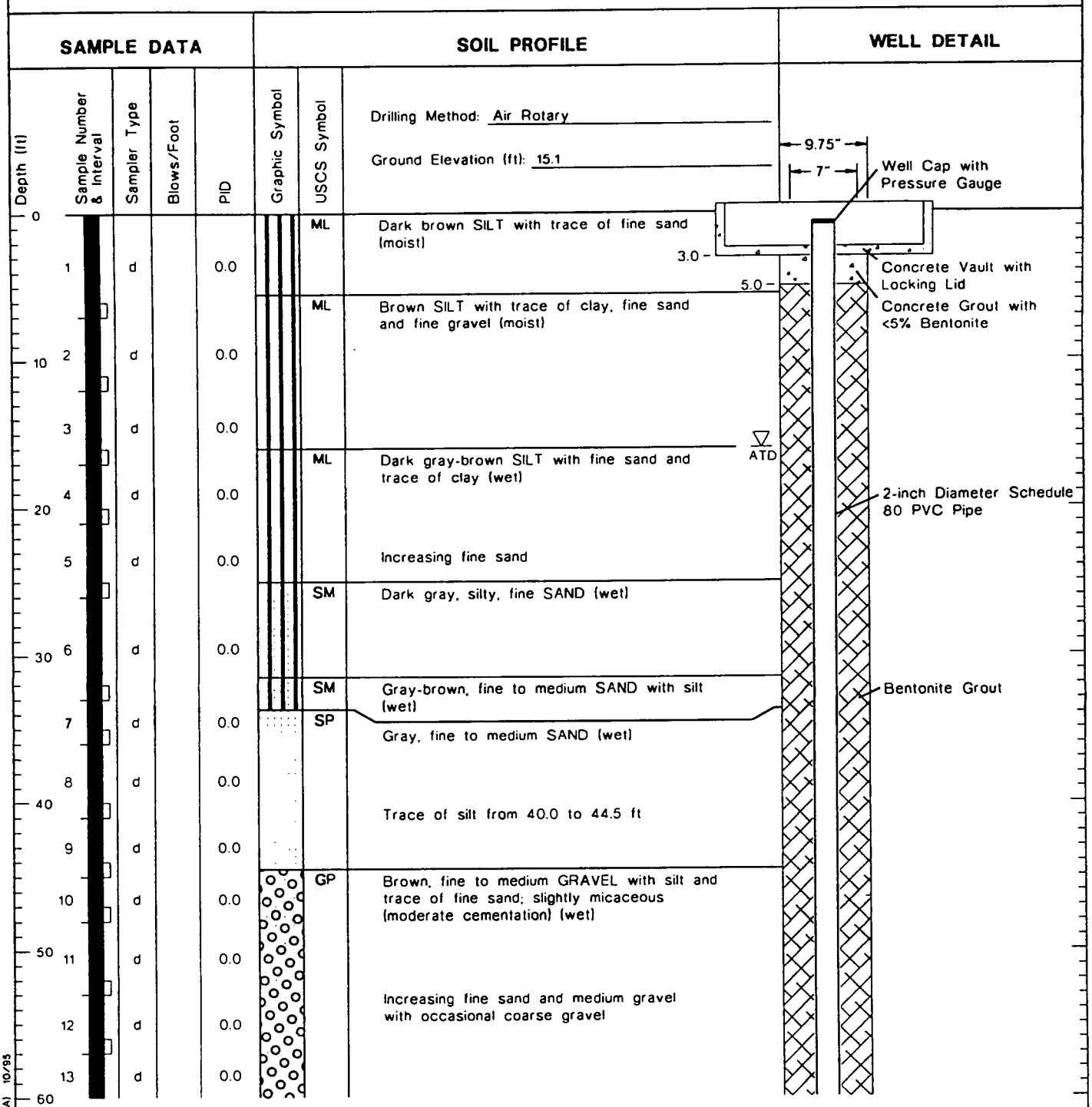
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boeing Portland/RI Report (A) 10/95
25110.61

Boring and Monitoring Well D-18ds

Figure A-
(3 of 3)

D-18dg Preliminary



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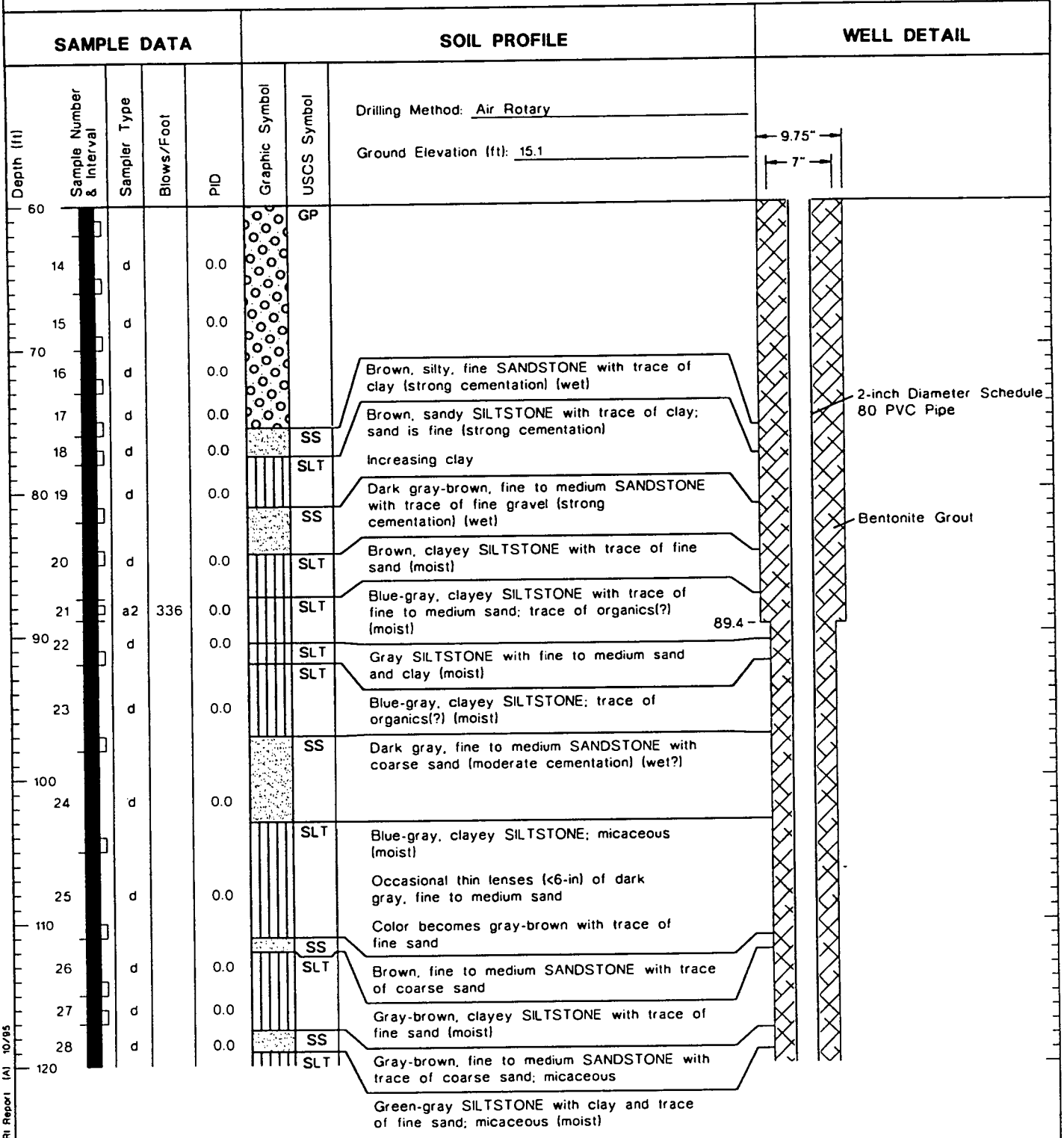
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boring and Monitoring Well D-18dg

Figure A-1 (1 of 5)

D-18dg Preliminary



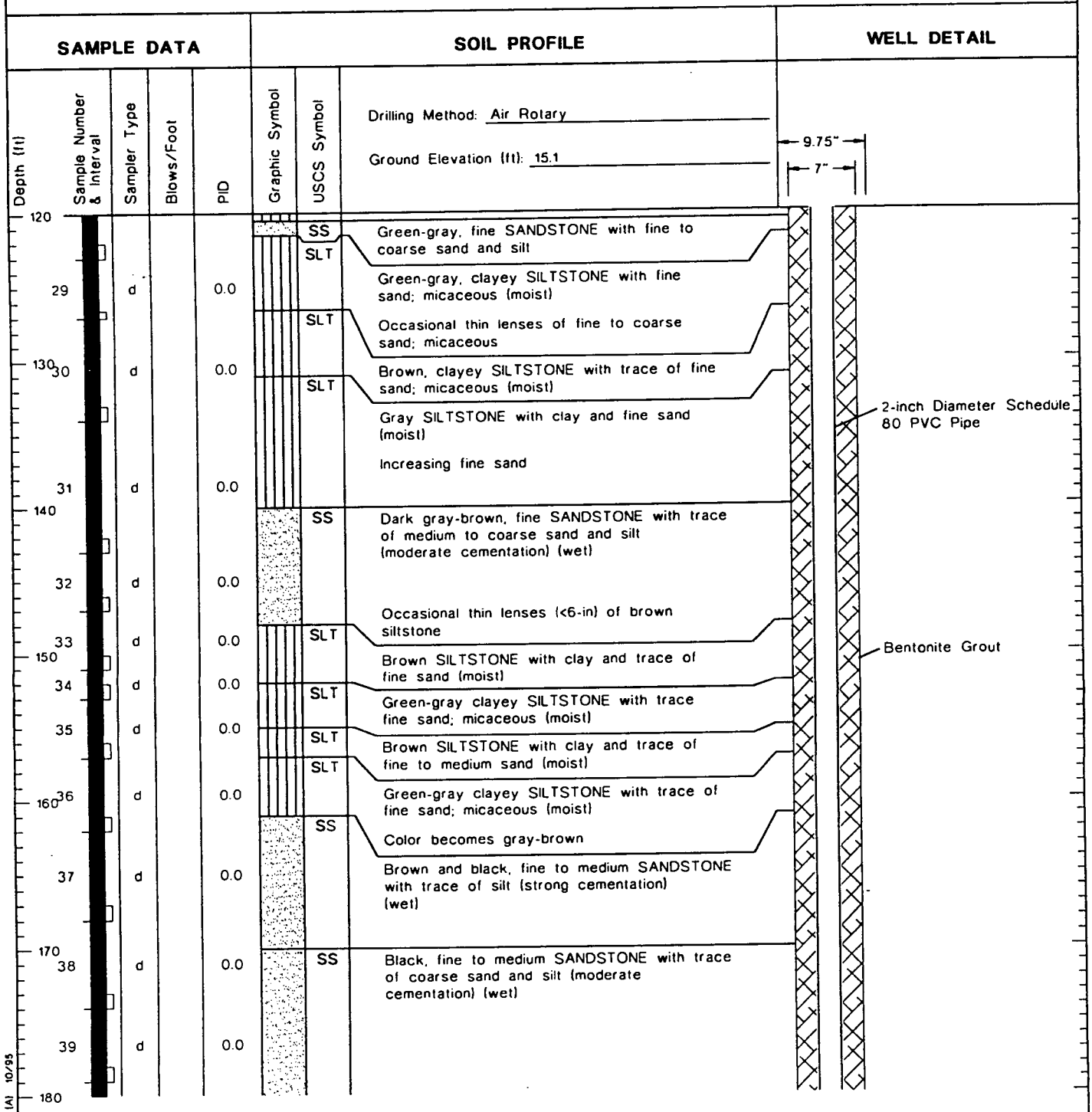
(Continued Next Page)

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boring and Monitoring Well D-18dg

Figure A-
(2 of 5)

D-18dg Preliminary



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Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boring and Monitoring Well D-18dg

Figure A-
(3 of 5)

D-18dg Preliminary

SAMPLE DATA					SOIL PROFILE			WELL DETAIL
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Air Rotary Ground Elevation (ft): 15.1	9.75" / 7"
180						SS	Trace of coarse sand	
	41	d		0.0				
190	42	d		0.0			Trace of fine gravel	2-inch Diameter Schedule 80 PVC Pipe
	43	d		0.0				
	44	d		0.0				
200								
	45	d		0.0			Increasing fine to medium gravel	
	46	d		0.0		CO	Black, sandy, fine to medium CONGLOMERATE with occasional coarse gravel; sand is fine to medium; slightly micaceous (moderate cementation) (wet)	Bentonite Grout
210								
	47	d		0.0			Increasing fine to medium gravel	
220	48	d		0.0				
	49	d		0.0				
230								
	50	d		0.0				
	51	d		0.0				
240								

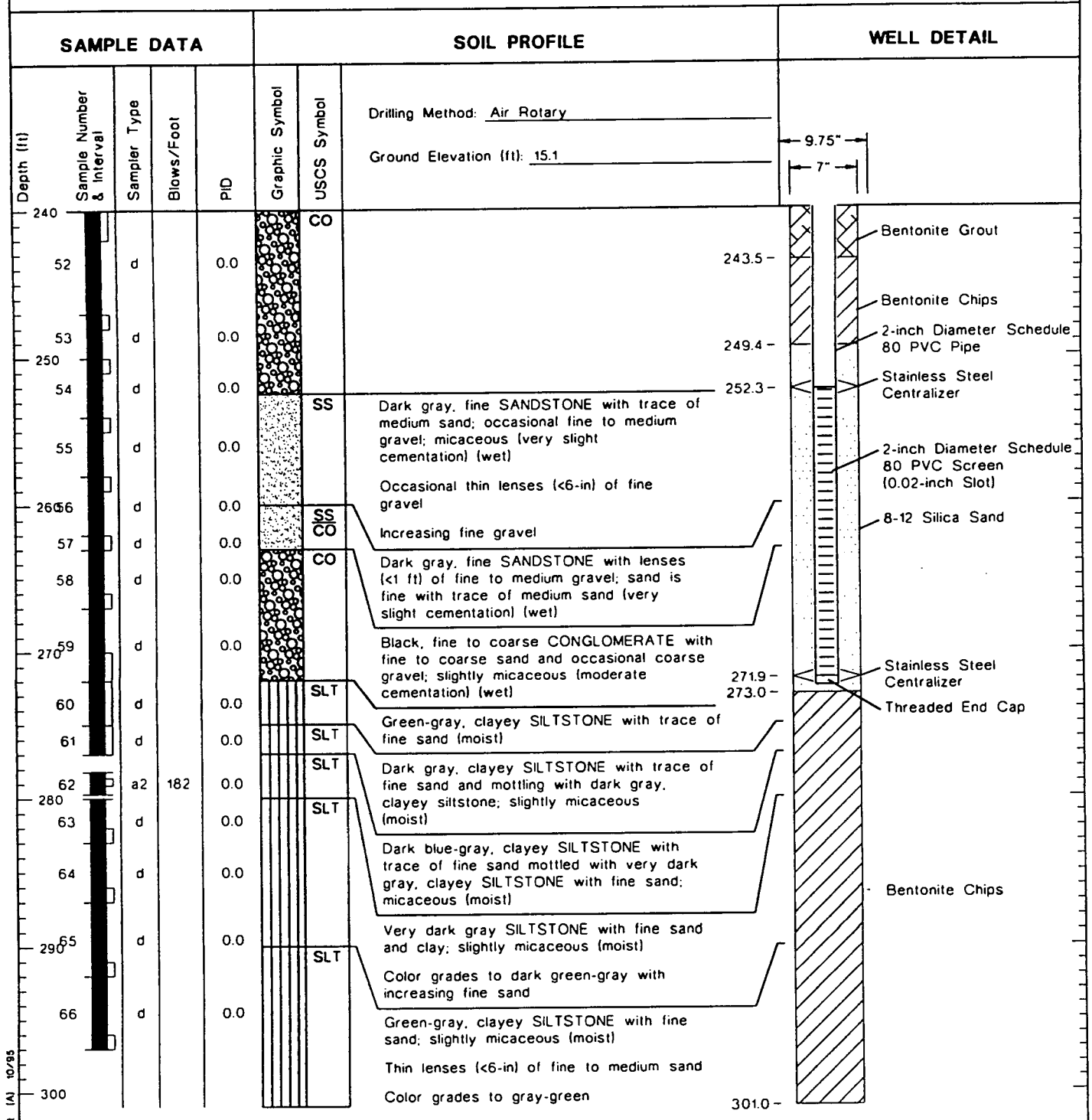
(Continued Next Page)

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

Boring and Monitoring Well D-18dg

Figure A-
(4 of 5)

D-18dg Preliminary



Boring Completed 04/11/95
Total Boring Depth = 301.0 ft.

Well Completed 04/13/95
Elevation at Top of PVC Casing = 15.42 ft.
Total Well Depth = 273.0 ft.

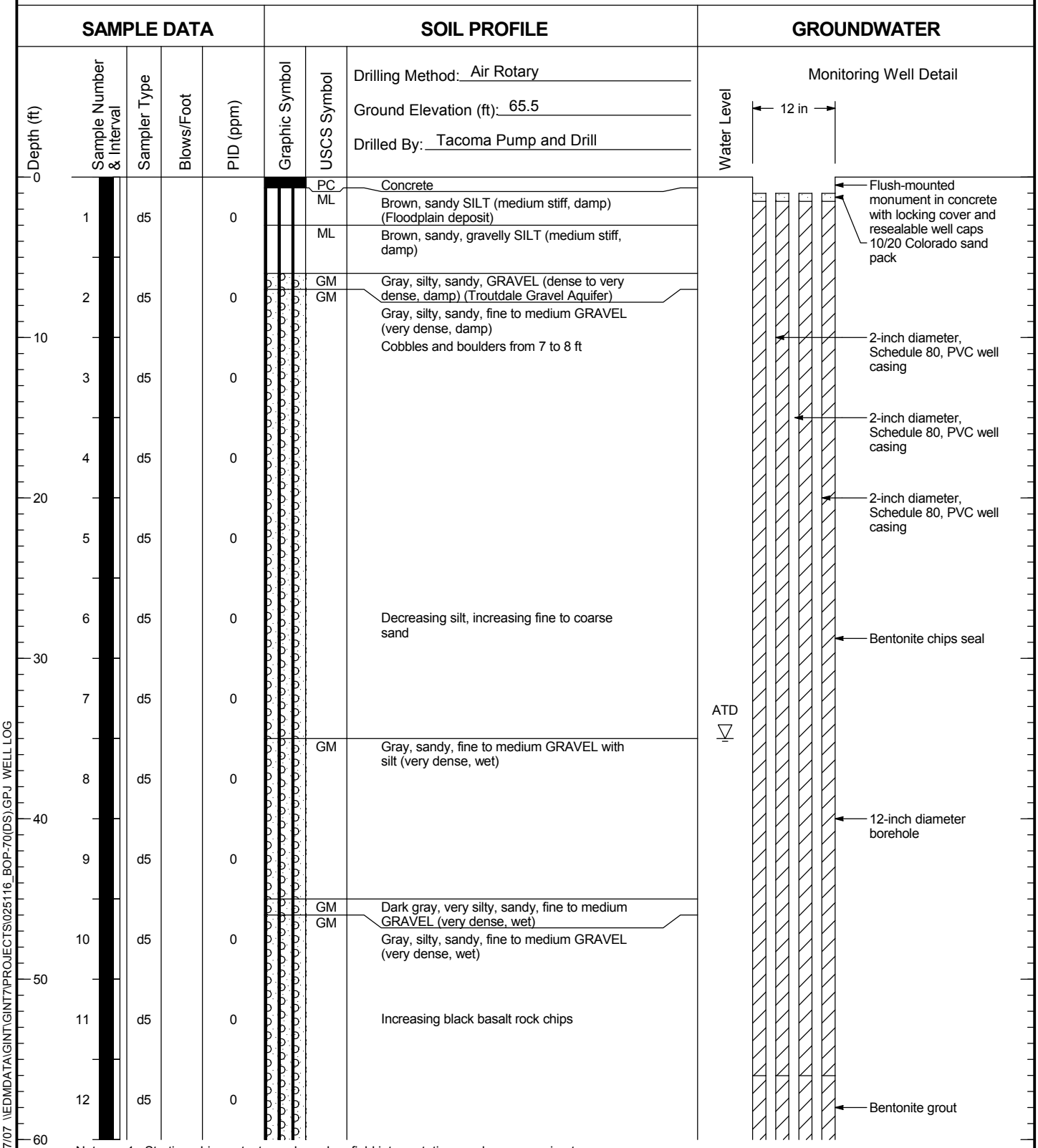
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate. Refer to the text for an explanation of subsurface conditions.
2. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
3. Experienced poor cuttings return in silt and siltstone units.

25110.61 Boeing Portland/RI Report (A) 10/95

Boring and Monitoring Well D-18dg

Figure A-1 (5 of 5)

BOP-70 (ds)



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-70(DS).GPJ WELL LOG

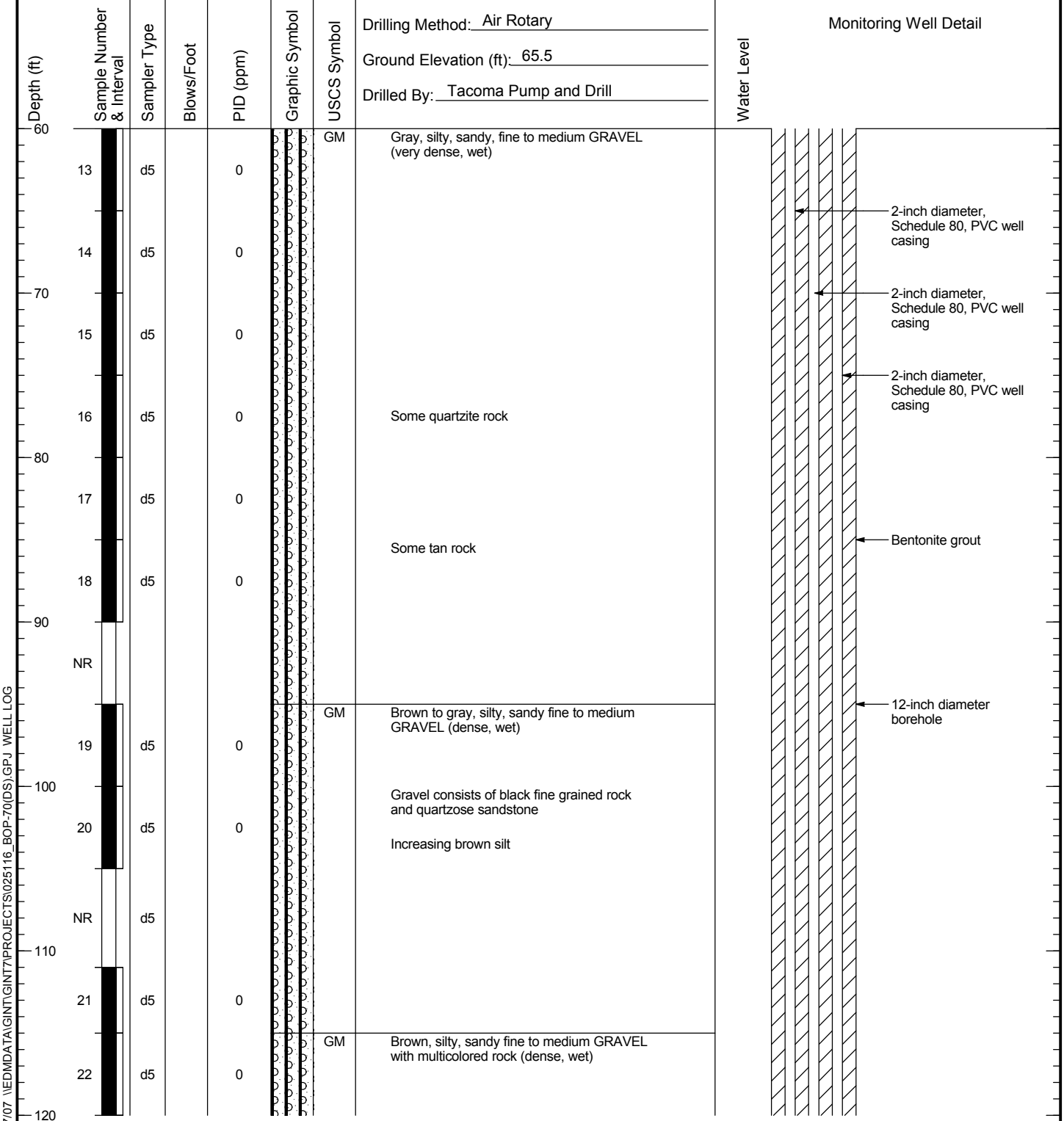
LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-70 (ds)

Figure
A-2
(1 of 5)

BOP-70 (ds)



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-70(DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy Portland, Oregon	Log of Monitoring Well BOP-70 (ds)	Figure A-2 (2 of 5)

BOP-70 (ds)

Drilling Method: Air Rotary
Ground Elevation (ft): 65.5
Drilled By: Tacoma Pump and Drill

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level	Monitoring Well Detail
120						GM	Brown, silty, sandy fine to medium GRAVEL with multicolored rock (dense, wet)		
	23	d5		0					
	24	d5		0					
130									BOP-70 (ds) Shallow: 2-inch diameter, Schedule 80, PVC well casing
	25	d5		0					
						GP	Gray to brown, sandy fine to medium GRAVEL (dense, wet)		BOP-70 (ds) Intermediate: 2-inch diameter, Schedule 80, PVC well casing
	26	b5		0					
140									BOP-70 (ds) Deep: 2-inch diameter, Schedule 80, PVC well casing
	27	d5		0					
	28	d5		0			Some cemented gravel, increasing sand content		
150									Bentonite grout
	29	d5		0					
						GP	Gray to brown, sandy GRAVEL some gravel cemented with clay (dense, wet)		
	30	d5		0					
160									12-inch diameter borehole (nominal)
	31	d5		0		SLS	Tan, SILTSTONE (Confining Unit 1)		
						SLS	Gray, SILTSTONE		
						SNS	Gray, SANDSTONE		
	32	d5		0		SNS	Dark brown to black, SANDSTONE (very dense, wet)		
						SNS	Dark brown, SANDSTONE with interbedded black and brown sand (very dense, wet)		
170	33	d5		0					
						SNS	Brown and dark brown, SANDSTONE with sand (very dense, wet)		
						SNS	Brown to black, fine to medium SANDSTONE (very dense, wet)		
	34	d5		0					
180									

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT\PROJECTS\025116_BOP-70(DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-70 (ds)

Figure
A-2
(3 of 5)

BOP-70 (ds)

Drilling Method: Air Rotary
Ground Elevation (ft): 65.5
Drilled By: Tacoma Pump and Drill

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level	Monitoring Well Detail
180						SNS	Brown and dark brown, SANDSTONE with sand and interbeds of dark gray siltstone		Bentonite grout
	35	d5		0					
						SNS	Black SANDSTONE and GRAVEL mix (very dense, wet)		2-inch diameter, Schedule 80, PVC well casing
	36	d5		0		SNS	Gray SILTSTONE and GRAVEL and some black SANDSTONE (dense, wet)		
190							Increasing siltstone		2-inch diameter, Schedule 80, PVC well casing
	37	d5		0		SNS	Brown and black, fine to medium SANDSTONE and GRAVEL with interbeds of soft blue-gray siltstone (medium dense, wet)		2-inch diameter, Schedule 80, PVC well casing
	38	d5		0					
200									12-inch diameter borehole
	39	d5		0					
						SNS	Black and tan, SANDSTONE and some gravels with pieces of light gray sandstone (dense to very dense, wet) (Troutdale Sandstone Unit).		Bentonite pellets seal
	40	d5		0					
210	41	d5		0					10/20 Colorado sand pack
						SNS	Black and brown, SANDSTONE (dense, wet)		
	NR	d5							BOP-70 (ds-215): 2-inch diameter, Schedule 80, PVC screen (0.010-inch slot size)
	NR	d5							
220									Threaded end cap
	NR	d5							
	NR	d5							
230									Bentonite pellets seal
	42	d5		0					
	43	d5		0					10/20 Colorado sand pack
240									

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-70(DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-70 (ds)

Figure
A-2
(4 of 5)

BOP-70 (ds)

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Air Rotary
Ground Elevation (ft): 65.5
Drilled By: Tacoma Pump and Drill

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
240						SNS	Black and brown, SANDSTONE (dense, wet)
	44	d5		0			
						SNS	Black, SANDSTONE and trace gravel (dense, wet)
	45	d5		0			
250							
	46	d5		0			
	47	d5		0			
260						SNS	Black, SANDSTONE (dense, wet)
	48	d5		0			
	49	d5		0			
270							
	50	d5		0			
	51	d5		0			
280						CGT	Black, sandy GRAVEL (dense, wet) (Troutdale Conglomerate Unit)
	52	d5		0			
	53	d5		0			
290							
300							

Water Level

Monitoring Well Detail

- 10/20 Colorado sand pack
- BOP-70 (ds-245) 2-inch diameter, Schedule 80, PVC screen (0.010-inch slot size)
- Threaded end cap
- 2-inch diameter, Schedule 80, PVC well casing
- Bentonite pellets seal
- 10/20 Colorado sand pack
- BOP-70 (ds-275) 2-inch diameter, Schedule 80, PVC screen (0.010-inch slot size)
- Threaded end cap
- Bentonite chips seal

Boring Completed 03/21/07
Total Depth of Boring = 283.0 ft.

Point located at State Plane Coordinates:
North: 691532.75
East: 1495082.90

Monitoring Well Completed 03/29/07
Elevation at Top of Monitoring Well Casing =
65.15 ft (Shallow);
65.13 ft (Intermediate);
65.12 ft (Deep)
Total Depth of Monitoring Well = 283.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-70(DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-70 (ds)

Figure
A-2
(5 of 5)

MULT 88516

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

WELL LABEL # L 88979

START CARD # 1000699

(1) LAND OWNER

Owner Well I.D. BOP-70(ds)

First Name _____ Last Name _____

Company THE BOEING COMPANY / CASCADE CORPORATION

Address 19000 NE SANDY BLVD.

City PORTLAND State OR Zip 97230

(2) TYPE OF WORK

[X] New [ ] Deepening [ ] Conversion
[ ] Alteration (repair/recondition) [ ] Abandonment

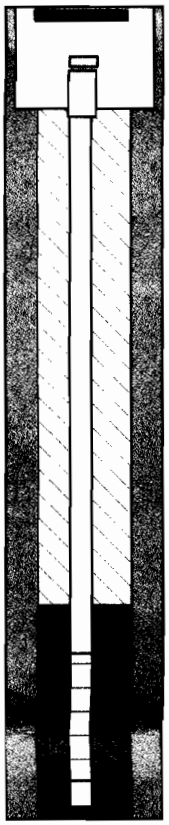
(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Hollow Stem Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other _____

(4) CONSTRUCTION

Piezometer Well [ ]

Depth of Completed Well 280 ft. Special Standard [X]



MONUMENT/VAULT Below Ground
From 0 To 1

BORE HOLE
Diameter 12 From 0 To 285

CASING
Dia. 2 From [ ] To _____
Gauge SCH 80 Wld Thrd
Material ◯ Steel ◉ Plastic [ ] [X]

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

SEAL
From 0 To 203
Material _____
Amount _____ Grout weight _____

SCREEN
Casing/Liner _____ Material SCH 80
Diameter 2 From _____ To _____
Slot Size .01

FILTER
From _____ To _____ Material _____ Size of pack 10/20

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

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

Temperature 53 °F Lab analysis [X] Yes By A.R.I.

Supervising Geologist/Engineer Doan Hamilton, Landau Associates

Water quality concerns? [ ] Yes (describe below)

From	To	Description	Amount	Units

RECEIVED
APR 30 2007
WATER RESOURCES DEPT
SALEM, OREGON

(6) LOCATION OF WELL (legal description)

County MULTNOM Twp 1 N N/S Range 3 E E/W WM
Sec 29 NE 1/4 of the SW 1/4 Tax Lot _____
Tax Map Number _____ Lot _____
Lat ° 0 ' " or _____ DMS or DD
Long ° 0 ' " or _____ DMS or DD
◯ Street address of well ◯ Nearest address

NE 185TH AVE. ONE BLOCK NORTH OF NE. SANDY BLVD. ON CITY RIGHT- OF-WAY

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening				
Completed Well	03-29-2007			68.3

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 35

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

(8) WELL LOG

Ground Elevation _____

Material	From	To
Concrete	0	8
Damp, brown fine sandy silt.	8	3
Damp brown silty medium sand & gravel, cobbles.	3	8
Dense gray silty medium sand & gravel.	8	97
Dense brown silty coarse gravel, wet.	97	135
Medium sandy gravel with light cementation, water.	135	163
Tan siltstone, water.	163	164
Gray siltstone, water.	164	165
Gray sandstone, water.	165	167
Dense medium black-brown sand & gravel interbedde	167	203
with soft blue-gray clayey silt, water.	167	203
Black sandstone, water	203	280
Black medium fine sand with gravel, water.	280	285

Date Started 03-06-2007 Completed 03-28-2007

(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 10508 Date APRIL 26 2007

Password : (if filing electronically) _____

Signed MATT GALL

(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 10067 Date APRIL 26 2007

Password : (if filing electronically) _____

Signed _____

Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

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

Form Version: 0.31

MULT 88516

MONITORING WELL REPORT - continuation page

WELL I.D. # L 88979

START CARD # 1000699

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
12	0	285

FILTER PACK

From	To	Material	Size
208	222	CSS	10/20
237	251	CSS	10/20
267	281	CSS	10/20

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight
Bentonite Chips	0	50	40	S	2,000
Bentonite Pellets	50	54	2	S	100
Bentonite Grout	54	203	62	P	9.5
Bentonite Pellets	203	208	7	S	350
Bentonite Pellets	222	237	16	S	800
Bentonite Pellets	251	267	26	S	1,300

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size
		2	211	221	.01			
		2	240.4	250.4	.01			
		2	270	280	.01			

(5) WELL TESTS

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

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

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

(8) WELL LOG

Material	From	To

Comments/Remarks

Please see attached drawing for construction information. 12" Casing shoe was cut off at 285' total depth

RECEIVED
APR 30 2007
WATER RESOURCES DEPT
SALEM, OREGON

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

MULT 88516

WELL I.D. # L 88979

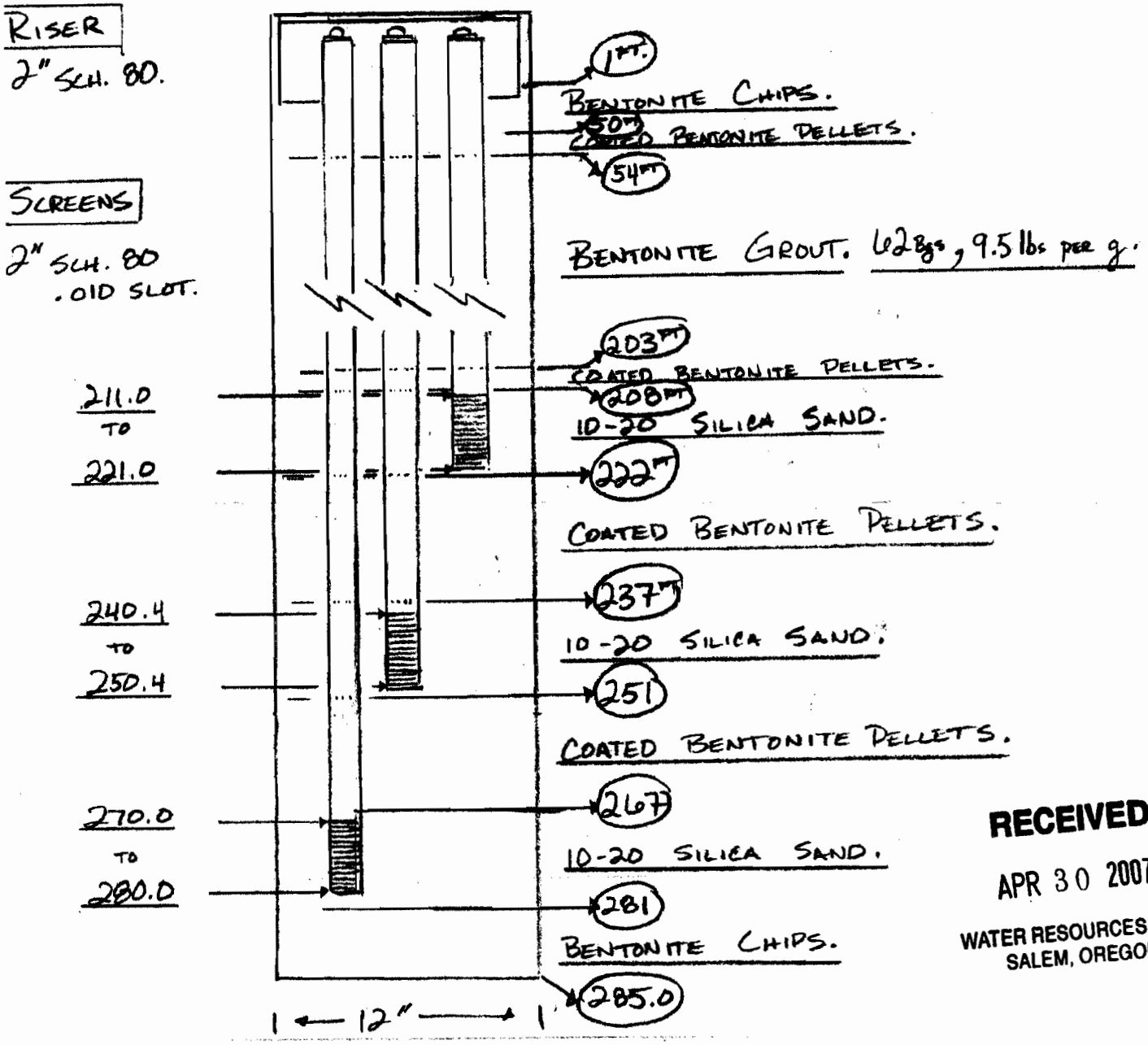
START CARD # 1000699

Map of well

WELL LABEL # L 88979

START CARD # 1000699

BOP-70(2-)



RECEIVED
APR 30 2007
WATER RESOURCES DEPT
SALEM, OREGON

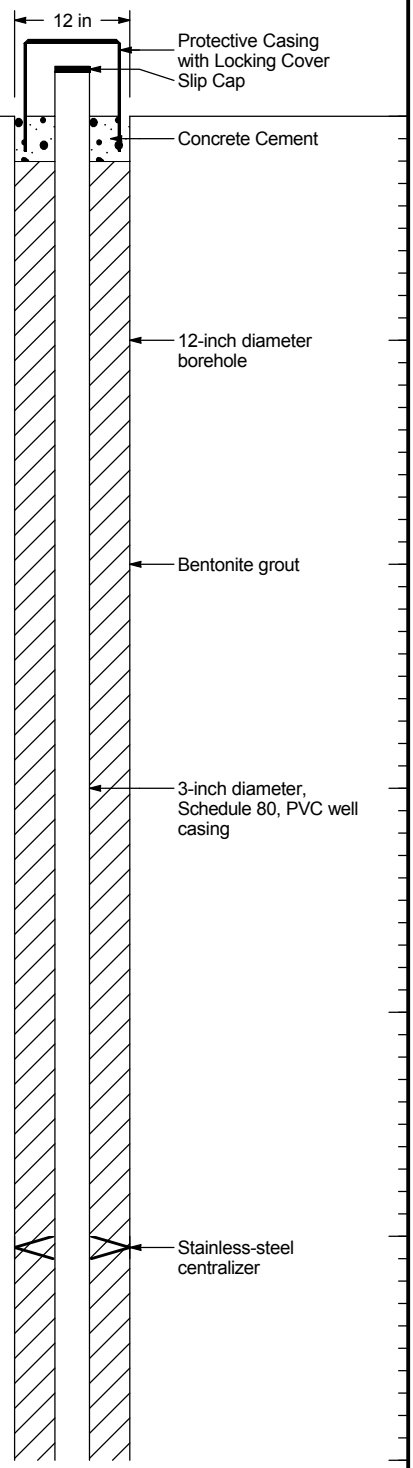
BOP-71 (ds)

Drilling Method: Air Rotary
Ground Elevation (ft): 85.6
Drilled By: Tacoma Pump and Drill

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0	1	d5		0		ML	Brown, sandy SILT (medium stiff, damp) (Floodplain deposit)
	2	d5		0		ML	Light brown to gray, sandy SILT with trace gravels (medium stiff, damp)
10	3	d5		0			Increasing sand
	4	d5		0		GM	Brown, silty, sandy fine to medium GRAVEL with boulders and cobbles (dense, damp) (Troutdale Gravel Aquifer)
	5	d5		0			
20	6	d5		0			
	7	d5		0			
30	8	d5		0			
	9	d5		0		GM	Brown, silty, sandy fine to medium GRAVEL with cobbles (medium dense, wet)
40	10	d5		0		GM	Brown to gray, silty, sandy fine to medium GRAVEL (dense, wet)
	11	d5		0			
50	12	d5		0			
	13	d5		0			
60							

Water Level: ATD ▽

Monitoring Well Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-71 (DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-71 (ds)

Figure
A-3
(1 of 6)

BOP-71 (ds)

Drilling Method: Air Rotary
Ground Elevation (ft): 85.6
Drilled By: Tacoma Pump and Drill

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level	Monitoring Well Detail
60						GM	Dark brown, sandy fine to medium angular GRAVEL with silt (dense, wet)		
	14	d5		0					12-inch diameter borehole
	15	d5		0					
70						GP	Dark brown-black, fine to medium GRAVEL (dense, wet) with very angular basalt chips		
	16	d5		0					
	17	d5		0					
80									Bentonite grout
	18	d5		0					
	19	d5		0					
90						ML	Dark brown, very fine to medium gravelly SILT interbed with rounded and subrounded gravels and boulders (very dense, wet)		3-inch diameter, Schedule 80, PVC well casing
	20	d5		0					
						GP	Gray, sandy fine to medium GRAVEL with black and tan cobbles and boulders (dense to very dense, wet)		
	21	d5		0					
100									Stainless-steel centralizer
	22	d5		0					
	23	d5		0					
110									
	24	d5		0					
						GM	Gray-brown, silty, sandy fine to medium GRAVEL (dense, wet)		
	25	d5		0					
120									

Notes:
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3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-71 (DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-71 (ds)

Figure
A-3
(2 of 6)

BOP-71 (ds)

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Air Rotary
Ground Elevation (ft): 85.6
Drilled By: Tacoma Pump and Drill

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description	Water Level	Monitoring Well Detail
120						GP	Black to tan, sandy, GRAVEL (dense, wet)		
	26	d5		0					
	27	d5		0			gravel fragments are white and tan and have a sandy matrix Increasing quartzite and chert		
130									12-inch diameter borehole (nominal)
	28	d5		0					
	29	d5		0					
	30	d5		0					
140						GP	Gray-brown, sandy, medium to coarse, very micaceous GRAVEL with some fine sand		Bentonite grout
	31	d5		0					
	32	d5		0					
150						GP	Gray-black, sandy, medium to coarse GRAVEL with multi-colored rock chips (dense, wet)		3-inch diameter, Schedule 80, PVC well casing
	33	d5		0					
	34	d5		0					
160									
	35	d5		0					
	36	d5		0					
170									Stainless-steel centralizer
	37	d5		0					
	38	d5		0					
180									

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-71 (DS).GPJ WELL LOG

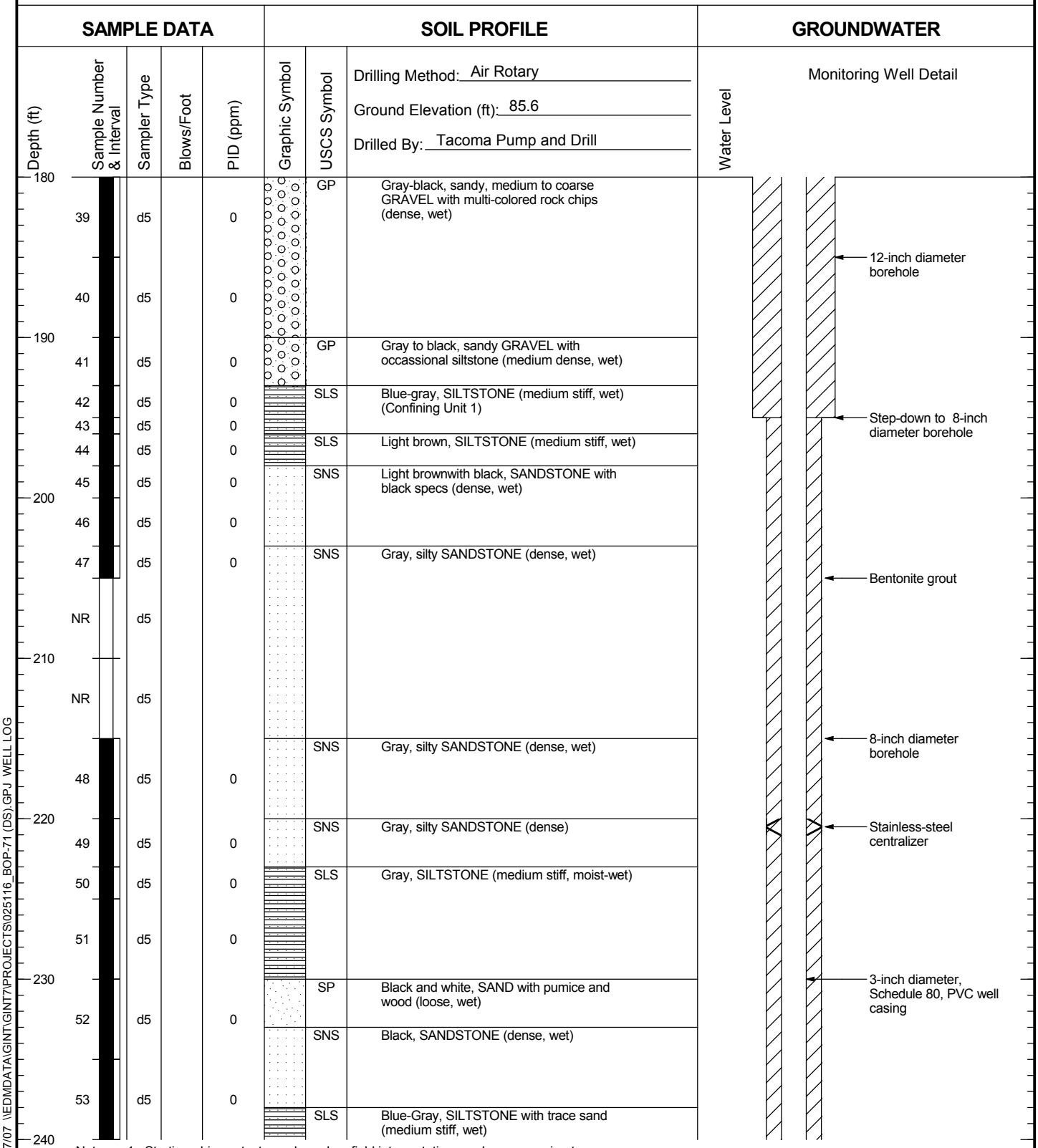
LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-71 (ds)

Figure
A-3
(3 of 6)

BOP-71 (ds)



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT\PROJECTS\025116_BOP-71 (DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

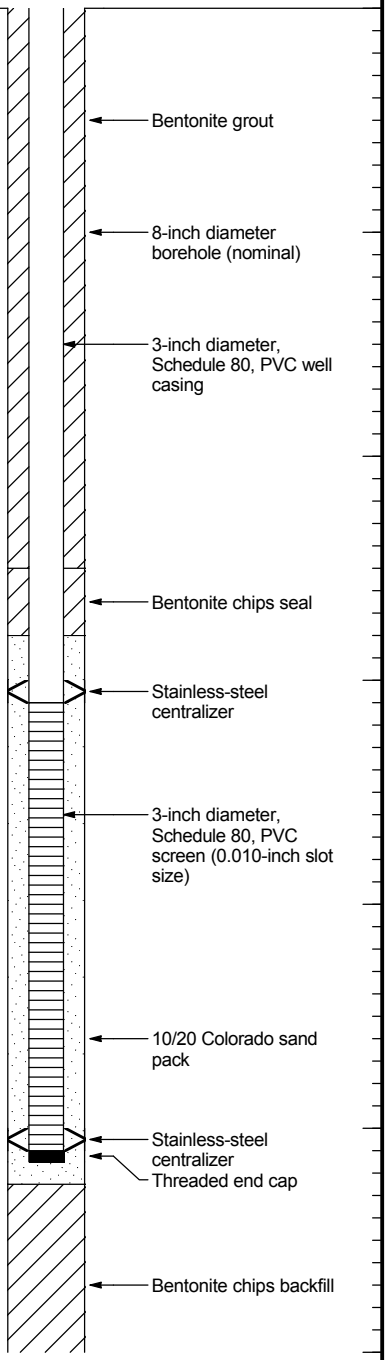
Log of Monitoring Well BOP-71 (ds)

Figure
A-3
(4 of 6)

BOP-71 (ds)

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Air Rotary Ground Elevation (ft): 85.6 Drilled By: Tacoma Pump and Drill	Water Level
240						SLS	Blue-Gray, SILTSTONE with trace sand (medium stiff, wet)	
	54	d5		0		SNS	Gray-Black SANDSTONE (dense, wet)	
	55	d5		0		SNS	Gray-green, very silty SANDSTONE (dense, wet)	
250	56	d5		0				
	57	d5		0				
260	58	d5		0		SNS	Blue-Gray, silty SANDSTONE (dense, wet)	
	59	d5		0		SNS	Black, highly fractured SANDSTONE (dense, wet) (Troutdale Sandstone Unit) Increase in formation water production	
270	60	d5		0				
	61	d5		0		SNS	Brown and black, SANDSTONE (dense, wet)	
	62	d5		0				
280	63	d5		0		SNS	Black, medium to coarse SANDSTONE (medium dense, wet)	
	64	d5		0		SNS	Black and brown, fine to medium SANDSTONE (medium dense, wet)	
290	65	d5		0		SNS	Blue-black, fine to medium SANDSTONE (dense, wet)	
	66	d5		0				
	67	d5		0				
300								

Monitoring Well Detail



Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT\PROJECTS\025116_BOP-71 (DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-71 (ds)

Figure
A-3
(5 of 6)

BOP-71 (ds)

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Air Rotary Ground Elevation (ft): 85.6 Drilled By: Tacoma Pump and Drill	Water Level	Monitoring Well Detail
300									
	68	d5		0		SNS	Blue-black SANDSTONE with some chert gravels (dense, wet) (TSA Sandstone)		
	69	d5		0			Increasing green and white rocks		
						CGT	Black, some multicolor GRAVELS (very dense, wet) (TSA Conglomerate)		
310									
320									
330									
340									
350									
360									

Boring Completed 02/20/07
Total Depth of Boring = 308.0 ft.

Point located at State Plane Coordinates:
North: 691381.33
East: 1494310.26

Monitoring Well Completed 03/01/07
Elevation at Top of Monitoring Well Casing = 87.88 ft.
Total Depth of Monitoring Well = 291.5 ft.

Notes:
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2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

25116. 8/17/07 \\EDMDATA\GINT\GINT7\PROJECTS\025116_BOP-71 (DS).GPJ WELL LOG

LANDAU ASSOCIATES

TSA Remedy
Portland, Oregon

Log of Monitoring Well BOP-71 (ds)

Figure
A-3
(6 of 6)

MULT 88124
03-19-2007

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0395)

WELL LABEL # L 88978

START CARD # 1000617

(1) LAND OWNER

Owner Well I.D. BOP71(ds)

First Name _____ Last Name _____

Company THE BOEING CO

Address 19000 NE SANDY BLVD

City PORTLAND State OR Zip 97230

(2) TYPE OF WORK

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

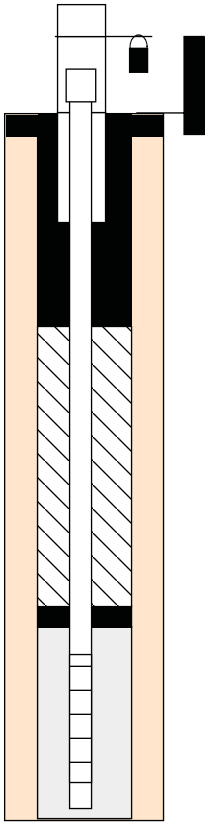
(3) DRILL METHOD

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

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 294 ft. Special Standard ☒



MONUMENT/VAULT Above Ground
From 0 To 3

BORE HOLE
Diameter 12 From 0 To 195

CASING
Dia. 3 From ☐ 2.5 To 291.5
Gauge Sch80 Wld Thrd
Material ◯ Steel ◉ Plastic ☐ ☒

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

SEAL
From 2 To 268
Material Bentonite Grout
Amount 68.00 S Grout weight 9.5

SCREEN
Casing/Liner _____ Material PVC
Diameter 3 From 271.5 To 291.5
Slot Size .020

FILTER
From 268 To 292.5 Material C.S.S. Size of pack 10/20

(5) WELL TESTS

◯ Pump ◯ Bailer ◯ Air ◯ Flowing Artesian

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

Temperature 54 °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer Doan Hamilton

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County **Multnomah** Twp **1.00** N N/S Range **3.00** E E/W WM
Sec **29** **NE** 1/4 of the **SW** 1/4 Tax Lot **N/A**
Tax Map Number _____ Lot _____
Lat ° ' " or _____ DMS or DD
Long ° ' " or _____ DMS or DD
◯ Street address of well ◯ Nearest address

ON THE RIGHT OF WAY NE SANDY BLVD BETWEEN NE 181ST AVE & NE 185TH AVE

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☐	
Completed Well	03-05-2007		☐	85

Flowing Artesian? ☐ Dry Hole? ☐
Depth water was first found _____

WATER BEARING ZONES

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

(8) WELL LOG

Ground Elevation _____

Material	From	To
Brown, medium, sandy silt.	0	18
Brown, medium silty sand, gravel cobbles, wet.	18	117
Dense black moist to wet medium course sandy gravel	117	189
Blue-gray silt stone.	189	194
Blue-gray silty sandstone.	194	196
Light brown interbedded siltstone and sandstone.	196	203
Interbedded gray siltstone and sandstone.	203	230
Course black sand, pumice with trace wood debris.	230	233
Dense, black sandstone.	233	238
Blue-gray siltstone.	238	243
Gray-black sandstone with interbedded brown with	243	280
gray siltstone.	243	280
Course black sand.	280	285
Medium black-brown sand.	285	290
Black course sand.	290	307
Black, tan, green, white medium course gravel.	307	308

Date Started 02-12-2007 Completed 03-05-2007

(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 _____ Date _____

Electronically Submitted
Signed _____

(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 10067 Date 03-19-2007

Electronically Submitted
Signed ERIC G HANSEN (E-filed)

Contact Info (optional) _____

ORIGINAL - WATER RESOURCES DEPARTMENT

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

Form Version: 0.31

MONITORING WELL REPORT - continuation page

MULT 88124
03-19-2007

WELL I.D. # L 88978

START CARD # 1000617

(4) CONSTRUCTION

BORE HOLE

Dia	From	To
8	195	308

FILTER PACK

From	To	Material	Size

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐

SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/ slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

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

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

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

(8) WELL LOG

Material	From	To

Comments/Remarks

Abandoned bottom 15.5 feet with bentonite chips before constructing well.

MULT 105510

04-06-2011

STATE OF OREGON
MONITORING WELL REPORT

(as required by ORS 537.765 & OAR 690-240-0395)

WELL LABEL # L 88978

START CARD # 1012737

(1) LAND OWNER

Owner Well I.D. BOP-71 (ds)

First Name _____ Last Name _____

Company THE BOEING COMPANY

Address 19000 NE SANDY BLVD

City PORTLAND State OR Zip 97230

(2) TYPE OF WORK

☐ New ☐ Deepening ☐ Conversion

☒ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD

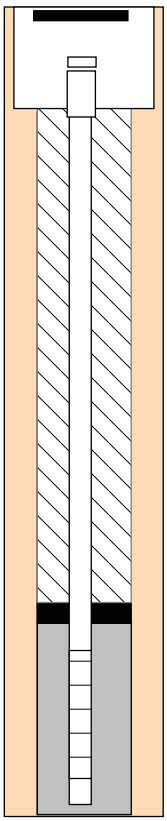
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud

☐ Reverse Rotary ☐ Other _____

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 0 ft. Special Standard ☐



MONUMENT/VAULT Below Ground

From _____ To _____

BORE HOLE

Diameter _____ From _____ To _____

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** N N/S Range **3.00** E E/W WM

Sec **29** **NE** 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

ON ROW -NE SANDY BLVD BETWEEN NE 181ST AVE & NE 185TH AVE

(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
Repaired & Replaced Above Ground Monument	0	0

Date Started 03-30-2011 Completed 03-30-2011

(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 1864 Date 04-06-2011

Electronically Submitted

Signed RICHARD E O WIGGINS (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 10563 Date 04-06-2011

Electronically Submitted

Signed FORD STIGALL (E-filed)

Contact Info (optional) _____

ORIGINAL - WATER RESOURCES DEPARTMENT

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

MONITORING WELL REPORT - continuation page

MULT 105510

04-06-2011

WELL I.D. # L 88978

START CARD # 1012737

(4) CONSTRUCTION

BORE HOLE

Dia	From	To

FILTER PACK

From	To	Material	Size

SEAL

Material	From	To	Amt	sacks/ lbs	grout weight

CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐

SCREENS

Perf/Screen	Casing/ Liner	Screen Dia	From	To	Scrn size/slot width	Slot length	# of slots	Tele/ pipe size

(5) WELL TESTS

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

Water Quality Concerns

From	To	Description	Amount	Units

(7) STATIC WATER LEVEL

Water Bearing Zones

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

(8) WELL LOG

Material	From	To

Comments/Remarks

Above Ground monument was damaged, interior casing intact. Replaced Above Ground monument and one bollard, repaired concrete.

RPW-1(ds)

Drilling Method: Cable Tool

Ground Elevation (ft) ~~4065 ft. (Preliminary Survey)~~ 10.9

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/6 inches	PID/Test Data	Graphic Symbol	USCS Symbol	Soil Profile
0						ML	Very dark gray, SILT with fine sand and trace clay; micaceous (moist, soft)
							Change in color to dark red-brown; increase in clay; decrease in sand
10							
							Change in color to very dark gray-brown
20							
	1	3					Increase in sand, small woody fibers; interbedded with dark red-brown clayey SILT with trace fine sand
30						SP	Dark gray, fine SAND grading into a dark green-gray SAND with silt (wet, soft)
40						SP/ML	Dark green-gray, fine SAND with occasional thin interbeds (<2") of very dark gray-brown SILT; both are micaceous with trace gravel and coarse sand (wet, soft)
	2	1a	22,70			SS	Black, fine to medium SANDSTONE with coarse SANDSTONE and trace brown, coarse silt; very slightly micaceous; moderately cemented (wet)
50	3	1a	54,100				
	4	3				SS/SLT	Dark gray, fine to medium SANDSTONE with fine SANDSTONE interbedded with dark brown SILTSTONE with clay; sandstone no to slight cementation; silt is moderately stiff (moist to dry)
60	5	1a	120			SLT	Dark gray, SILTSTONE with clay, trace sand; micaceous (moist, stiff)

(Continued Next Page)

Well Detail

14"

Bentonite Grout

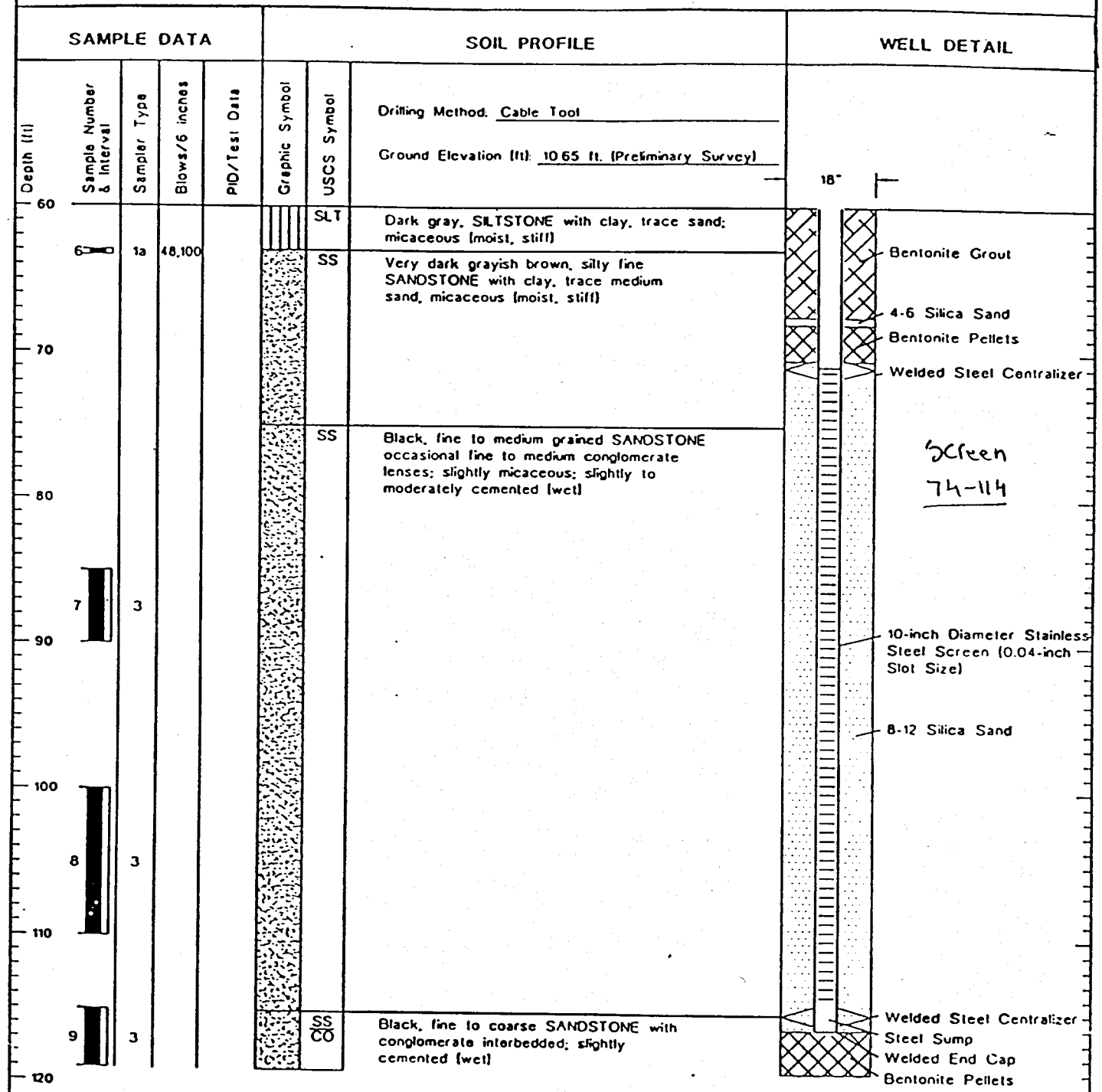
10-inch Diameter Steel Casing

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.
4. Well Completed by Emcon

Monitoring Well RPW-1(ds)

Figure 1

RPW-1(ds)



Boring Completed 07/29/93
Total Depth = 119.0

Well Completed 08/08/93
Elevation at Top of Well Casing = -1.0
Elevation at Top of PVC Casing = -1.0

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Key and Soil Classification System" figure for explanation of graphics and symbols.
4. Well Completed by Emcon

Monitoring Well RPW-1(ds) | Figure 1

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SALEM, OREGON

MULT 3952

1N/3E/20da

Page 1 of 2

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # 58103

(1) OWNER: Well Number RPW-1ds
Name Cascade Corp.
Address P.O.Box 20187
City Portland State Oregon Zip 97220

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☒ Cable
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Resource Protection Well

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 117 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
14"	0	119'	pure gold			
				0	67'	38 sacks

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from 70 ft. to 117 ft. Size of gravel sand 6-9C,S.S.

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	72	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) extracted

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☒ Screens Type v-wire Material S.S.

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
72	115	.040			10"P.S.	☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
700GPM	20'		1 hr.

Temperature of Water 56° Depth Artesian Flow Found
Was a water analysis done? ☒ Yes By whom Emcon N.W.
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude Longitude
Township 1N N or S. Range 3E E or W. WM.
Section 20 NE ¼ SE ¼
Tax Lot 75 Lot Block Subdivision
Street Address of Well (or nearest address)
Just south of Interlachen lane

(10) STATIC WATER LEVEL:
1 ft. below land surface. Date 8-8-93
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 40'

From	To	Estimated Flow Rate	SWL
40'	119'	1000GPM	1'

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
silt, very dark grey	0'	10'	
I.			
silt, dark red-brown	10'		
some clay		27'	
silt, more sand, some	27'		
clay, red-brown		32'	
sand, dark gray, w/ some	32'		
silt		39'	
sand, dark green	39'		
grey, w/ dark grey brown			
silt		46'	
sandstone, black, fine	46'		
medium, w/ some brown silt.		55'	
Sandstone, darkgrey w/	55'		
siltstone dark brown		57'	
siltstone, dark gray w/	57'		
clay		63'	
sandstone, dark greyish	63'		
brown w/ some clay		75'	
sandstone, black,fine-med	75'	115'	
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx			
continued...			

Date started Completed

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Clint Johanson WWC Number 1023 Date 1-3-94

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, 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 well construction standards. This report is true to the best of my knowledge and belief.

Signed WWC Number 10076 Date 1-3-94

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C (10/91)

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SALEM, OREGON

MULT 3952 Page 2952

1N/3E/20da

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # 58103

(1) OWNER: Well Number RPW-1ds
Name Cascade Corp.
Address P.O. Box 20187
City Portland State OR Zip 97220

(2) TYPE OF WORK:
☐ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material
Gravel placed from ____ ft. to ____ ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of Water ____ Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Multnomah Latitude ____ Longitude ____
Township 1N N or S. Range 3E E or W. WM.
Section 20 NE ¼ SE ¼
Tax Lot 75 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address)
Just south of Interlachen Lane

(10) STATIC WATER LEVEL:
1 ft. below land surface. Date 8-8-93
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found ____

From	To	Estimated Flow Rate	SWL
40'	119'		1'

(12) WELL LOG:
Ground elevation ____

Material	From	To	SWL
xxxxxxxxxxxxxxxxxxxxxxxxxxx			
sandstone, black fine-coarse	11	5'	
slightly cemented.		119'	

Date started 6/21/93 Completed 8/8/93

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Clint Johansen WWC Number 10023
Date 1-3-94

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, 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 well construction standards. This report is true to the best of my knowledge and belief.

Signed John R. Stuttle WWC Number 10096
Date 1-3-94

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91

MULT 104699

Mult 104699

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

WELL LABEL # L 58103

START CARD # ~~1011293~~ ~~1011293~~ 1011294

(1) LAND OWNER

Owner Well I.D. RPW-1 (DS)

First Name Michael Last Name Cereghino

Company

Address 20818 NE Wistful Vista Dr.

City Fairview State OR Zip 97024

(2) TYPE OF WORK

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

(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud
☐ Reverse Rotary ☐ Other

(4) PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Community
☐ Industrial/ Commericial ☐ Livestock ☐ Dewatering
☐ Thermal ☐ Injection ☒ Other Monitoring

(5) BORE HOLE CONSTRUCTION

Special Standard ☒ Attach copy

Depth of Completed Well _____ ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Filter pack from _____ ft. to _____ ft. Material _____ Size _____

Explosives used: ☐ Yes Type _____ Amount _____

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Shoe ☐ Inside ☐ Outside ☐ Other Location of shoe(s) _____

Temp casing ☐ Yes Dia _____ From _____ To _____

(7) PERFORATIONS/SCREENS

Perforations Method _____

Screens Type _____ Material _____

Perf/Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

○ Pump ○ Bailer ○ Air ○ Flowing Artesian

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

Temperature _____ °F Lab analysis ☐ Yes By _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County MULTNOM Twp 1 N N/S Range 3 E E/W WM

Sec 20 NE 1/4 of the SE 1/4 Tax Lot 100

Tax Map Number _____ Lot _____

Lat ° 0 ' " or _____ DMS or DD

Long ° 0 ' " or _____ DMS or DD

○ Street address of well ◉ Nearest address

West of Fairview Lake Way and South of Interlachen Lane, Fairview, OR

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			☒	1
Completed Well			☐	

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

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

(11) WELL LOG

Ground Elevation 10.9

Material	From	To
Extended 10" well casing from vault to 3' above grade and installed bollards.		
The vault the well was originally installed in was not removeable due to a large concrete mass outside of the vault so the bollards were installed within 20" of the casing.		
See attached original well log for original well construction details Start Card No. (??????????)		

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SALEM, OREGON

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NOV 04 2010
WATER RESOURCES DEPT
SALEM, OREGON

RECEIVED
JAN 14 2011
WATER RESOURCES DEPT
SALEM, OREGON

Date Started 09-10-2010 Completed 10-08-2010

(unbonded) Water 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 water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1751 Date 10-08-2010

Password : (if filing electronically)

Signed

(bonded) Water 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 water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1523 Date 10-08-2010

Password : (if filing electronically)

Signed

Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

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

Form Version: 0.95

MULT 104699

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. # L 58103

START CARD # 1011293

(5) BORE HOLE CONSTRUCTION

BORE HOLE

Dia	From	To

SEAL

Material	From	To	Amt	sacks/ lbs

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

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

Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL

Water Bearing Zones

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

(11) WELL LOG

Material	From	To

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JAN 14 2011
WATER RESOURCES DEPT
SALEM, OREGON

Comments/Remarks

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FEB 07 2011
WATER RESOURCES DEPT
SALEM, OREGON

Attachment 2
OWRD Special Standard Letters

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: Community Development Gresham ROW, Start Card number 1035837 is unfortunately denied; this denial is due to the fact that this is a nested well constructed under a Special Standards Request. All casings, screens, annular sealing material, drill cuttings, debris and filter pack must be removed prior to sealing. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 11-15-17 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen

10408 13600 SE Amblr Rd. Clackamas OR. 97015

(1) Location of Well: NE 1/4 SW 1/4 Tax lot ROW / 00400 Section 29,

Township 1 N, Range 3E W, Multnomah County

Address at well site: Gresham ROW NE 185th Dr.

(2) Start Card Number(s)(for work to be done): 1035837

(3) Name and Address of Land Owner: Community Development

Gresham ROW NE 185th Dr.

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: Clustered well located in northbound travel lane of NE 185th Dr. poor visability of traffic would like to be on/off hole as quickly as possible. large footprint VOC's ND

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in place, From bottomup with tremie pipe.

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JAN 10 2018

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Def-70(ds)

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface 0 to 3

Bentonite Seal 3 to T.D.

Blank Casing ____ to ____

Well Screen ____ to ____

Filter Pack ____ to ____

Well Diameter ____ to ____

Total Depth ____ to ____

Well Name	Orig Start Card	Depth
BOP-70ds	1000699	280 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge

Bonded Constructor Signature: _____

RECEIVED

JAN 10 2018

OWRD

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: Michael Cereghino, Start Card number 1035838 (BOP71(ds)) is hereby approved; you may decommission this monitoring well with cement grout as outlined on your Special Standards Request Form. All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 11-15-17 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen #10408 13600 SE Ambler Rd. Clackamas OR. 97015

(1) Location of Well: NE 1/4 SW 1/4 Tax lot 00202 / 00600 Section 29, Township 1 N, Range 3E W, Multnomah County

Address at well site: undeveloped agricultural field north of Sandy Blvd

(2) Start Card Number(s)(for work to be done): 1035838

(3) Name and Address of Land Owner: Michael Cereghino 20525 NE Wistful Vista Drive Fairview Oregon 97024

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: well is located very close to a rock retaining wall for sandy blvd and drive way for buildings/business adjacent to east. Both constructed after well install/setup for Rig difficult

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in place from bottom up with tremie pipe

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JAN 10 2018

ENF

OWRD

BOP - 71(ds)

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface	0	to	3
Bentonite Seal	3	to	T.D.
Blank Casing		to	
Well Screen		to	
Filter Pack		to	
Well Diameter		to	
Total Depth		to	

Well Name	Original Start	Depth
BOP-71(ds)	1000617	294

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge

Bonded Constructor Signature: _____

RECEIVED

JAN 10 2018

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Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: BT Property LLC, Start Card number 1035839 (D16ds) is hereby approved; you may decommission this monitoring well as outlined in your Special Standards Request Form. ***If you are going to use bentonite grout to abandon the well, then it may only be used to abandon the portion of the well that is below the static water level. Above the static water level another approved sealing material must be used.*** All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

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Oregon Water Resources Department
725 Summer Street NE. Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 1/10/17 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen

#10408 13600 SE Ambler RD. Clackamas OR 97015

(1) Location of Well: SW 1/4 SW 1/4 Tax lot 01900 Section 20,

Township 1 N, Range 3E E, Multnomah County

Address at well site: Undeveloped agricultural field north of Sandy Blvd and east of Portal way

(2) Start Card Number(s)(for work to be done): 1035839

(3) Name and Address of Land Owner: BT Property LLC

55 Glenlake PKWY NE Atlanta, GA 30328

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: VOC's ND Clustered Pair with D-16dg.

Would have to build gravel access road to drive across field to well for the heavy drill rig.

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in Place

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(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface ~~Concrete Seal~~ 0 to 3

Bentonite Seal 3 to T.D.

Blank Casing ____ to ____

Well Screen ____ to ____

Filter Pack ____ to ____

Well Diameter ____ to ____

Total Depth ____ to ____

Well Name	Orig Start Card	Depth
D-16 (ds)	1000617	152 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature: _____

RECEIVED

JAN 10 2018

OWRD

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: BT Property LLC, Start Card number 1037558 (D-16dg) is hereby approved; you may decommission this monitoring well as outlined on your Special Standards Request Form. All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

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Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 1/10/17 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen

#10408 13600 SE Ambler Rd. Clackamas OR, 97015

(1) Location of Well: NW 1/4 SE 1/4 Tax lot 01900 Section 20,

Township 1 N, Range 3 E, Multnomah County

Address at well site: Undeveloped agricultural field North of Sandy Blvd and east of portal way

(2) Start Card Number(s)(for work to be done): 1037558

(3) Name and Address of Land Owner: BT Property LLC

ATTN Real Estate Tax Dept. 55 Glenlake PKWY NE Atlanta, GA 30328

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: VOCs ND

Would have to build gravel pad to access field for heavy rig

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in Place

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(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface ~~[illegible]~~	0	to	3
Bentonite Seal	3	to	T.D.
Blank Casing		to	
Well Screen		to	
Filter Pack		to	
Well Diameter		to	
Total Depth		to	

Well Name	Orig Start Card	Depth
D-16(dg)	36679	241 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge

Bonded Constructor Signature: ______________________

RECEIVED

JAN 10 2018

OWRD

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: Western B Northwest Oregon LLC. C/O Marvin F Poer & Co., Start Card number 1035840 (D-18dg) is hereby approved; you may decommission this monitoring well as outlined on your Special Standards Request Form. All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

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Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 1/10/17 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen

#10408 13600 SE Ambler RD. Clackamas OR 97015

(1) Location of Well: SW 1/4 SW 1/4 Tax lot 00107 Section 20,

Township 1 N, Range 3E W, Multnomah County

Address at well site: 18792 NE Portal Way Gresham, OR 97203

(2) Start Card Number(s)(for work to be done): 1035840

(3) Name and Address of Land Owner: Western B Northwest OR LLC

Marvin F Poer and CO 18818 Teller Ave #277 Irvine, CA 92612

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: VOC's ND

Inside Building constructed on the top with door access in closet. No drill rig access

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in Place

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JAN 10 2018

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(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface ~~[illegible]~~	0	to	3
Bentonite Seal	3	to	T.D.
Blank Casing		to	
Well Screen		to	
Filter Pack		to	
Well Diameter		to	
Total Depth		to	

Well Name	Orig Start Card	Depth
D-18(dg)	75476	272 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature: [signature]

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: Western B Northwest Oregon LLC. C/O Marvin F Poer & Co., Start Card number 1035841 (D-18ds) is hereby approved; you may decommission this monitoring well as outlined on your Special Standards Request Form. All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

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Oregon Water Resources Department
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Salem Oregon 97301-1266
(503) 986-0900
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Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 11-15-17 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen #10408
13600 SE Ambler Rd. Clackamas OR 97015

(1) Location of Well: SW 1/4 SW 1/4 Tax lot 00107 Section 20,
Township 1N N, Range 3E W, Multnomah County
Address at well site: 18792

(2) Start Card Number(s)(for work to be done): 103584

(3) Name and Address of Land Owner: Western B Northwest OR LLC
c/o Marvin F Poer & Co. 18818 Teller Ave #277 Irvine Ca. 92612

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)
N/A

(5) The unusual site conditions which necessitate this request: Voc's(ND) A building was constructed adjacent to monitoring well and there is not access to overdrill

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)
Grout in place with tremie pipe from bottom up.

RECEIVED
JAN 10 2018
ENF
OWRD

D-18(ds)

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface	0	to	3
Bentonite Seal	3	to	T.D.
Blank Casing		to	
Well Screen		to	
Filter Pack		to	
Well Diameter		to	
Total Depth		to	

Well Name	Orig Start Card	Depth
D-18(ds)	75415	177 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature: _____

RECEIVED

JAN 10 2018

OWRD

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: Cascade Corporation, Start Card number 1035843 (VW-17D-42.5) is hereby approved; you may decommission this monitoring well as outlined in your Special Standards Request Form. All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

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Oregon Water Resources Department
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Salem Oregon 97301-1266
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Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 1/10/18 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen

#10408 13600 SE Ambler Rd. Clackamas OR, 97015

(1) Location of Well: SE 1/4 NE 1/4 Tax lot 01005 Section 29,

Township 1 N, Range 3 E, Multnomah County

Address at well site: 2525 NE 201st Ave. Gresham OR

(2) Start Card Number(s)(for work to be done): 1035843

(3) Name and Address of Land Owner: Cascade Corporation 2201 NE 201st Ave, Gresham OR

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: VOC's ND in Vapor

Vapor monitoring well that doesn't intersect groundwater

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in place

RECEIVED

JAN 10 2018

OWRD

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface ~~Concrete Seal~~	0	to	3
Bentonite Seal	3	to	T.D.
Blank Casing		to	
Well Screen		to	
Filter Pack		to	
Well Diameter		to	
Total Depth		to	

Well Name	Orig Start Card	Depth
VW-17d- 42.5	1015934	42 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature: _____

RECEIVED

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OWRD

Oregon
Kate Brown, Governor

Water Resources Department
North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us

January 12, 2018

PETER S. LARSEN MWC# 10408
CASCADE DRILLING LP
13600 SE AMBLER ROAD
CLACKAMAS, OREGON 97015

FINAL ORDER

Dear Mr. Larson:

The Special Standards Request Form you submitted for owner: Cascade Corporation, Start Card number 1035844 (VW-17D-75.0) is hereby approved; you may decommission this monitoring well as outlined on your Special Standards Request Form. All other monitoring well decommissioning rules shall be adhered to. A copy of your Special Standards Request Form is enclosed.

If you have any questions regarding this letter, I may be contacted at (503) 986-0852, or by e-mail at Joel.W.Jeffery@oregon.gov.

Sincerely,

Joel Jeffery, Coordinator
Well Construction Program
Well Construction and Compliance Section

enclosure

cc: Barry Sanford, Well Inspector: Northwest Region
File

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 1/10/18 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): Pete Larsen

#10408 13600 SE Ambler Rd. Clackamas OR. 97015

(1) Location of Well: SE 1/4 NE 1/4 Tax lot 01005 Section 29,

Township 1 N, Range 3 E, Multnomah County

Address at well site: 2525 NE 201st Ave. Gresham OR

(2) Start Card Number(s)(for work to be done): 1035844

(3) Name and Address of Land Owner: Cascade Corporation 2201 NE 201st Ave. Gresham OR

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

N/A

(5) The unusual site conditions which necessitate this request: VOC's ND in Vapor

Vapor monitoring well that doesn't intersect groundwater

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

Grout in place

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(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

Repair Surface ~~[illegible]~~	0	to	3
Bentonite Seal	3	to	T.D.
Blank Casing		to	
Well Screen		to	
Filter Pack		to	
Well Diameter		to	
Total Depth		to	

Well Name	Orig Start Card	Depth
VW-17d- 75	1015933	75 ft

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature: ______________________