

TECHNICAL MEMORANDUM

DATE: February 27, 2019

TO: Jeff Neuner, Seattle Public Utilities
Min Soon Yim, Seattle Public Utilities

FROM: Michael P. Brady, LG, LHG, EHS-International, Inc.
Laura Lee, Parametrix

SUBJECT: Kent Highlands Landfill Well Inventory

CC: Lisa Gilbert, Parametrix
Kurt Easthouse, EHS-International, Inc.
Project File

PROJECT NUMBER: 553-1550-063 02.0403

PROJECT NAME: Kent Highlands Landfill

INTRODUCTION AND BACKGROUND

The Kent Highlands Landfill (Site) encompasses approximately 113 acres of land located on the hillside and upland just west of the Green River Valley (see Figure 1). The landfill is composed of King County parcel numbers 726020115, 1522049066, 1522049008, 1522049007, 1522049012, 002000001, 000200003, 002000005, 002000010, 002000012, and 002000022. The landfill occupies a historical natural ravine that extended from the Des Moines upland easterly towards the Green River Valley floor. The elevation of the Site near the landfill ranges from 325 feet down to 35 feet above sea level. An engineered filling of a natural ravine on the hillside occurred from 1968 to 1986.

Seattle Public Utilities (SPU) used the landfill from 1968 to 1986 mainly for disposal of domestic and municipal garbage; however, from 1983 to 1986 industrial waste and construction debris also were disposed of. The site was placed on the National Priorities List (NPL) in 1990 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The U.S. Environmental Protection Agency (EPA) reached an agreement with the Washington State Department of Ecology (Ecology) to be the lead agency overseeing cleanup actions, and subsequently cleanup at the site has been performed under the regulations presented in the Model Toxics Control Act (MTCA; Chapter 173-340 Washington Administrative Code [WAC]).

Objectives

The Fourth Periodic Review (Ecology 2013) stated:

Update Water Well Inventory: Ecology is requesting a well survey be conducted across the river from the landfill to confirm that new water wells have not been installed in this area. We are requesting the scope of work be developed and the work accomplished in 2015. The results can be provided as a memorandum, initially directly to Ecology in 2015 or 2016, and later included as an appendix to the 2018 status report.

During a June 2015 periodic review status meeting, Ecology reiterated their request for a well records search to see if new water supply wells have been installed downgradient of the landfill, within a 1,000-foot radius on the east side of the Green River (Ecology 2015). The updated well inventory was requested by Ecology following the discovery of an unknown well (15J1) encountered east of the Green River near Russell Woods Park (SPU personal

communication 2018). Ecology was concerned the unknown well may have been a new well drilled since the Remedial Investigation (RI) was completed in 1990–1991 (CH2M HILL 1991).

To address this objective, this technical memorandum provides an updated well inventory for an approximate 1,000-foot radius around the landfill to be included in the status report. Additional wells downgradient of the landfill outside of the 1,000-foot radius are also included in the evaluation.

Surface Geology

The native surface geology of the subject property is mapped as several different geologic units correlating somewhat with topography. Booth & Waldron (2004) map the upland surface geology of the subject property primarily composed of Quaternary Vashon Till (Qvt) deposits. Lower in elevation, the Qvt directly overlies Quaternary Vashon Advance Outwash (Qva) deposits. Quaternary Pre-Fraser Coarse Grained (Qpfc) deposits are mapped below the Qva at further lower elevations along the historical ravine. At the base of the upland, Quaternary Vashon Ice-contact (Qvi) deposits are mapped, and at the base of the Green River Valley are Quaternary Alluvial (Qal) deposits.

Landfill Hydrostratigraphy

Prior investigations show the subsurface hydrogeology of the landfill site is complex with perched groundwater zones in addition to regional confining layers and aquifers. The RI (CH2M HILL 1991) delineated the geologic units of the area into site-specific hydrostratigraphic units including:

- The Landfill Aquifer (LA)
- Recent Alluvium Aquitard
- Recent Alluvium Aquifer (RAA)
- Upper Outwash Aquifer (UOA)
- Middle Outwash Aquifer (MOA)
- Lower Outwash Aquifer (LOA)
- Upper Silt Aquitard, Sand Aquifer (SA)
- Lower Silt Aquitard
- Gravel Aquifer (GA)

The LA is the uppermost hydrostratigraphic unit and consists of perched groundwater and leachate in the fill deposits of the landfill.

The Recent Alluvium Aquitard is composed of fine-grained silt deposits occurring near land surface within the Green River Valley. This unit serves as a confining layer for the underlying RAA.

The RAA is composed of water-bearing fine- to coarse-grained sand, silty sands, and sandy silts occurring within the alluvial deposits of the Green River Valley. The RI did not describe older alluvial deposits present at depth below the RAA deposits. Wells completed in the deeper alluvial valleys generally have higher hydraulic heads with depth indicative of upward flow towards the RAA (Woodward et al. 1995).

The UOA is composed of perched groundwater occurring within the sand and silty gravels. Groundwater within the UOA is generally within 20 feet of land surface where it is present.

The MOA is composed of water-bearing zones within finer-grained silty sand and silt deposits occurring in the middle of the outwash sand unit. This unit is generally a low permeability unit that primarily serves as a confining and/or perching layer because groundwater present in the unit is mostly composed of thin discontinuous zones.

The LOA is composed of water-bearing zones of silty and sandy gravel in the lower end of the outwash sand unit. The unit is generally unconfined on the northern portion of the landfill near the proposed gas probes; however, is confined at other areas of the landfill. This hydrostratigraphic unit generally forms the regional shallow aquifer of the Des Moines Upland.

The Upper Silt Aquitard is composed of low permeability silt, silty clay, and sandy silt occurring beneath the outwash sands. The unit varies in thickness from 30 to 100 feet but is a prominent hydrostratigraphic marker in the subsurface sequence due to its confining layer properties.

The SA occurs below the Upper Silt Aquitard and is composed of sand to sand and gravel. This unit serves as the regional intermediate aquifer of the Des Moines Upland and underlies nearly the entire study area. Near the Green River Valley, the unit is in hydraulic continuity with the RAA.

The Lower Silt Aquitard is a relatively thin unit of clayey silt, silt, and silty gravel occurring within nonglacial deposits below the sand aquifer. This low permeability unit serves as a confining layer and was generally encountered on the easternmost portion of the landfill site away from the proposed gas probes.

The GA is composed of sand and sandy gravel occurring below the easternmost portion of the landfill site away from the proposed gas probes. This unit is a 30- to 50-foot sequence of nonglacial sand and gravel deposits that likely serve as the regional sea level aquifer below the Des Moines Upland.

Current Monitoring Well Network

A total of 62 monitoring wells and piezometers have been drilled surrounding the landfill for water quality and water level monitoring. Table 1, attached, summarizes the wells and piezometers including their screen elevations and completion aquifers. Most of the monitoring points are in the SA and RAA, but four wells are completed in the LA, five wells are completed in the LOA, and five wells are completed in the underlying GA.

Currently, 41 of the wells, one surface water location, and two vaults are used to monitor water levels surrounding the landfill. Eleven of the wells are used for water quality monitoring in the SA and RAA (see Table 1). Figure 2, attached, displays the location of the monitoring wells, piezometers, vaults, and surface water monitoring locations for the landfill.

Groundwater Use

A previous water well inventory was completed as part of the RI in 1990 (AGI 1990a). The well inventory was originally Appendix G to the RI and is provided in Attachment B to this report. The previous well inventory identified 15 wells in the area surrounding the Site with many of the wells located within the Green River Valley. Several wells were initially sampled for water quality as part of the RI (AGI 1990b).

Since the RI in 1990-91, much of the area in the Green River Valley and north along the margin of the upland have been redeveloped for various residential, commercial, and industrial uses. Public drinking water now serves the majority of the area with public water supply wells outside the radius of influence of the landfill.

Sampling of Unknown Well 15J1

In 2014, SPU staff measured well 15J1 for depth and collected samples from the well's artesian flow for water quality testing. The well water quality analyses for the well are provided in Attachment A. The laboratory analyses did not detect any volatile organic compounds that would indicate degraded water quality due to the landfill.

UPDATED WELL INVENTORY

Methodology

The project team reviewed groundwater well databases available from Ecology, Washington State Department of Health (DOH) Drinking Water Division, King County Water and Land Services, the Washington State Water Supply Bulletin No. 28 (Luzier 1969), Water-Resources Investigation 92-4098 (Woodward et al. 1995), and the previously completed well inventory.

Using these databases, the team developed a table of water supply wells near the landfill, including well details of depth, surface elevation, screen interval (if available), well log availability, and source of the information. The updated well inventory was then used to evaluate use within the 1,000-foot radius.

Results

Table 2 displays the updated well inventory documenting a total of 15 water wells within the vicinity of the Site. Figure 3 displays the location and source aquifer for each of the water wells, and indicates whether the wells are not in use, not in use but operable, or in use or potentially in use. Additionally, well usage was reviewed, and the wells were delineated as Group A, Group B, or Group D (domestic supply), according to their use as follows (Revised Code of Washington [RCW] 70.119A.020):

- Group A water supply wells provide drinking water to 15 or more connections, or more than 25 people.
- Group B water supply wells provide drinking water to 15 or fewer connections, and no more than 25 people.
- Group D, or domestic wells, provide drinking water to one connection or household.

Copies of the well information (well logs, water rights, DOH data, parcel information, etc.) are provided In Attachment C. It should be noted that the 15 wells identified in the updated inventory differ from the previous well inventory. Only two of the wells in Table 2 (15E1 and 15M1) were identified in the previous inventory.

Of the wells in Table 2, two wells are completed in the UOA, one well is completed in the LOA, two wells are completed in the GA, and the remaining ten wells are completed in the RAA. It also should be noted that wells completed in deeper alluvial aquifers have been identified as completed within the RAA for the purposes of this technical memorandum.

Five wells are in use or potentially in use: wells 14Q1, 14Q2, 15H1, 22A2, and 22H1. Two of the wells are for domestic purposes (22A2 and 22H1), two are likely for irrigation purposes (14Q1 and 14Q2), and one is a monitoring well (15H1). Three additional wells are likely operable or accessible (14L2, 15E1, and 15J1) but not currently in use. Five of the wells are abandoned or decommissioned (10Q1, 15A1, 15M1, 15P1, and 23D1).

As noted in Table 2, only five of the 15 wells are within a 1,000-foot radius of the landfill (15H1, 15J1, 15M1, 15P1, and 22A1). None of the five wells are believed to be in use. One of the five wells is likely a monitoring well for the City of Kent (15H1), and another of the wells is the well previously investigated by SPU (15J1).

DISCUSSION

The City of Kent recently drilled monitoring wells for the improvement of Veterans Drive. One of the wells, 15H1, was reported as a water well and drilled at the intersection of Veterans Drive and Frager Road, approximately 700 feet north of the landfill. This improvement project was completed in 2006 to 2007; therefore, it is unknown if the well is still present or in use for monitoring.

Although outside the 1,000-foot radius, the following wells are pertinent to this discussion:

- One relatively new well, the Stearns well (22A2), was drilled by Bison Well Drilling and Septic of Spanaway, Washington in 2016 to a depth of 65 feet below ground surface within the RAA approximately 1,200 to 1,400 feet south of the landfill's southern border at 24519 Frager Road South. A residence was developed on this property in 2018 indicating the well is likely active and used for domestic purposes.
- Three wells were identified for the Lakes Development on the opposite side of the Green River (wells 14L1, 14L2, and 14Q1; see Figure 3). Group A water rights were historically applied for, but the development is currently served by the City of Kent drinking water. There are no records of decommissioning logs for the wells, and one of the wells was deepened in 2004 suggesting the wells may remain in use potentially for irrigation purposes. Although outside the 1,000-foot radius, due to the completion within the RAA, it may be prudent to verify whether the wells are still in use. An additional well, 14Q2, is adjacent to 14Q1 and may be related to the Lakes Development. This well is much deeper, completed at approximately 501 feet below the valley floor. It may be potentially in use related to irrigation.

While researching Ecology Water Rights for the area surrounding the landfill, numerous historical surface water rights for the Green River and local springs and seeps were encountered for areas surrounding the landfill. Most of these surface water rights do not appear to be in current use. However, there may be current surface water uses related to the residential developments across the river for beautification purposes (i.e., the Lakes Development). Information obtained from the historical water rights application for the Lakes Development show at least one historical surface water dike from the Green River into the subdivision located adjacent to the address of 23903 57th Court South, which is southeast of the landfill and upgradient along the river. However, additional surface water pump houses may be located elsewhere. Verification of the surface water withdrawal locations is outside the scope of this study.

Several Group B and domestic wells were historically sampled as part of the RI. The wells were included in the initial well inventory for the RI; however, their proximity to the landfill is greater than 1 mile and the wells are not relevant to the updated well inventory.

CONCLUSIONS

Ecology databases show one well has been drilled within 1,000 feet of the landfill since the RI. The City of Kent's well (15H1) was reported as a water well in Ecology databases, but it was a monitoring well for the Veterans Drive improvement project. It is unknown if the well remains in use as a monitoring well.

Three historical wells are located outside the 1,000-foot radius for the Lakes Development on the opposite side of the Green River that may still be in use for irrigation purposes. One of the wells was deepened in 2004 suggesting the well remains in use. Water quality concerns from the landfill are limited based upon recent monitoring, but if the wells remain active they could provide additional confirmation points, if needed, for future characterization of existing or emerging contaminants.

There is a new active domestic well (22A2/Stearns well) drilled in 2016 approximately 1,200 to 1,400 feet south of the landfill that is serving a newly constructed residence. The well was drilled within the RAA on the west side of the Green River.

Well 15J1 was discovered within 1,000 feet of the landfill on the opposite side of the Green River at the last periodic review in 2013. The only documented information for this well is related to SPU's characterization performed following its discovery. Information suggests this is not a new well and was likely drilled well before the RI.

Ecology and other databases are limited when it comes to historical wells that pre-date documentation. The Green River Valley has been actively used for agriculture since the middle to late 19th century and historical wells may be present that are unaccounted for in available databases. The updated well inventory researched all appropriate databases to determine wells within the 1,000-foot radius of the landfill. Well 15J1, previously investigated by SPU, appears to be a historical well; however, abandoned wells such as this well may be present within 1,000 feet of the landfill and remain undocumented.

RECOMMENDATIONS

Additional groundwater monitoring of existing Site wells or additional sampling of surrounding wells beyond the 2014 sampling of well 15J1 does not appear to be necessary. However, based upon the results of the updated well inventory, the project team developed the following recommendations:

- Confirm with the City of Kent that well 15H1 is solely used for groundwater monitoring or has been properly decommissioned.
- Contact the owner of well 22A2 to confirm use and discuss sampling of the well and risks associated with wells within 1,000 feet of closed landfills.
- Contact the Lakes Development on the opposite side of the Green River to identify active surface water or groundwater withdrawal points to evaluate current or future risks related to the landfill.

REFERENCES

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- AGI. 1990b. Selection of Off-Site Wells, Fourth and Fifth Groundwater Sampling Round Technical Memorandum—Kent Highlands Landfill RI/FS Phase II, as prepared for CH2M HILL and presented as Appendix G of the RI, provided in Attachment B.
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Ecology (Washington State Department of Ecology) – Water Resources Explorer GIS Program. Available online at: <https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx>.

DOH (Washington State Department of Health) – Sentry Intranet well and water quality database. Available online at: <https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx>.

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FIGURES

- 1 Vicinity Map
- 2 Kent Highlands Monitoring Well Locations
- 3 Water Well Location Map

TABLES

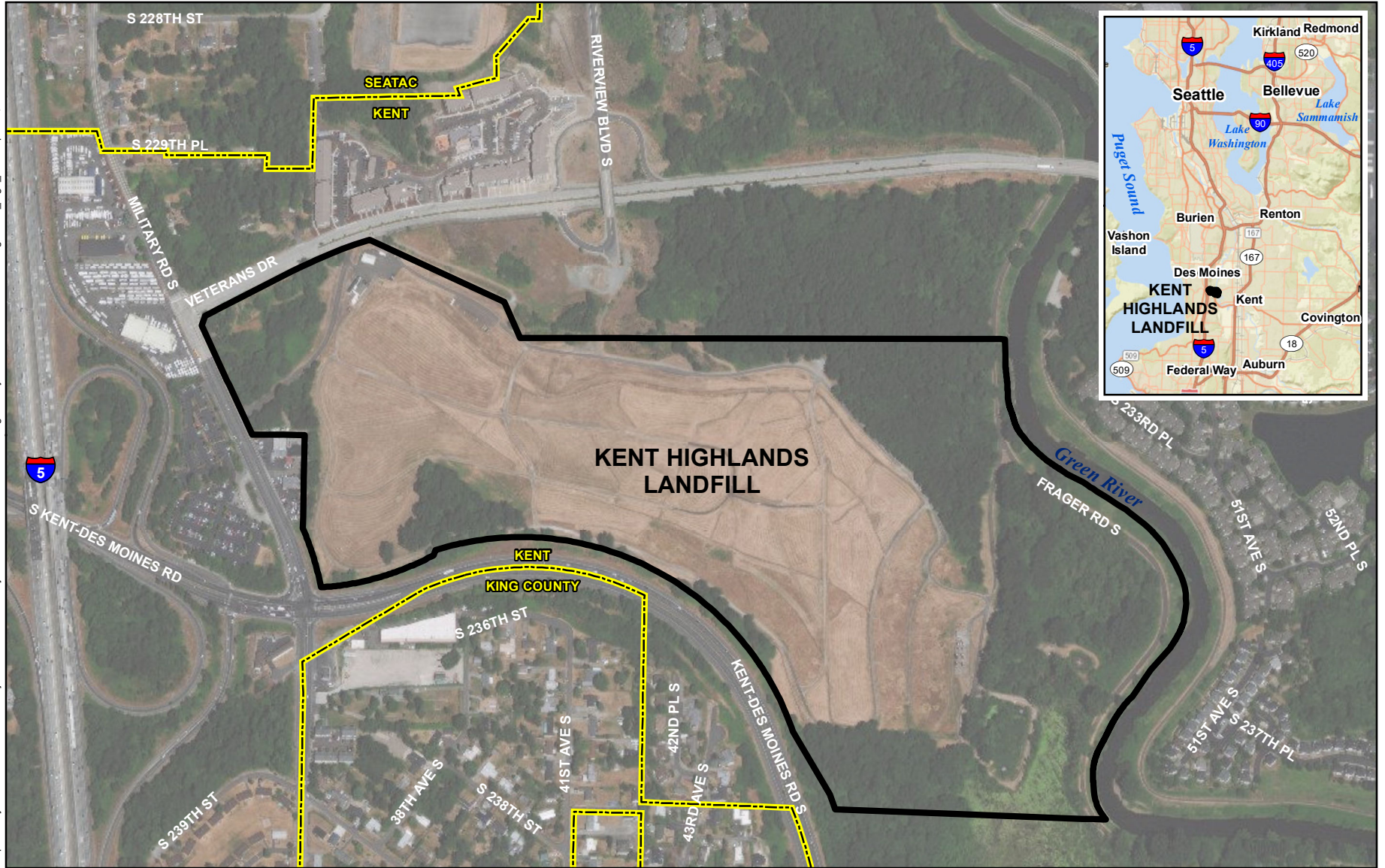
- 1 Kent Highlands Monitoring Well Details
- 2 Updated Water Well Inventory

ATTACHMENTS

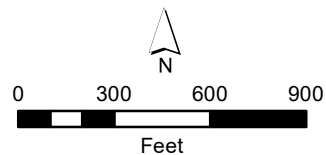
- A Well 15J1 Water Quality Analysis
- B RI Well Inventory
- C Water Well Logs and Backup Information

Figures



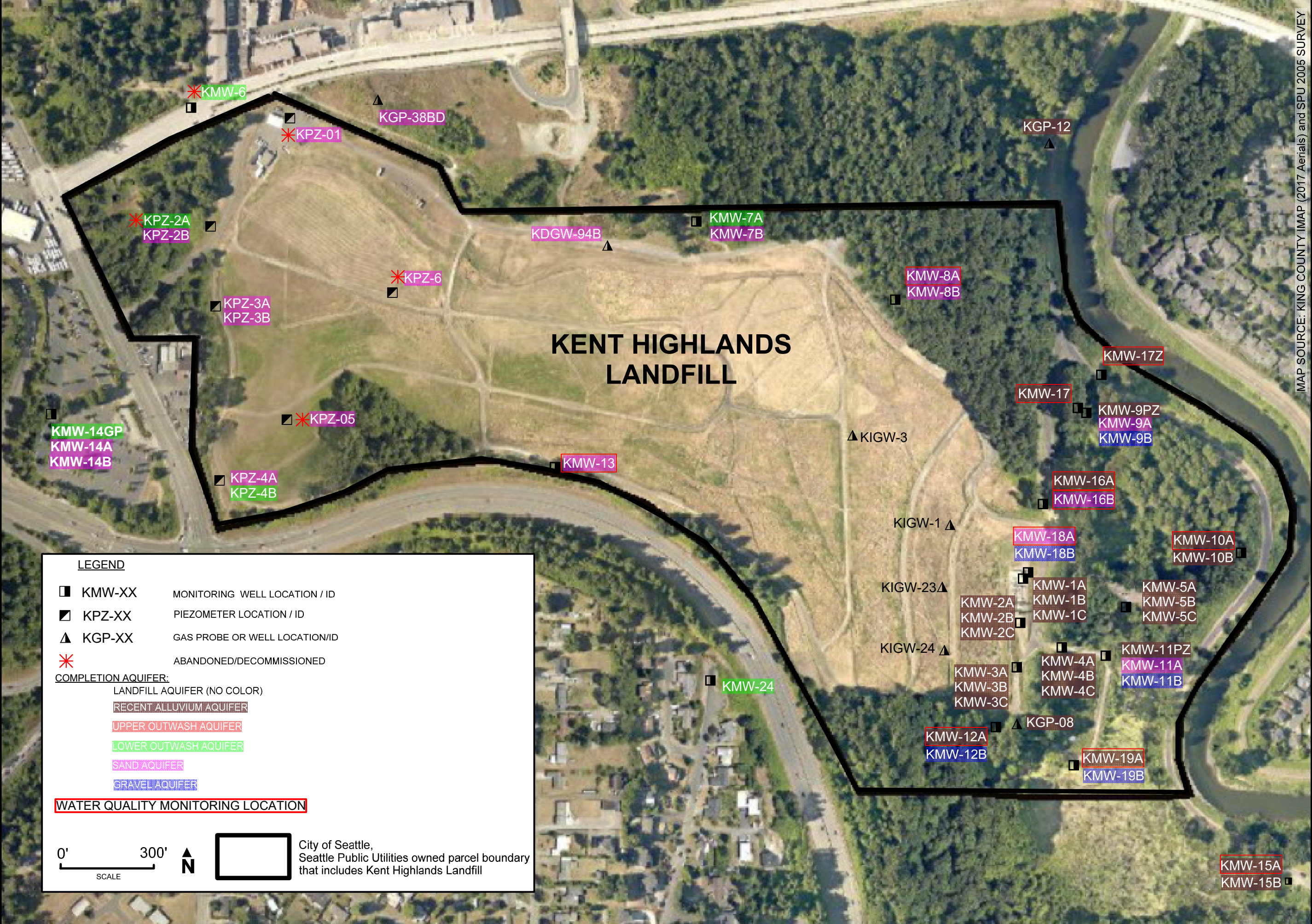


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- City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Kent Highlands Landfill
- City Limit

Figure 1
Site Location Map
Kent Highlands Landfill
Kent, Washington



MAP SOURCE: KING COUNTY IMAP (2017 Aerials) and SPU 2005 SURVEY

FIG. 2
MONITORING WELL
LOCATION MAP

SEATTLE PUBLIC UTILITIES
KENT HIGHLANDS LANDFILL
UPDATED WATER WELL INVENTORY

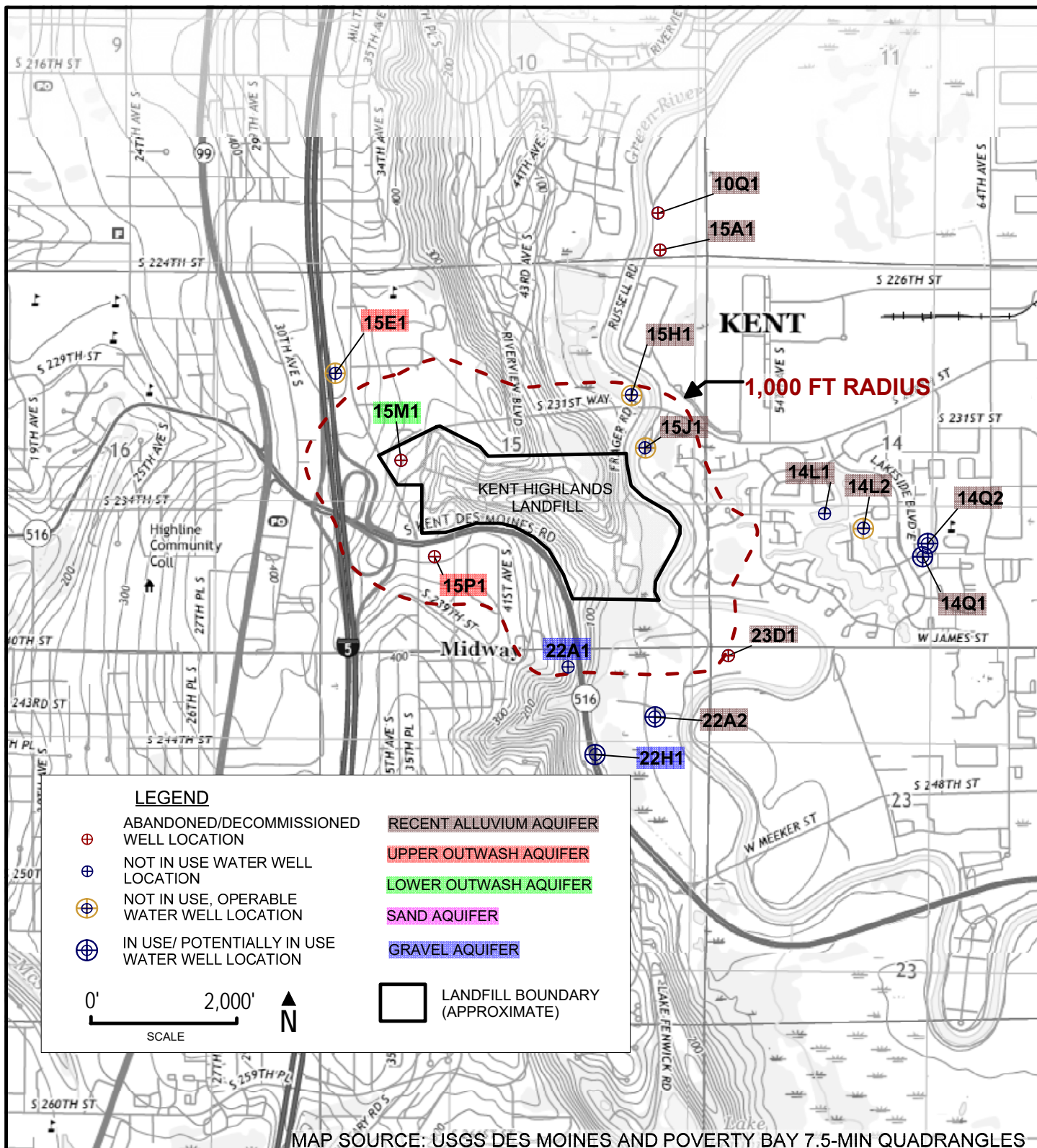
PM: K EASTHOUSE
PROJ.# 10887
DRAWN BY: M BRADY
ISSUE DATE: 02/13/19
DRAWN IN: SURFER



1011 SW KLUCKITAT WAY, STE 104
SEATTLE, WA 98134
PH: 206.381.1128
FAX: 206.254.4279



719 2ND AVENUE, SUITE 200
SEATTLE, WA 98104 | P 206.394.3700



1011 SW KICKITAT WAY, STE 104
SEATTLE, WA 98134
PH: 206.381.1128
FAX: 206.254.4279

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

719 2ND AVENUE, SUITE 200

SEATTLE, WA 98104 | P 206.394.3700

SEATTLE PUBLIC UTILITIES
KENT HIGHLANDS LANDFILL
UPDATED WATER WELL INVENTORY

PM: K EASTHOUSE

PROJ.#: 10887

DRAWN BY: M BRADY

ISSUE DATE: 02/15/19

DRAWN IN: SURFER

FIG. 3
WATER WELL
LOCATION MAP

Tables

Table 1. Kent Highlands Landfill Monitoring Well Details												
Well ID	Meas Pt Elev (ft MSL)	North (NAD 83)	East (NAD 83)	Screen (ft BGS)	Screen Elevation (ft MSL)	Depth to GW (ft BGS)	SWL Elevation (ft MSL)	Aquifer	Water Level Monitoring	Water Quality Monitoring	Pump type	Notes on Well
KIGW-1	109.78	145955.730	1283009.008	16.5 - 46.5	93.5 - 63.5	46.48	63.30	LA	x		N/A	Gas extraction well
KIGW-3	188.64	146271.011	1282674.482	19 - 124.5	170 - 64.5	118.61	70.03	LA	x		N/A	Gas extraction well
KIGW-23	112.85	145749.268	1282982.029	17 - 60	96 - 53	64.25	48.60	LA	x		N/A	Gas extraction well
KIGW-24	105.27	145547.467	1282981.242	21 - 56	84 - 49	53.90	51.37	LA	x		N/A	Gas extraction well
KDGW-94B	264.99	146895.770	1281900.640	108 - 148	151.2 - 111.2	N/A	N/A	SA	x		N/A	Gas extraction well (blocked at 100 ft)
KGP-08	41.3	145288.445	1283242.284	3 - 13	36 - 26	8.98	32.32	RAA	x		N/A	3/4-inch gas probe
KGP-12	41.76	147254.870	1283337.610	4 - 14	35.3 - 25.3	6.85	34.91	RAA	x		N/A	3/4-inch gas probe
KGP-38BD	291.03	147411.165	1281063.615	176 - 181	124.5 - 119.5	148.98	142.05	SA	x		N/A	3/4-inch gas probe
KMW-1A	49.76	145776.929	1283253.858	13.9 -15.9	28.8 - 26.8	N/A	N/A	RAA			N/A	4-inch well
KMW-1B	49.76	145776.929	1283253.858	23.8 -25.8	18.9 - 16.9	10.53	39.23	RAA	x		N/A	4-inch well
KMW-1C	49.76	145776.929	1283253.858	35.9 - 37.9	6.8 - 4.8	10.38	39.38	RAA	x		N/A	4-inch well
KMW-2A	49.11	145628.709	1283246.130	10 - 12	31.2 - 29.2	N/A	N/A	RAA			N/A	4-inch well
KMW-2B	49.11	145628.709	1283246.130	23.4 - 25.4	17.8 - 15.8	12.99	36.12	RAA	x		N/A	4-inch well
KMW-2C	49.11	145628.709	1283246.130	39.9 - 41.9	1.3 - -0.7	16.68	32.43	RAA	x		N/A	4-inch well
KMW-3A	41.66	145478.127	1283230.045	14.6 - 16.6	26.2 - 24.2	N/A	N/A	RAA			N/A	4-inch well
KMW-3B	41.66	145478.127	1283230.045	24.6 - 26.6	16.2 - 14.2	7.94	33.72	RAA	x		N/A	4-inch well
KMW-3C	41.66	145478.127	1283230.045	40.1 - 42.1	0.7 - -1.3	9.58	32.08	RAA	x		N/A	4-inch well
KMW-4A	38.06	145550.899	1283382.997	12.5 - 14.5	23.8 - 21.8	N/A	N/A	RAA			N/A	4-inch well
KMW-4B	38.06	145550.899	1283382.997	21.6 - 23.6	14.7 - 12.7	17.39	20.67	RAA	x		N/A	4-inch well
KMW-4C	38.06	145550.899	1283382.997	39.2 - 41.2	-2.9 - -4.9	N/A	N/A	RAA			N/A	4-inch well
KMW-5A	38.46	145682.530	1283596.153	16.1 - 18.1	20.1 - 18.1	N/A	N/A	RAA			N/A	4-inch well
KMW-5B	38.46	145682.530	1283596.153	23.6 - 25.6	12.6 - 10.6	20.93	17.53	RAA	x		N/A	4-inch well
KMW-5C	38.46	145682.530	1283596.153	38.3 - 40.3	-2.1 - -4.1	N/A	N/A	RAA			N/A	4-inch well
KMW-6	330.34	147382.714	1280433.677	102 - 132	224.7 - 194.7	N/A	N/A	LOA			N/A	Well destroyed
KMW-7A	255.11	147004.325	1282141.174	155 - 165	98 - 88	136.41	118.70	SA	x		Manual (Old)	2-inch well
KMW-7B	255.11	147004.325	1282141.174	240 - 250	13 - 3	139.09	116.02	SA	x		Manual (Old)	3.5-inch well
KMW-8A	202.73	146732.399	1282819.578	160 - 170	39.9 - 29.9	138.19	64.54	SA	x	x	Bennett	2-inch well
KMW-8B	202.73	146732.399	1282819.578	238.7 - 248.7	-38.8 - -48.8	144.14	58.59	SA	x		Manual (Old)	2-inch well
KMW-9PZ	38.31	146358.294	1283448.511	24.7 - 29.7	11.4 - 6.4	3.80	34.51	RAA	x		N/A	3/4-inch piezometer
KMW-9A	38.31	146358.294	1283448.511	67.5 - 77.5	-31.4 - -41.4	4.98	33.33	SA	x		Manual (Old)	2-inch well
KMW-9B	38.31	146358.294	1283448.511	117.5 - 122.5	-81.4 - -86.4	N/A	N/A	GA			Manual (Old)	2-inch well
KMW-10A	38.99	145871.411	1283984.382	30 - 40	6 - -4	26.55	12.44	RAA	x	x	Bennett	2-inch well
KMW-10B	38.99	145871.411	1283984.382	60 - 70	-24 - -34	22.93	16.06	RAA	x		Manual (Old)	2-inch well
KMW-11PZ	38.82	145516.187	1283527.970	25 - 30	7.9 - 2.9	17.00	21.82	RAA	x		N/A	3/4-inch piezometer
KMW-11A	38.82	145516.187	1283527.970	60 - 70	-27.1 - -37.1	10.98	27.84	SA	x		Manual (Old)	2-inch well
KMW-11B	38.82	145516.187	1283527.970	100 - 110	-67.1 - -77.1	N/A	N/A	GA			Manual (Old)	2-inch well
KMW-12A	53.58	145281.251	1283160.051	39 - 43	10.5 - 6.5	29.80	23.78	SA	x	x	Bennett	2-inch well
KMW-12B	53.58	145281.251	1283160.051	97 - 101	-47.5 - -51.5	N/A	N/A	GA			N/A	2-inch well
KMW-13	273.75	146157.968	1281665.866	195 - 205	77.8 - 67.8	75.43	198.32	SA	x	x	Bennett	2-inch well
KMW-14GP	321.73	146395.292	1279981.849	97.2 - 137.2	224.4 - 183.9	N/A	N/A	LOA			N/A	3/4-inch gas probe
KMW-14A	321.73	146395.292	1279981.849	178.5 - 188.5	142.6 - 132.6	74.16	247.57	SA	x		Manual (Old)	2-inch well
KMW-14B	321.73	146395.292	1279981.849	247.5 - 252.5	73.6 - 68.6	84.37	237.36	SA	x		Manual (Old)	2-inch well
KMW-15A	40.3	144726.868	1284109.621	35 - 40	2.5 - - 2.5	29.09	11.21	RAA	x	x	Bennett	2-inch well
KMW-15B	40.3	144726.868	1284109.621	98.9 - 103.9	-61.4 - -66.4	19.69	20.61	RAA	x		Manual (Old)	2-inch well
KMW-16A	47.56	146037.936	1283329.962	15 - 25	30.8 - 20.8	9.57	37.99	RAA	x	x	Bennett	2-inch well
KMW-16B	47.56	146037.936	1283329.962	65 - 75	19.2 - -29.2	11.26	36.30	SA	x	x	Bennett	2-inch well
KMW-17	38.42	146364.836	1283441.692	25.3 - 35.3	10.8 - 0.8	25.42	13.00	RAA	x	x	Bennett	2-inch well
KMW-17Z	39.33	146461.776	1283526.768	26 - 36	13 - 3	27.00	12.33	RAA	x	x	Bennett	2-inch well
KMW-18A	48.94	145795.125	1283270.062	60 - 65	-13.8 - -18.8	10.45	38.49	SA	x	x	Bennett	2-inch well
KMW-18B	48.94	145795.125	1283270.062	109 - 114	-62.8 - -67.8	N/A	N/A	GA			Manual (Old)	2-inch well
KMW-19A	37.68	145151.649	1283422.072	19 - 29	13.5 - 3.5	16.33	21.35	RAA	x	x	Bennett	2-inch well
KMW-19B	37.68	145151.649	1283422.072	99.5 - 104.5	-67 - -72	N/A	N/A	GA			Manual (Old)	2-inch well
KMW-24	249.14	145447.248	1282183.203	51 - 61	198.2 - 188.2	N/A	N/A	LOA			N/A	2-inch well
KPZ-01	269	147364.546	1280788.871	220 - 270	49 - -1	N/A	N/A	SA			N/A	Piezometer is lost
KPZ-02A	308.21	146979.581	128501.030	118 - 123	187.2 - 182.2	N/A	N/A	LOA			N/A	Piezometer is lost
KPZ-02B	308.21	146979.581	128501.030	280 - 285	25.2 - 20.2	147.95	160.26	SA	x		N/A	2-inch well
KPZ-03A	297.92	146710.548	1280516.044	152 - 177	137.1 - 112.1	N/A	N/A	SA			N/A	2-inch well
KPZ-03B	297.92	146710.548	1280516.044	229 - 239	60.1 - 50.1	87.76	210.16	SA	x		N/A	2-inch well
KPZ-04A	284.97	146120.380	1280530.776	110 - 160	164.8 - 114.8	N/A	N/A	LOA			N/A	Piezometer between 4B and steel casing
KPZ-04B	284.97	146120.380	1280530.776	185 - 195	89 - 79	52.34	232.63	SA	x		N/A	2-inch well
KPZ-05	271.22	146351.707	1280767.973	155 - 196	113.6 - 72.6	N/A	N/A	SA			N/A	Piezometer is lost
KPZ-06	270	146748.512	1281103.188	195 - 226	75 - 44	N/A	N/A	SA			N/A	Piezometer is lost
KSWS-1	37.89			N/A	N/A	22.27	N/A	N/A	x		N/A	Green River Surface Water
A(South)	55.83			N/A	N/A	26.38	29.45	N/A	x		N/A	South Leachate Vault
B(North)	64.04			N/A	N/A	26.04	38.00	N/A	x		N/A	North Leachate Vault

Notes:

Active wells used for water level or water quality monitoring

Inactive wells not used for water level or water quality monitoring

Abandoned/decommissioned

Water levels from September 12, 2017

LA = Landfill Aquifer

RAA = Recent Alluvium Aquifer

LOA = Lower Outwash Aquifer

SA = Sand Aquifer

GA = Gravel Aquifer

N/A = Not available

BGS = Below ground surface

MSL = Mean sea level

Coordinates converted from NAD 27 to NAD 83 (some historical coordinates do not appear to correlate to known map position)

Table 2. Updated Water Well Inventory

Well ID (T/R/S QQ)	Map ID	North	East	Owner	Address	Well Depth (ft BGS)	Surf. Elev. (ft MSL)	Screen Int. (ft BGS)	Log?	Likely Aquifer ¹	Aquifer Basis	Source(s) ²	WL (ft BGS)	Use ³	Source of Use Info	Notes	Operable?	Accessible	Well Type	Loc Quality ⁴	Within 1,000 ft?	Completion Elevation (ft MSL)	Water Level Elevation (ft MSL)
22N-04E-10Q1	10Q1	150257.289	1283910.724	Shumate	22262 Russell Rd	56	73	56	N	RAA	Location	WSB 28, KCA	37	NIU	KCA	Well likely destroyed	No	No	Group D	Q	No	17	36
22N-04E-14L1	14L1	146114.371	1286207.370	Lakes 1	23534 55th Ave S	48.5	35	35 - 45	Y	RAA	Location	ECY WR, KCA	9.82	NIU	KCA	On public water supply	Unlikely	No	Group A	E	No	-10	25.18
22N-04E-14L2	14L2	145912.201	1286745.258	Lakes 3	5920 S 235th St	48.7	35	35 - 45	Y	RAA	Location	ECY WR, KCA	8.6	NIU	KCA	On public water supply	Likely	Yes	Group A	E	No	-10	26.4
22N-04E-14Q1	14Q1	145518.135	1287561.628	Lakes 2 & Lakes 2 re-drill	23605 60th Ave S	98	35	49-94	Y	RAA	Location	ECY WR, ECY, KCA	4	PIU	ECY	Original well 45 ft Well deepened in 2004	Yes	Yes	Group A	E	No	-59	31
22N-04E-14Q2	14Q2	145697.025	1287625.712	Centron Properties / Island Park	6200 S 236th St	501	35	477-501	Y	RAA	Location	ECY	2	PIU	ECY	Drilled in 1988	Likely	Yes	Group D	A	No	-466	33
22N-04E-15A1	15A1	149747.149	1283938.315	OR-WA Railroad	22300 Russell Rd	N/A	35	N/A	N	RAA	Location	ECY WR, KCA	N/A	NIU	KCA	On public water supply, likely abandoned	Unlikely	Yes	Group D	E	No	N/A	N/A
22N-04E-15E1	15E1	148047.789	1279463.544	Davidson	22811 Military Rd S	24	401	N/A	N	UOA	Completion elev.	Imap, WSB 28	N/A	NIU	KCA	On public water supply	Likely	Yes	Group D	P	No	N/A	N/A
22N-04E-15H1	15H1	147750.994	1283544.963	City of Kent	228th and Frager Rd	55	50	25 - 55	Y	RAA	Location	ECY	24	PIU	KCA	Possibly for roadway construction	Unknown	Yes	Monitoring?	P	Yes	-5	N/A
22N-04E-15J1	15J1	147020.570	1283730.187	Unknown	Russell Woods Park	354.3	37	N/A	N	RAA	Location	SPU	-1	NIU	SPU	Seasonal flowing artesian	Yes	Yes	Unknown	E	Yes	-317	37+
22N-04E-15M1	15M1	146847.608	1280366.569	Shaw	23056 Military Rd S	68	320	N/A	N	LOA	Completion elev.	Imap, WSB 28	54	NIU	KCA	On landfill property	No	Yes	Group D	P	Yes	252	N/A
22N-04E-15P1	15P1	145519.822	1280828.890	Pet Haven	23646 Military Rd S	17	315	17	Y	UOA	Completion elev.	ECY, ECY WR	9	NIU	ECY, KCA	Decommissioned	Decom	No	Group D Irrigation	P	Yes	298	306
22N-04E-22A1	22A1	143998.344	1282671.250	Unknown	4331 S 239th Pl	220	220	N/A	N	GA	Completion elev.	Imap, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	I	Yes	0	N/A
22N-04E-22A2	22A2	143307.605	1283865.418	Stearns	24519 Frager Rd S	65	40	55 - 60	Y	RAA	Location	ECY, Imap, KCA	13	PIU	KCA	New well, on private water supply, site vacant	New well	Yes	Group D	A	No	-25	27
22N-04E-22H1	22H1	142791.264	1283049.768	Eckland	24421 Frager Rd S	N/A	75	N/A	N	GA	Wellhead elev.	ECY WR, KCA	N/A	IU	KCA	On private water supply	Yes	Yes	Group D	E	No	N/A	N/A
22N-04E-23D1	23D1	144154.031	1284879.200	Unknown (Orphan)	24202 Frager Rd S	41	33	N/A	Y	RAA	Location	Imap, ECY, KCA	N/A	NIU	KCA	On public water supply, site is vacant, likely abandoned	Unlikely	No	Group D	I	No	N/A	N/A

Notes:

¹Likely Aquifer:

RAA = Recent Alluvium Aquifer
UOA = Upper Outwash Aquifer
LOA = Lower Outwash Aquifer
GA = Gravel Aquifer

²Sources:

WSB 28 = Water supply bulletin 28
KCA = King County Assessor
ECY WR = Ecology Water Resources Explorer
ECY = Ecology Well Logs
Imap = King County iMAP groundwater well database
SPU = Seattle Public Utilities

³Use:

NIU = Not in use
PIU = Potentially in use
IU = In use

⁴Location Quality:

Q = Quarter/Quarter
A = Address matching
P = Parcel
I = Imap
E = Exact, map provided by sources

= In use or potentially in use wells
 = Operable wells
 = Decommissioned/destroyed/abandoned
N/A = Information Not Available
BGS = Below ground surface
MSL = Mean sea level

Attachment A

Well 15J1 Water Quality Analysis



Mike Brady

From: Yim, Min-Soon <Min-Soon.Yim@seattle.gov>
Sent: Monday, September 22, 2014 1:27 PM
To: Neuner, Jeff
Subject: Mysteriouse well

Hi, Jeff.

Kent mysterious well depth was measured at 9/19/2014.

It was 354.3 feet.

I am using the nylon line, so it will be little bit error but less than 1 foot.

Best Regards.

Min Soon Yim

Utility Manager II

Landfill Closure/Household Hazardous Waste

23076 Military Road So. Kent, WA 98032

TEL: (206) 233-2629 | FAX:(206) 233-2618

min-soon.yim@seattle.gov



Analytical Resources, Incorporated

Analytical Chemists and Consultants

19 November 2014

Min-Soon Yim
Seattle Public Utilities
23076 Military Road South
Kent, WA 98032

RE: Client Project: Mysterious Well
ARI Job: ZJ68

Dear Min:

Please find enclosed the original chain of custody record and the final results for the sample from the project referenced above. One water sample was received on November 10, 2014. The sample was analyzed for VOAs, vinyl chloride, alkalinity, anions and cations as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOA analysis of this sample. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The RPD for vinyl chloride was high following the analyses of the LCS/LCSD associated with the SIM-vinyl chloride analysis of this sample. This was due to the high percent recovery for the LCSD. Since vinyl chloride was not detected in sample 'Kent-Mysterious Well', the high bias does not compromise the RL. No corrective actions were taken.

A matrix duplicate (MD) was prepared and analyzed for nitrate+nitrite in conjunction with this sample. The RPD for nitrate+nitrite was high following the analysis of the MD. Since the concentrations of nitrate+nitrite detected in the sample and the MD were close to reporting limit, no corrective actions were taken.

There were no further analytical problems noted.

A copy of these reports and all supporting data will be kept on file with ARI. Should you have any questions please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: File ZJ68

MDH/mdh

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 1368	Turn-around Requested:	
ARI Client Company: City of Seattle/ Seattle Public Utilities	Phone:	(206) 233-2629
Client Contact:		
Min-Soon Yim		
Client Project Name:		
Kent Highlands Landfill		
Client Project #:	Samplers:	
	Min Soon Yim	

[illegible]

Comments/Special Instruct	Relinquished by: (Signature)	Received by: (Signature)
Conductivity = 1813 μ S	Printed Name:	Printed Name:
	Min Soon Yim	
Temperature = 12.2 $^{\circ}$ C	Company:	Company:
	SPU /Kent-Highland Landfill	
	Date & Time:	Date & Time:
	11/10/2014	10:35

Date:	11/10/14	
Page:	1	of 1
No. of Coolers:	Cooler Temps. 23.6	

[illegible][illegible][illegible]

		Received by: (Signature)	
		Printed Name:	
		Company:	
		Date & Time:	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment s



Cooler Receipt Form

ARI Client: SPU

Project Name: Kent Highlands LF

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 2368

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? _____

YES ☒ NO ☐

Were custody papers included with the cooler? _____

YES ☒ NO ☐

Were custody papers properly filled out (ink, signed, etc.) _____

YES ☒ NO ☐

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time: _____

5.6

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 9087932

Cooler Accepted by: TS Date: 11-10-14 Time: 10:35

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? _____

YES ☐ NO ☒

What kind of packing material was used? ... Bubble Wrap ☒ Wet Ice ☒ Gel Packs ☒ Baggies ☒ Foam Block ☒ Paper ☒ Other: _____

Was sufficient ice used (if appropriate)? _____

NA ☐ YES ☒ NO ☐

Were all bottles sealed in individual plastic bags? _____

YES ☐ NO ☒

Did all bottles arrive in good condition (unbroken)? _____

YES ☒ NO ☐

Were all bottle labels complete and legible? _____

YES ☒ NO ☐

Did the number of containers listed on COC match with the number of containers received? _____

YES ☒ NO ☐

Did all bottle labels and tags agree with custody papers? _____

YES ☒ NO ☐

Were all bottles used correct for the requested analyses? _____

YES ☒ NO ☐

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...

NA ☐ YES ☒ NO ☐

Were all VOC vials free of air bubbles? _____

NA ☐ YES ☐ NO ☒

Was sufficient amount of sample sent in each bottle? _____

YES ☒ NO ☐

Date VOC Trip Blank was made at ARI: _____

NA ☐

Was Sample Split by ARI: ☒ YES ☐ NO Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TS Date: _____ Time: _____

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions: TB 2 "pb"

By: TS Date: 11-10-14

Small Air Bubbles ~2mm 	Peabubbles 2-4 mm 	LARGE Air Bubbles > 4 mm
Small → "sm" (< 2 mm)		
Peabubbles → "pb" (2 to < 4 mm)		
Large → "lg" (4 to < 6 mm)		
Headspace → "hs" (> 6 mm)		

PRESERVATION VERIFICATION 11/10/14

Page 1 of 1

Inquiry Number: NONE
 Analysis Requested: 11/10/14
 Contact: Yim, Min-Soon
 Client: SPU
 Logged by: TS
 Sample Set Used: Yes-481
 Validatable Package: No
 Deliverables:



ARI Job No: ZJ68

PC: Mark
 VTSR: 11/10/14

Project #:
 Project: Kent Highlands Landfill
 Sample Site:
 SDG No:
 Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN	WAD	NH3	COD	FOG	MET	PHEN	PHOS	TKN	NO23	TOC	S2	TPHD	Fe2+	DMET DOC FLT FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-24417 ZJ68A	Kent-Mysterious Well	>12	>12	<2	<2	<2	TOT 2.15	<2	<2	<2	<2	<2	>9	<2	<2						

Checked By TS Date 11-10-14

Sample ID Cross Reference Report



ARI Job No: ZJ68
Client: SPU
Project Event: N/A
Project Name: Kent Highlands Landfill

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. Kent-Mysterious Well	ZJ68A	14-24417	Water	11/10/14 10:00	11/10/14 10:35
2. Trip Blanks	ZJ68B	14-24418	Water	11/10/14	11/10/14 10:35



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Duplicate RPD is not within established control limits
- B Reported value is less than the CRDL but \geq the Reporting Limit
- N Matrix Spike recovery not within established control limits
- NA Not Applicable, analyte not spiked
- H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L Analyte concentration is ≤ 5 times the Reporting Limit and the replicate control limit defaults to ± 1 RL instead of the normal 20% RPD

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" (**Dioxin/Furan analysis only**)
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. (**Dioxin/Furan analysis only**)
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. (**Dioxin/Furan analysis only**)



Geotechnical Data

- A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F Samples were frozen prior to particle size determination
- SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: MB-111114A

METHOD BLANK

Lab Sample ID: MB-111114A

LIMS ID: 14-24417

Matrix: Water

Data Release Authorized: *mw*

Reported: 11/13/14

QC Report No: ZJ68-SPU

Project: Kent Highlands Landfill

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT2/PAB

Date Analyzed: 11/11/14 14:13

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MB-111114A

METHOD BLANK

Lab Sample ID: MB-111114A

LIMS ID: 14-24417

Matrix: Water

Date Analyzed: 11/11/14 14:13

QC Report No: ZJ68-SPU

Project: Kent Highlands Landfill

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.5%
d8-Toluene	97.3%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Kent-Mysterious Well

Page 1 of 2

SAMPLE

Lab Sample ID: ZJ68A

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: *mm*

Date Sampled: 11/10/14

Reported: 11/13/14

Date Received: 11/10/14

Instrument/Analyst: NT2/PAB

Sample Amount: 10.0 mL

Date Analyzed: 11/11/14 16:58

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

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Sample ID: Kent-Mysterious Well
SAMPLE

Lab Sample ID: ZJ68A

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Date Analyzed: 11/11/14 16:58

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.0%
d8-Toluene	99.3%
Bromofluorobenzene	97.2%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: ZJ68B

QC Report No: ZJ68-SPU

LIMS ID: 14-24418

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: *mw*

Date Sampled: 11/10/14

Reported: 11/13/14

Date Received: 11/10/14

Instrument/Analyst: NT2/PAB

Sample Amount: 10.0 mL

Date Analyzed: 11/11/14 17:25

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: Trip Blanks

SAMPLE

Lab Sample ID: ZJ68B

QC Report No: ZJ68-SPU

LIMS ID: 14-24418

Project: Kent Highlands Landfill

Matrix: Water

Date Analyzed: 11/11/14 17:25

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.2%
d8-Toluene	99.0%
Bromofluorobenzene	94.4%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-111114A

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-111114A

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: *mm*

Date Sampled: NA

Reported: 11/13/14

Date Received: NA

Instrument/Analyst LCS: NT2/PAB

Sample Amount LCS: 10.0 mL

LCSD: NT2/PAB

LCSD: 10.0 mL

Date Analyzed LCS: 11/11/14 13:20

Purge Volume LCS: 10.0 mL

LCSD: 11/11/14 13:46

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	8.83	10.0	88.3%	8.65	10.0	86.5%	2.1%
Bromomethane	8.75	10.0	87.5%	8.65	10.0	86.5%	1.1%
Vinyl Chloride	8.85	10.0	88.5%	8.77	10.0	87.7%	0.9%
Chloroethane	9.30	10.0	93.0%	9.13	10.0	91.3%	1.8%
Methylene Chloride	9.22	10.0	92.2%	9.01	10.0	90.1%	2.3%
Acetone	46.0	50.0	92.0%	46.6	50.0	93.2%	1.3%
Carbon Disulfide	9.49	10.0	94.9%	9.35	10.0	93.5%	1.5%
1,1-Dichloroethene	9.20	10.0	92.0%	9.18	10.0	91.8%	0.2%
1,1-Dichloroethane	9.71	10.0	97.1%	9.65	10.0	96.5%	0.6%
trans-1,2-Dichloroethene	9.19	10.0	91.9%	9.05	10.0	90.5%	1.5%
cis-1,2-Dichloroethene	9.60	10.0	96.0%	9.52	10.0	95.2%	0.8%
Chloroform	9.72	10.0	97.2%	9.58	10.0	95.8%	1.5%
1,2-Dichloroethane	9.68	10.0	96.8%	9.53	10.0	95.3%	1.6%
2-Butanone	49.8	50.0	99.6%	49.5	50.0	99.0%	0.6%
1,1,1-Trichloroethane	9.25	10.0	92.5%	9.27	10.0	92.7%	0.2%
Carbon Tetrachloride	9.53	10.0	95.3%	9.64	10.0	96.4%	1.1%
Vinyl Acetate	4.49 Q	10.0	44.9%	4.37 Q	10.0	43.7%	2.7%
Bromodichloromethane	9.91	10.0	99.1%	9.47	10.0	94.7%	4.5%
1,2-Dichloropropane	9.60	10.0	96.0%	9.57	10.0	95.7%	0.3%
cis-1,3-Dichloropropene	9.54	10.0	95.4%	9.62	10.0	96.2%	0.8%
Trichloroethene	9.73	10.0	97.3%	9.66	10.0	96.6%	0.7%
Dibromochloromethane	9.53	10.0	95.3%	9.36	10.0	93.6%	1.8%
1,1,2-Trichloroethane	9.34	10.0	93.4%	9.21	10.0	92.1%	1.4%
Benzene	9.73	10.0	97.3%	9.72	10.0	97.2%	0.1%
trans-1,3-Dichloropropene	9.88	10.0	98.8%	9.67	10.0	96.7%	2.1%
2-Chloroethylvinylether	8.73	10.0	87.3%	8.90	10.0	89.0%	1.9%
Bromoform	9.12	10.0	91.2%	8.94	10.0	89.4%	2.0%
4-Methyl-2-Pentanone (MIBK)	49.4	50.0	98.8%	49.9	50.0	99.8%	1.0%
2-Hexanone	46.5	50.0	93.0%	45.9	50.0	91.8%	1.3%
Tetrachloroethene	8.85	10.0	88.5%	8.97	10.0	89.7%	1.3%
1,1,2,2-Tetrachloroethane	8.35 Q	10.0	83.5%	8.48 Q	10.0	84.8%	1.5%
Toluene	9.24	10.0	92.4%	9.15	10.0	91.5%	1.0%
Chlorobenzene	8.90	10.0	89.0%	8.85	10.0	88.5%	0.6%
Ethylbenzene	8.90	10.0	89.0%	9.00	10.0	90.0%	1.1%
Styrene	9.31	10.0	93.1%	9.37	10.0	93.7%	0.6%
Trichlorofluoromethane	9.58	10.0	95.8%	9.37	10.0	93.7%	2.2%
1,1,2-Trichloro-1,2,2-trifluoroethane	8.85	10.0	88.5%	8.77	10.0	87.7%	0.9%
m,p-Xylene	18.6	20.0	93.0%	18.6	20.0	93.0%	0.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-111114A

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-111114A

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.48	10.0	94.8%	9.38	10.0	93.8%	1.1%
1,2-Dichlorobenzene	8.28	10.0	82.8%	8.34	10.0	83.4%	0.7%
1,3-Dichlorobenzene	8.39	10.0	83.9%	8.35	10.0	83.5%	0.5%
1,4-Dichlorobenzene	8.18	10.0	81.8%	8.26	10.0	82.6%	1.0%
Acrolein	44.8	50.0	89.6%	44.2	50.0	88.4%	1.3%
Iodomethane	9.07	10.0	90.7%	8.93	10.0	89.3%	1.6%
Bromoethane	9.26	10.0	92.6%	9.33	10.0	93.3%	0.8%
Acrylonitrile	9.93	10.0	99.3%	9.72	10.0	97.2%	2.1%
1,1-Dichloropropene	9.67	10.0	96.7%	9.83	10.0	98.3%	1.6%
Dibromomethane	9.48	10.0	94.8%	9.38	10.0	93.8%	1.1%
1,1,1,2-Tetrachloroethane	9.33	10.0	93.3%	9.31	10.0	93.1%	0.2%
1,2-Dibromo-3-chloropropane	8.93	10.0	89.3%	8.77	10.0	87.7%	1.8%
1,2,3-Trichloropropane	8.74	10.0	87.4%	8.73	10.0	87.3%	0.1%
trans-1,4-Dichloro-2-butene	8.44	10.0	84.4%	8.42	10.0	84.2%	0.2%
1,3,5-Trimethylbenzene	8.72	10.0	87.2%	8.79	10.0	87.9%	0.8%
1,2,4-Trimethylbenzene	8.75	10.0	87.5%	8.76	10.0	87.6%	0.1%
Hexachlorobutadiene	6.85 Q	10.0	68.5%	7.02 Q	10.0	70.2%	2.5%
1,2-Dibromoethane	9.22	10.0	92.2%	9.11	10.0	91.1%	1.2%
Bromochloromethane	9.86	10.0	98.6%	9.66	10.0	96.6%	2.0%
2,2-Dichloropropane	9.34	10.0	93.4%	9.30	10.0	93.0%	0.4%
1,3-Dichloropropane	8.94	10.0	89.4%	8.91	10.0	89.1%	0.3%
Isopropylbenzene	8.65	10.0	86.5%	8.67	10.0	86.7%	0.2%
n-Propylbenzene	8.26	10.0	82.6%	8.29	10.0	82.9%	0.4%
Bromobenzene	8.09	10.0	80.9%	8.26	10.0	82.6%	2.1%
2-Chlorotoluene	8.28	10.0	82.8%	8.38	10.0	83.8%	1.2%
4-Chlorotoluene	8.32	10.0	83.2%	8.23	10.0	82.3%	1.1%
tert-Butylbenzene	8.70	10.0	87.0%	8.78	10.0	87.8%	0.9%
sec-Butylbenzene	8.57	10.0	85.7%	8.68	10.0	86.8%	1.3%
4-Isopropyltoluene	8.68	10.0	86.8%	8.65	10.0	86.5%	0.3%
n-Butylbenzene	8.38	10.0	83.8%	8.37	10.0	83.7%	0.1%
1,2,4-Trichlorobenzene	8.11 Q	10.0	81.1%	8.05 Q	10.0	80.5%	0.7%
Naphthalene	8.82	10.0	88.2%	9.00	10.0	90.0%	2.0%
1,2,3-Trichlorobenzene	8.29 Q	10.0	82.9%	7.99 Q	10.0	79.9%	3.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.0%	96.7%
d8-Toluene	98.1%	98.1%
Bromofluorobenzene	100%	101%
d4-1,2-Dichlorobenzene	101%	98.5%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: ZJ68-SPU

Project: Kent Highlands Landfill

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-111114A	Method Blank	10	99.5%	97.3%	99.8%	102%	0
LCS-111114A	Lab Control	10	97.0%	98.1%	100%	101%	0
LCSD-111114A	Lab Control Dup	10	96.7%	98.1%	101%	98.5%	0
ZJ68A	Kent-Mysterious Well	10	99.0%	99.3%	97.2%	101%	0
ZJ68B	Trip Blanks	10	99.2%	99.0%	94.4%	103%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B

Log Number Range: 14-24417 to 14-24418

ZJ68: 00017

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc1111.d
Analysis Type: WATER
Lab Sample ID: CC1111
Method: /chem3/nt2.i/20141111.b/82601002L.m

Injection Date: 11-NOV-2014 10:20
Init. Cal. Date(s): 02-OCT-2014 02-OCT-2014
Init. Cal. Times: 10:14 13:32
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	MIN	MAX		CURVE TYPE
			RRF	%D / %DRIFT	%D / %DRIFT	
1 Dichlorodifluoromethane	0.83040	0.69391	0.010	-16.43648	20.00000	Averaged
2 Chloromethane	1.23478	1.12795	0.100	-8.65193	20.00000	Averaged
3 Vinyl Chloride	1.11661	1.03041	0.100	-7.71968	20.00000	Averaged
4 Bromomethane	0.45893	0.44797	0.100	-2.38945	20.00000	Averaged
5 Chloroethane	0.58036	0.58788	0.010	1.29639	20.00000	Averaged
6 Trichlorofluoromethane	0.76176	0.82836	0.010	8.74280	20.00000	Averaged
7 1,1-Dichloroethene	1.40387	1.33955	0.100	-4.58150	20.00000	Averaged
8 Carbon Disulfide	2.45764	2.44433	0.010	-0.54156	20.00000	Averaged
9 112Trichloro122Trifluoroeth	0.71992	0.65811	0.010	-8.58565	20.00000	Averaged
10 Iodomethane	1.04651	0.97588	0.010	-6.74913	20.00000	Averaged
11 Bromoethane	0.54500	0.52533	0.100	-3.60850	20.00000	Averaged
12 Acrolein	0.08396	0.06933	0.000	-17.42206	20.00000	Averaged
13 Methylene Chloride	0.80780	0.76022	0.010	-5.88991	20.00000	Averaged
14 Acetone	0.12406	0.10358	0.001	-16.51377	20.00000	Averaged
15 Trans-1,2-Dichloroethene	0.76774	0.73165	0.010	-4.70111	20.00000	Averaged
17 Methyl tert butyl ether	1.61437	1.51666	0.100	-6.05289	20.00000	Averaged
18 1,1-Dichloroethane	1.47084	1.47562	0.200	0.32486	20.00000	Averaged
19 Acrylonitrile	0.15535	0.14267	0.001	-8.16446	20.00000	Averaged
20 Vinyl Acetate	0.42520	0.17041	0.010	-59.92274	20.00000	Averaged
22 Cis-1,2-Dichloroethene	0.74565	0.73459	0.010	-1.48226	20.00000	Averaged
23 2,2-Dichloropropane	0.80190	0.79687	0.010	-0.62653	20.00000	Averaged
24 Bromochloromethane	0.27604	0.27081	0.050	-1.89391	20.00000	Averaged
25 Chloroform	1.19294	1.15395	0.200	-3.26856	20.00000	Averaged
26 Carbon Tetrachloride	0.46632	0.47451	0.100	1.75551	20.00000	Averaged
27 Dibromofluoromethane	0.58740	0.58854	0.100	0.19494	20.00000	Averaged
28 1,1,1-Trichloroethane	1.05910	1.03436	0.100	-2.33626	20.00000	Averaged
29 2-Butanone	0.18190	0.15664	0.001	-13.88757	20.00000	Averaged
30 1,1-Dichloropropene	0.52833	0.53417	0.010	1.10494	20.00000	Averaged
31 Benzene	1.49606	1.49344	0.500	-0.17513	20.00000	Averaged
33 d4-1,2-Dichloroethane	0.69025	0.63525	0.010	-7.96749	20.00000	Averaged
34 1,2-Dichloroethane	0.43456	0.41116	0.100	-5.38460	20.00000	Averaged
36 Trichloroethene	0.33072	0.32554	0.100	-1.56500	20.00000	Averaged
38 Dibromomethane	0.16204	0.14792	0.010	-8.71354	20.00000	Averaged
39 1,2-Dichloropropane	0.37854	0.36798	0.100	-2.79007	20.00000	Averaged
40 Bromodichloromethane	0.39898	0.39307	0.100	-1.48048	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc1111.d
Analysis Type: WATER
Lab Sample ID: CC1111
Method: /chem3/nt2.i/20141111.b/82601002L.m

Injection Date: 11-NOV-2014 10:20
Init. Cal. Date(s): 02-OCT-2014 02-OCT-2014
Init. Cal. Times: 10:14 13:32
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
=====	=====	=====	=====	=====	=====	=====
41 2-Chloroethyl Vinyl Ether	0.12595	0.10534	0.000	-16.36189	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.49287	0.47534	0.200	-3.55556	20.00000	Averaged
\$ 43 d8-Toluene	1.26968	1.24183	0.010	-2.19356	20.00000	Averaged
44 Toluene	0.91610	0.87538	0.400	-4.44581	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.09030	0.08252	0.000	-8.61984	20.00000	Averaged
46 Tetrachloroethene	0.32427	0.29173	0.200	-10.03517	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.41084	0.40628	0.010	-1.10940	20.00000	Averaged
48 1,1,2-Trichloroethane	0.21487	0.19683	0.100	-8.39371	20.00000	Averaged
49 Chlorodibromomethane	0.23175	0.21798	0.100	-5.94094	20.00000	Averaged
50 1,3-Dichloropropane	0.44202	0.38462	0.100	-12.98538	20.00000	Averaged
51 1,2-Dibromoethane	0.20655	0.18693	0.010	-9.49870	20.00000	Averaged
52 2-Hexanone	0.16379	0.13209	0.010	-19.35624	20.00000	Averaged
54 Chlorobenzene	0.96901	0.87415	0.500	-9.78941	20.00000	Averaged
55 Ethyl Benzene	0.55790	0.51467	0.100	-7.74850	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.30753	0.29391	0.010	-4.42916	20.00000	Averaged
57 m,p-xylene	0.66991	0.63887	0.300	-4.63358	20.00000	Averaged
58 o-Xylene	0.65155	0.62718	0.300	-3.73999	20.00000	Averaged
59 Styrene	1.01922	0.98037	0.300	-3.81130	20.00000	Averaged
60 Bromoform	0.23953	0.21625	0.010	-9.71900	20.00000	Averaged
61 Isopropyl Benzene	3.57413	3.22812	0.010	-9.68107	20.00000	Averaged
\$ 62 4-Bromofluorobenzene	0.54370	0.54797	0.200	0.78418	20.00000	Averaged
63 Bromobenzene	0.73767	0.62469	0.010	-15.31580	20.00000	Averaged
64 N-Propyl Benzene	4.30486	3.72822	0.010	-13.39510	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.57078	0.44821	0.100	-21.47405	20.00000	Averaged
66 2-Chloro Toluene	2.96746	2.58660	0.010	-12.83457	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.97546	2.73611	0.010	-8.04427	20.00000	Averaged
68 1,2,3-Trichloropropane	0.16336	0.14142	0.010	-13.43014	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.19108	0.16266	0.001	-14.87083	20.00000	Averaged
70 4-Chloro Toluene	2.76033	2.38989	0.010	-13.42022	20.00000	Averaged
71 T-Butyl Benzene	2.37055	2.16923	0.010	-8.49248	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.97486	2.75367	0.010	-7.43551	20.00000	Averaged
73 S-Butyl Benzene	3.73844	3.37619	0.010	-9.68981	20.00000	Averaged
74 4-Isopropyl Toluene	2.84221	2.58209	0.010	-9.15193	20.00000	Averaged
75 1,3-Dichlorobenzene	1.48771	1.28917	0.600	-13.34502	20.00000	Averaged
77 1,4-Dichlorobenzene	1.52085	1.26867	0.500	-16.58123	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc1111.d
Analysis Type: WATER
Lab Sample ID: CC1111
Method: /chem3/nt2.i/20141111.b/82601002L.m

Injection Date: 11-NOV-2014 10:20
Init. Cal. Date(s): 02-OCT-2014 02-OCT-2014
Init. Cal. Times: 10:14 13:32
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	MIN	MAX	CURVE TYPE
=====	=====	=====	=====	=====	=====
78 N-Butyl Benzene	2.86678	2.52352	0.010	-11.97365	20.00000
\$ 79 d4-1,2-Dichlorobenzene	0.85894	0.83095	0.010	-3.25798	20.00000
80 1,2-Dichlorobenzene	1.32789	1.10466	0.400	-16.81122	20.00000
81 1,2-Dibromo 3-Chloropropane	0.07669	0.06771	0.010	-11.71262	20.00000
83 Hexachloro 1,3-Butadiene	0.37281	0.26858	0.010	-27.95734	20.00000
84 1,2,4-Trichlorobenzene	0.65868	0.52603	0.010	-20.13882	20.00000
85 Naphthalene	1.01974	0.85633	0.010	-16.02410	20.00000
86 1,2,3-Trichlorobenzene	0.45786	0.36376	0.010	-20.55206	20.00000
					Averaged <-

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: Kent-Mysterious Well
Page 1 of 1 SAMPLE


Lab Sample ID: ZJ68A

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: 

Date Sampled: 11/10/14

Reported: 11/14/14

Date Received: 11/10/14

Instrument/Analyst: NT7/PAB

Sample Amount: 10.0 mL

Date Analyzed: 11/11/14 17:13

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	93.7%
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ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: Trip Blanks
Page 1 of 1 SAMPLE

Lab Sample ID: ZJ68B

QC Report No: ZJ68-SPU

LIMS ID: 14-24418

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: *MS*

Date Sampled: 11/10/14

Reported: 11/14/14

Date Received: 11/10/14

Instrument/Analyst: NT7/PAB

Sample Amount: 10.0 mL

Date Analyzed: 11/11/14 17:36

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	92.7%
-----------------------	-------

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-111114

Page 1 of 1

METHOD BLANK


Lab Sample ID: MB-111114

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: 

Date Sampled: NA

Reported: 11/14/14

Date Received: NA

Instrument/Analyst: NT7/PAB

Sample Amount: 10.0 mL

Date Analyzed: 11/11/14 16:02

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.9%
-----------------------	-------

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-111114

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-111114

QC Report No: ZJ68-SPU

LIMS ID: 14-24417

Project: Kent Highlands Landfill

Matrix: Water

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 11/14/14

Date Received: NA

Instrument/Analyst LCS: NT7/PAB

Sample Amount LCS: 10.0 mL

LCSD: NT7/PAB

LCSD: 10.0 mL

Date Analyzed LCS: 11/11/14 15:06

Purge Volume LCS: 10.0 mL

LCSD: 11/11/14 15:39

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	0.839	1.00	83.9%	1.28	1.00	128%	41.6%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.7%	96.3%

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZJ68-SPU
Project: Kent Highlands Landfill

<u>Client ID</u>	<u>DCE</u>	<u>TOT OUT</u>
MB-111114	95.9%	0
LCS-111114	95.7%	0
LCSD-111114	96.3%	0
Kent-Mysterious Well	93.7%	0
Trip Blanks	92.7%	0

LCS/MB LIMITS QC LIMITS

(DCE) = d4-1,2-Dichloroethane (80-129) (80-129)

Prep Method: SW5030
Log Number Range: 14-24417 to 14-24418

SAMPLE RESULTS-CONVENTIONALS
ZJ68-SPU



Matrix: Water
Data Release Authorized:
Reported: 11/19/14

Project: Kent Highlands Landfill
Event: NA
Date Sampled: 11/10/14
Date Received: 11/10/14


Client ID: Kent-Mysterious Well
ARI ID: 14-24417 ZJ68A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	11/18/14 111814#1	SM 2320	mg/L CaCO3	1.0	268
Carbonate	11/18/14	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Bicarbonate	11/18/14	SM 2320	mg/L CaCO3	1.0	268
Hydroxide	11/18/14	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Chloride	11/10/14 111014#1	EPA 325.2	mg/L	50.0	405
N-Nitrate	11/11/14	Calculated	mg-N/L	0.010	0.018
N-Nitrite	11/11/14 111114#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	11/11/14 111114#1	EPA 353.2	mg-N/L	0.010	0.018
Sulfate	11/13/14 111314#1	EPA 375.2	mg/L	2.0	3.8

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
ZJ68-SPU



Matrix: Water
Data Release Authorized: 
Reported: 11/19/14


Project: Kent Highlands Landfill
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Chloride	EPA 325.2	11/10/14	mg/L	< 1.0 U	FB
N-Nitrite	EPA 353.2	11/11/14	mg-N/L	< 0.010 U	FB
Nitrate + Nitrite	EPA 353.2	11/11/14	mg-N/L	< 0.010 U	FB
Sulfate	EPA 375.2	11/13/14	mg/L	< 2.0 U	FB

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
ZJ68-SPU



Matrix: Water
Data Release Authorized: 
Reported: 11/19/14

Project: Kent Highlands Landfill
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity ERA #P114506	SM 2320	11/18/14	mg/L CaCO3	59.3	61.7	96.1%
Chloride ERA #290313	EPA 325.2	11/10/14	mg/L	4.8	5.0	96.0%
N-Nitrite ERA #141113	EPA 353.2	11/11/14	mg-N/L	0.493	0.500	98.6%
Nitrate + Nitrite ERA #320614	EPA 353.2	11/11/14	mg-N/L	0.499	0.500	99.8%
Sulfate ERA 131013	EPA 375.2	11/13/14	mg/L	15.0	15.0	100.0%

REPLICATE RESULTS-CONVENTIONALS
ZJ68-SPU



Matrix: Water
Data Release Authorized:
Reported: 11/19/14


A handwritten signature in black ink, appearing to be 'JL' or similar, written over the 'Data Release Authorized' line.

Project: Kent Highlands Landfill
Event: NA
Date Sampled: 11/10/14
Date Received: 11/10/14

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ZJ68A Client ID: Kent-Mysterious Well						
Alkalinity	SM 2320	11/18/14	mg/L CaCO3	268	267	0.4%
Carbonate	SM 2320	11/18/14	mg/L CaCO3	< 1.0	< 1.0	NA
Bicarbonate	SM 2320	11/18/14	mg/L CaCO3	268	267	0.4%
Hydroxide	SM 2320	11/18/14	mg/L CaCO3	< 1.0	< 1.0	NA
N-Nitrite	EPA 353.2	11/11/14	mg-N/L	< 0.010	< 0.010	NA
Nitrate + Nitrite	EPA 353.2	11/11/14	mg-N/L	0.018	0.011	48.3%
Sulfate	EPA 375.2	11/13/14	mg/L	3.8	3.8	0.0%

MS/MSD RESULTS-CONVENTIONALS
ZJ68-SPU



Matrix: Water
Data Release Authorized: 
Reported: 11/19/14

Project: Kent Highlands Landfill
Event: NA
Date Sampled: 11/10/14
Date Received: 11/10/14

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ZJ68A Client ID: Kent-Mysterious Well							
N-Nitrite	EPA 353.2	11/11/14	mg-N/L < 0.010	0.510	0.510	0.500	102.0%
Nitrate + Nitrite	EPA 353.2	11/11/14	mg-N/L 0.018	0.515	0.515	0.500	99.4%
Sulfate	EPA 375.2	11/13/14	mg/L 3.8	16.7	16.7	15.0	86.0%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: Kent-Mysterious Well
SAMPLE

Lab Sample ID: ZJ68A

LIMS ID: 14-24417

Matrix: Water

Data Release Authorized:

Reported: 11/13/14

QC Report No: ZJ68-SPU

Project: Kent Highlands Landfill

Date Sampled: 11/10/14

Date Received: 11/10/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	11/11/14	6010C	11/12/14	7440-70-2	Calcium	0.05	7.80	
3010A	11/11/14	6010C	11/12/14	7439-95-4	Magnesium	0.05	16.6	
3010A	11/11/14	6010C	11/12/14	7440-09-7	Potassium	0.5	15.4	
3010A	11/11/14	6010C	11/12/14	7440-23-5	Sodium	0.5	331	

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: ZJ68MB

LIMS ID: 14-24417

Matrix: Water

Data Release Authorized:

Reported: 11/13/14

QC Report No: ZJ68-SPU

Project: Kent Highlands Landfill

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	11/11/14	6010C	11/12/14	7440-70-2	Calcium	0.05	0.05	U
3010A	11/11/14	6010C	11/12/14	7439-95-4	Magnesium	0.05	0.05	U
3010A	11/11/14	6010C	11/12/14	7440-09-7	Potassium	0.5	0.5	U
3010A	11/11/14	6010C	11/12/14	7440-23-5	Sodium	0.5	0.5	U

U-Analyte undetected at given LOQ

LOQ-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ZJ68LCS

LIMS ID: 14-24417

Matrix: Water

Data Release Authorized: 

Reported: 11/13/14

QC Report No: ZJ68-SPU

Project: Kent Highlands Landfill

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Calcium	6010C	10.2	10.0	102%	
Magnesium	6010C	10.9	10.0	109%	
Potassium	6010C	10.7	10.0	107%	
Sodium	6010C	10.3	10.0	103%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%

Attachment B

RI Well Inventory



Appendix G
GROUNDWATER WELL INVENTORY FOR
THE KENT HIGHLANDS VICINITY

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MEMORANDUM

To: Paul Townley; CH2M Hill
From: Alan Carey, Mark Adams; AGI
Date: June 8, 1990
Subject: Selection of Off-Site Wells
Fourth and Fifth Groundwater Sampling Round
Kent Highlands Landfill RI/FS Phase II
AGI No.: 15,273.018

In accordance with Task 43.02 of our Subconsultant Agreement, wells in the Green River Valley were identified and field checked. The purpose of this memorandum is to recommend wells for sampling in the fourth and fifth groundwater sampling round.

BACKGROUND

The RI/FS Work Plan calls for sampling of up to 5 off-site wells located up to 2 miles north and south of the site in the Green River Valley. The purpose of sampling is to help evaluate the source of saline water in KMW-10B and obtain background water quality data from the Recent Alluvium Aquifer near the Kent Highlands Landfill. A comprehensive effort was made by AGI, CH2M Hill, and the City of Seattle (City) to identify and locate wells within the valley approximately 5 miles north and south of the landfill. The following sections discuss how wells were identified, summarize the results of field checking identified wells, and present our recommendations for sampling. A more detailed discussion of the well identification process and results will be presented in the Literature Search Technical Memorandum.

PRELIMINARY WELL IDENTIFICATION

Available driller's reports (logs) from wells in and adjacent to the Green River Valley between Auburn and the Black River were obtained by the City. These logs were screened by AGI on the basis of location and drill depth. Specific screening criteria for further consideration was 1) distance of less than approximately 5 miles north and south of the landfill; 2) location in the floor of the Green River Valley; 3) drill depth of less than 100 feet; and 4) residential or commercial ownership. From this screening, 15 wells were selected for possible field checking and permission was granted by the City for AGI to approach the well owners.

USGS Bulletin No. 28 was also reviewed. Two wells were selected for field checking from tabulated lists of wells and associated water quality data in the bulletin. Selection was made on the basis of relatively high (>1000 micro mhos) specific conductance measurements.

Mr. Paul Townley
CH2M Hill
June 8, 1990
Page 2

Nine residences/businesses on Frager Road between the landfill and West Valley Highway were also identified during a visual reconnaissance of the area. Each owner, if available, was asked about the existence of wells on their properties. No wells were identified for field checking by this method.

FIELD CHECKING

Attempts were made to field check the 17 wells (identified during the preliminary well identification) between May 18 and June 1, 1990. Only 15 of the 17 wells were located, although not all of the 15 were accessible. Typically, property owners were approached at their residences; the purpose of field checking was explained and permission to field check wells asked. Inquiries were made concerning the use of their well and water quality, as well as knowledge of local water use and quality. Of the 15 wells identified, seven were tested for temperature, pH, and conductivity.

The results of field checking the 15 wells are summarized in the attached table; well locations are shown on the attached map. The results of field checking are briefly described below. Typically, the wells are referenced by the last name of the last known owner. Wells are discussed in the order field checked.

Driesow - Water parameters checked; a conductivity of 8,700 micro mohs/cm was measured. Water is used for vehicle wash.

Green No. 1 - Water parameters checked; a conductivity of 830 micro mohs/cm was measured. Water is used for irrigation and livestock.

Green No. 2 - Water parameters checked; a conductivity of 430 micro mohs/cm was measured on treated water. It does not look practical to sample untreated water. Well is used for domestic purposes and serves seven residences.

Schuler - Water parameters checked; a conductivity of 270 micro mohs/cm was measured. Water is used for domestic purposes.

Nakaruma - Residence was abandoned. Disconnected electrical service prevented water sampling.

Jonathan's No. 1 - Water parameters checked; a conductivity of 260 micro mohs/cm was measured. Water is used for landscape irrigation and pond filling at a large apartment complex. Pump operates nearly continuously in the summer.

Jonathan's No. 2 - Well in the same apartment complex as Jonathan's #1. Lack of a sampling port prevented water sampling.

Mr. Paul Townley
CH2M Hill
June 8, 1990
Page 3

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Onchi - Well identified in USGS Bulletin No. 28 as having a specific conductance of 2,100 micro mohs. Attempts to contact the property owner have not been successful.

Schoenbalcher - Well identified in USGS Bulletin No. 28 as having a specific conductance of 1,000 micro mohs. Location is now the site of the Pavilion Mall.

Johnson - Owner denied us access to property.

Balzarini - Owner denied us access to property.

Birkeland No. 1 - Well abandoned.

Birkeland No. 2 - Well is located on the valley side rather than floor and not investigated further.

Arnold - Water parameters checked; a conductivity of 310 micro mohs/cm was measured. Well is located on the valley side rather than the floor.

Littowitz - Water parameters were checked; a conductivity of 250 micro mohs/cm was measured. Water is used by the person renting the property for everything but drinking.

RECOMMENDATIONS

We feel it is important to obtain water quality samples which will show the range of water quality in the Recent Alluvium Aquifer. Based on this, we recommend sampling three wells: Driesow because of its high conductivity; Greene No. 1 because of its moderately high conductivity; and Littowitz because of its more normal range of conductivity. These wells are also good choices because they are all constructed with stainless steel screens, are screened at approximately the same depth as KMW-10B, and are less than 2 miles from the landfill. We recommend Schuler or Jonathan's No. 1 as alternates to Littowitz.

[Table G-1]

Owner/Address	Drill Depth (ft)	Screen Dia./ Type	Screen Depth (ft)	H2O Parameters			Recommendations/Comments
				Temp (°C)	pH	Conductivity (umohs/cm)	
Albert Driesow 5221 S. 212th Kent, WA	70	5"/Stainless	65 - 70	11.6	6.8	8700	Recommend sampling
John Green #1 21839 Frager Rd. Kent, WA	60	6"/Stainless	53 - 58	13.5	7.0	830	Recommend sampling
John Green #2 21839 Frager Rd. Kent, WA	65	6"/Stainless	55 - 65	12.4	6.9	430	Parameters measured on treated water. May not be possible to sample untreated water.
Martin Schuler 28014 West Valley Hwy. Kent, WA	76	6"/Open bottom casing	76	12.1	7.1	270	Possible alternate sampling well.
T. Nakaruma 18412 80th Pl. S. Kent, WA	180	5"/PVC	167 - 180	N/A	N/A	N/A	House abandoned, electrical service disconnected.
Jonathan's Landing #1 1024 Central Ave. Kent, WA	88	6"/Stainless	83 - 88	19.7	7.6	260	Possible alternate sampling well. Property managed by JB McLoughlin and Co. 200 1st Ave. W., Suite 302 Seattle, WA 98119
Jonathan's Landing #2 1024 Central Ave. Kent, WA	79	6"/Stainless	75 - 79	N/A	N/A	N/A	No sampling port.

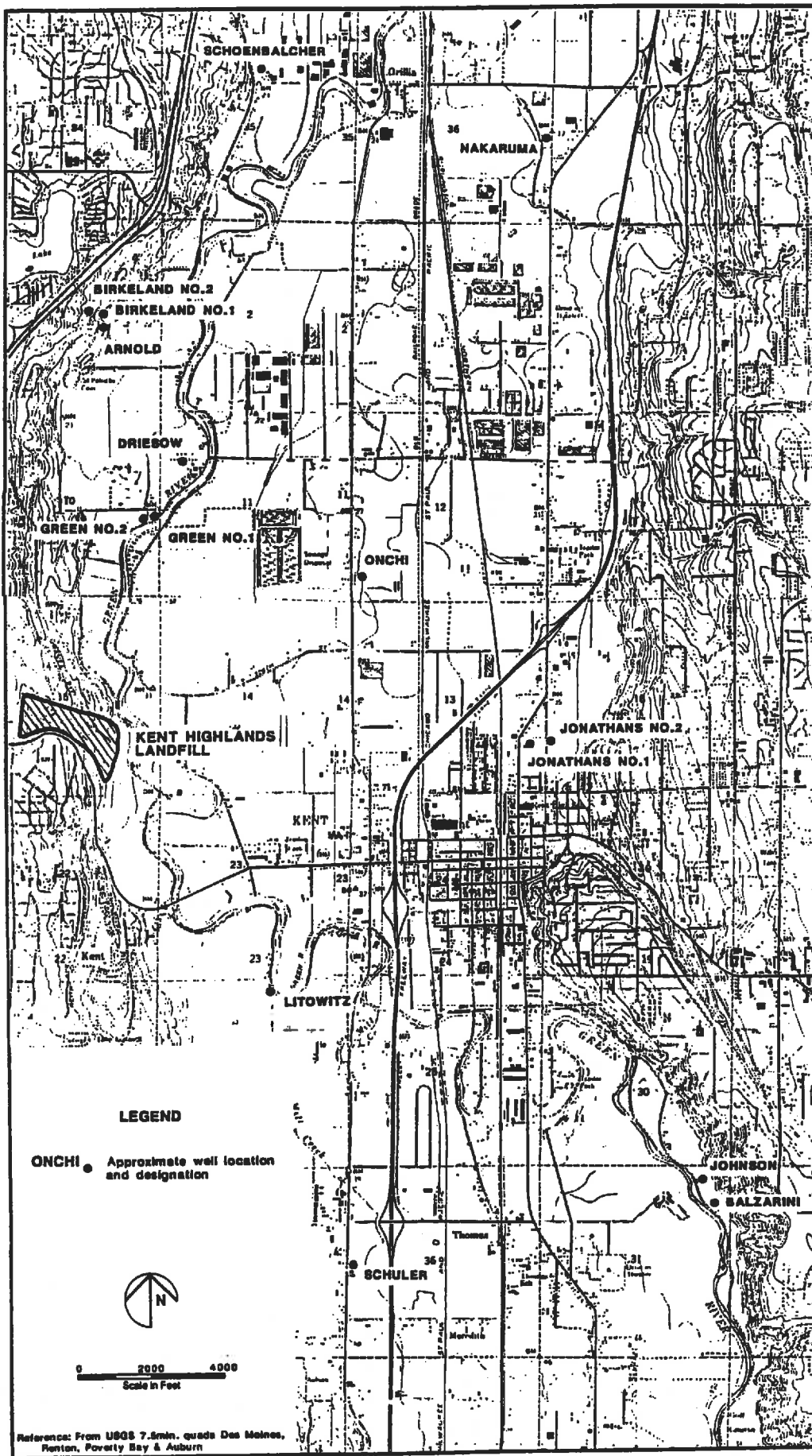
Well Inventory – Results of Field Checking
Kent Highlands Landfill RI/FS – Phase II
Kent, Washington

Applied Geotechnology Inc.

[Table G-1]

Page 2 of 2

Owner/Address	Drill Depth (ft)	Screen Dia./ Type	Screen Depth (ft)	H2O Parameters			Recommendations/Comments
				Temp (°C)	pH	Conductivity (umohs/cm)	
James Onchl (?) 22136 West Valley Hwy. Kent, WA	200	6" /NA	NA	NA	N/A	N/A	Approximate address. Have been unable to contact owner.
H. Schoenbalcher 180th and Southcenter Pkwy. Kent, WA	200	2" /NA	NA	NA	N/A	N/A	Well abandoned, now site of Pavillion Mall.
Gloria Johnson 27450 Green River Rd. Kent, WA	62	6" /Open bottom	62	NA	N/A	N/A	Owner denied access.
Milo Balzarini 280th and Green River Road Kent, WA	57	6" /Open bottom	57	NA	N/A	N/A	Approximate address only. Owner denied access.
Thora Birkeland (Birkeland #1) 4512 S. 200th Kent, WA	35	6" /Open bottom	35	NA	N/A	N/A	Well abandoned.
Theodore Birkeland (Birkeland #2) 19809 Orilla Rd. S. Kent, WA	69	6" /Open bottom	69	NA	N/A	N/A	Well on west side of valley, not valley floor; not field checked.
G.L. Arnold 20016 Orilla Rd. S. Kent, WA	60	6" /Open bottom	60	18.1	6.8	310	Well on west side of valley, not valley floor.
Aaron Litowitz 25095 Frager Rd. Kent, WA	240	6" /Stainless	80 - 86	14.2	7.4	250	Recommend sampling. Owner address 30011 16th South, Federal Way, WA



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Well Location Map

Kent Highlands Landfill RI/FS-Phase II
Kent, Washington

FIGURE

1

JOB NUMBER
15.273.015

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APR 4/1/90

DATE
6 Jun. 90

[Figure G-1]

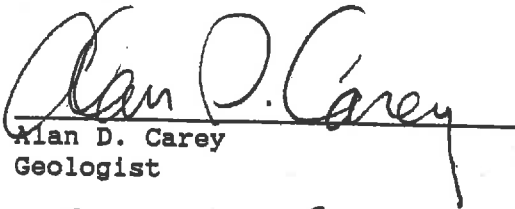
A report prepared for

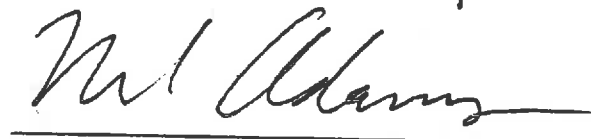
CH2M Hill
777 108th N.E., 8th Floor
Post Office Box 91500
Bellevue, Washington 98009

LITERATURE SEARCH
KENT HIGHLANDS LANDFILL RI/FS

AGI Project No. 15,273.018

by


Alan D. Carey
Geologist


Mark A. Adams, P.G.
Associate Hydrogeologist

APPLIED GEOTECHNOLOGY INC.
300 120th Avenue N.E.,
Building 4, Suite 215
Bellevue, Washington 98005
206/453-8383

November 13, 1990

INTRODUCTION

This memorandum summarizes the results of a literature search conducted by Applied Geotechnology Inc. (AGI), CH2M Hill, and the City of Seattle Solid Waste Utility (City) as part of the Kent Highlands Landfill RI/FS. The literature search, as defined in the Kent Highlands RI/FS Phase 2 Work Plan, consisted of three separate tasks: a search for water quality data from wells completed in Green River valley alluvium (Valley Aquifer), identification of potential off-site wells for groundwater sampling during Rounds 4 and 5 of the RI, and an inventory of water supply wells within a 1-mile radius of the Kent Highlands Landfill (landfill). These three tasks are discussed separately in the following sections of this memorandum.

WATER QUALITY DATA SEARCH

Purpose

Kent Highlands Landfill Phase 1 RI groundwater chemical analyses indicated saline groundwater at monitoring well KMW-10B. This well is located hydraulically downgradient of the landfill and is completed in the Recent Alluvium Aquifer (RAA); the RAA is that part of the Valley Aquifer within the RI study area. The Phase 1 data was insufficient to determine whether the salinity was due to contamination from the landfill. Additional water quality data was needed to further define the Valley Aquifer geochemistry and evaluate the impact of the landfill on groundwater quality.

Scope

The water quality data search was limited to the Green River valley 5 miles north and south of the landfill. The search relied exclusively on published and unpublished data; no field explorations were conducted.

Methodology

AGI compiled a list of potential information sources in April 1990 and transmitted the list to the City of Seattle Solid Waste Utility through CH2M Hill. City personnel searched these sources and provided the information obtained to CH2M Hill and AGI. The following is a list of information sources searched by the City:

- o City of Kent
- o South King County Ground Water Management Plan (South King County Groundwater Advisory Committee, 1989)
- o USEPA CERCLIS List
- o United States Geological Survey, Water Resources Division (USGS)

- o Washington Public Water Supply System List
- o Geology and Ground-Water Resources of Southwestern King County, Washington-Water Supply Bulletin No. 28 (Luzier, 1969)

In addition to these data sources, AGI and CH2M Hill reviewed reports available in their libraries and project files.

Wells identified in the data search as having some water quality data were evaluated and their locations plotted on USGS quadrangle maps. Those wells not completed in the Valley Aquifer or more than 5 miles from the landfill were not considered.

The water quality data were reviewed for applicability including cation/ion concentrations and general indicator parameters such as conductivity, pH, and total dissolved solids. Conventional organic and inorganic parameters typically evaluated during contaminated-site investigations were excluded from consideration since they are generally site specific and do not represent general background water quality.

Results

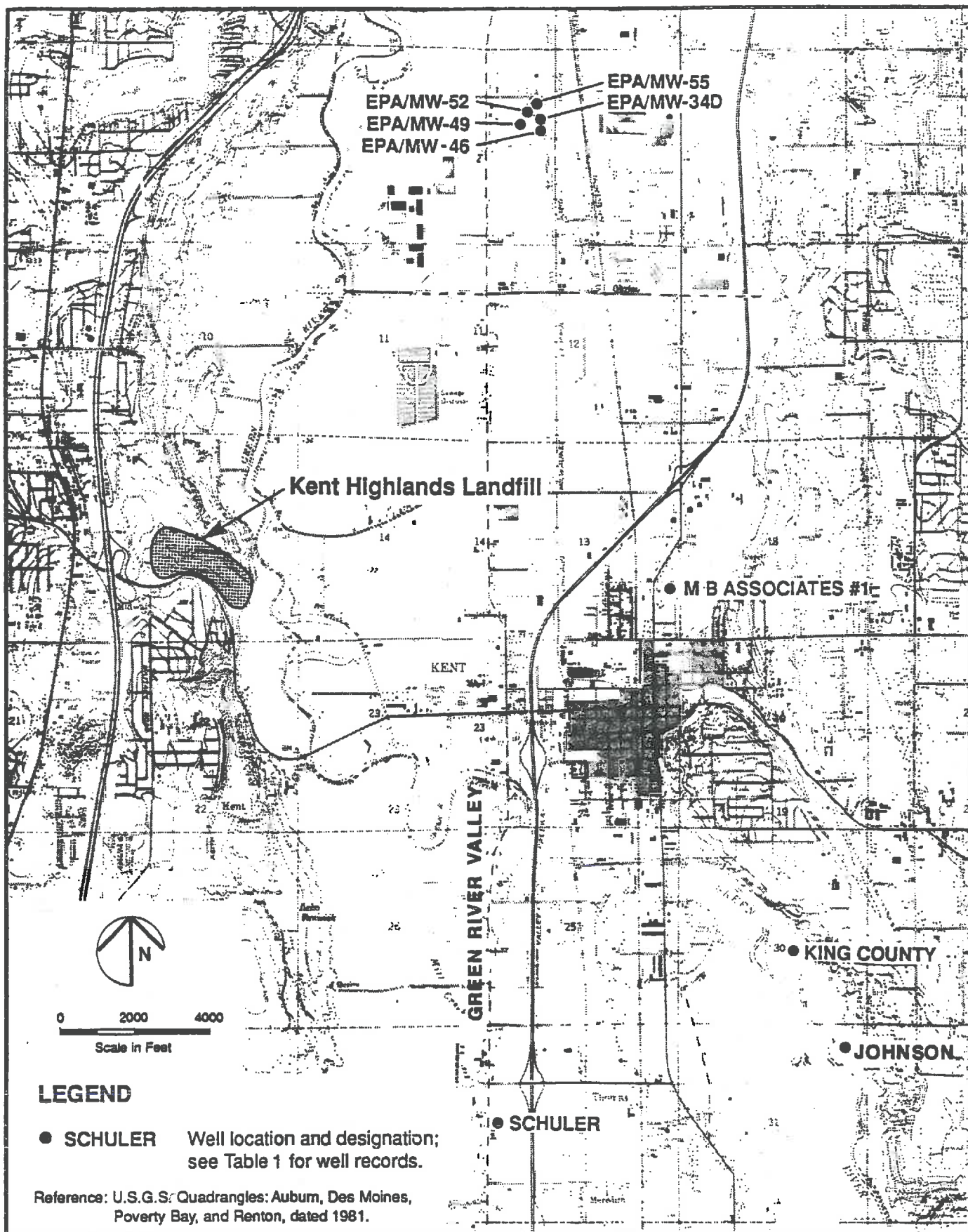
The following sections discuss information obtained from individual sources. Figure 1 shows the locations of wells having usable water quality data. Table 1 summarizes well construction parameters and Table 2 presents groundwater quality data.

City of Kent

The City of Kent Engineering Department reported they had no water quality information from wells in the Green River valley. A construction report for the Riverbend Golf Course irrigation well was obtained from the City of Kent Parks Department. The construction report indicates the well is not completed in the Valley Aquifer.

South King County Ground Water Management Plan

The South King County Ground Water Management Plan report (June, 1989) was reviewed. The report indicated the Valley Aquifer is used for municipal groundwater supplies primarily in the Pacific/Algona area (more than 5 miles south of the landfill). The report did not contain well construction data, chemical analyses references to saline water for wells in the Valley Aquifer within 5 miles north and south of the landfill.



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Wells with Water Quality Data
Literature Search Technical Memorandum
Kent Highlands Landfill RI/FS
Kent, Washington

FIGURE

1

JOB NUMBER
15,273.018

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DATE
14 Nov. 90

[Figure G-2]

Table 1
Well Records – Water Quality Data Search
Literature Search Technical Memorandum
Kent Highlands Landfill RI/FS

Owner/ Well Designation	^a Use	Drilling Depth (feet)	Boring Diameter (Inches)	Screen Size(inches)/ Type	Screen Depth (feet)	Reference/Comments
EPA/MW-34D	M	181.5	8	4/PVC	124-134	^b CH2M Hill
EPA/MW-46	M	105	8	4/PVC	80-100	CH2M Hill
EPA/MW-49	M	105	8	4/PVC	100-120	CH2M Hill
EPA/MW-52	M	106.5	8	4/PVC	80-100	CH2M Hill
EPA/MW-55	M	105	8	4/PVC	80-100	CH2M Hill
Johnson	D	62	6	Open Bottom	None	^c Ecology
King County	M	92	8	8/Stainless	77-82 85-90	Ecology
M.B. Associates#1	I	88	6	6/Stainless	83-88	Ecology. Well field screened by AGI.
Schuler	D	76	6	Open Bottom	None	Ecology. Well field screened by AGI.

Notes:

a) D = Domestic, I = Industrial, M = Monitoring

b) CH2M Hill. Final Supplementary Remedial Investigation, Western Processing Site, Kent, Washington. July 1986.

c) Water well report obtained from Ecology.

[Table G-3]

Table 2
Chemistry Results – Water Quality Data Search
Literature Search Technical Memorandum
Kent Highland Landfill RI/FS

Owner/ Well Designation	Field Parameters			Cations				Anions		Date Sampled	Reference
	Cond. (umohs)	pH	Temp. (C)	Magnesium (mg/l)	Calcium (mg/l)	Sodium (mg/l)	Potassium (mg/l)	Bicarbonate (mg/l)	Chloride (mg/l)		
EPA/MW-34D	1400	7.9	13.5	578.0	228.0	4460.0	149.0	682.0	11225.0	08/19/85	CH2M Hill ^a
EPA/MW-46	9600	8.0	12.5	332.0	141.0	2700.0	91.6	530.0	4450.0	08/19/85	CH2M Hill
EPA/MW-49	9500	7.4	13.0	348.0	144.0	2620.0	90.0	144.0	4625.0	08/19/85	CH2M Hill
EPA/MW-52	8250	6.8	12.0	244.0	97.7	2170.0	74.2	418.0	3995.0	08/20/85	CH2M Hill
EPA/MW-55	8000	6.9	12.0	292.0	142.0	2610.0	90.2	410.0	3525.0	08/20/85	CH2M Hill ^b
Johnson	144	7.6	-	5.2	15.0	5.9	1.4	80.0	1.7	09/17/87	USGS
King County	175	7.6	-	5.4	15.0	14.0	3.5	109.0	1.8	03/11/88	USGS
M.B. Associates#1	184	7.6	-	4.8	14.0	15.0	2.9	117.0	2.2	10/08/87	USGS
Schuler	201	7.4	-	4.9	7.9	23.0	1.0	124.0	2.3	09/25/87	USGS

Notes:

a) CH2M Hill. Final Supplementary Remedial Investigation, Western Processing Site, Kent, Washington. July 1986.

b) USGS. Water quality data for wells finished in the Quaternary Alluvium of S.W. King County. Transmitted in a letter from Norman Dion, USGS, to Russ Darr, Ecology. December 12, 1989.

EPA-CERCLIS Site List

We reviewed EPA's Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS), a data base used by the EPA to track activities conducted under its Superfund Program. Twelve CERCLIS list sites were identified in the Green River valley. Of these, only the Western Processing site yielded comprehensive hydrogeologic and chemical data.

CH2M Hill supplied AGI with Western Processing reports from various sources dating from 1982-1986. There is a considerable amount of water quality data from the site, including anion/cation data. AGI selected data from 5 wells for tabulation. Chemical analyses presented in Table 2 are from the Final Report-Supplementary Remedial Investigation (CH2M Hill, July, 1986). The 5 wells selected are approximately the same depth as KMW-10B (80 feet to 120 feet), have relatively high conductivities (>8,000 micromohs/cm), and have anion/cation chemistry data. Chemical analysis results from the other Western Processing wells showed lower conductivities and less dissolved anions and cations.

United States Geological Survey

Unpublished 1987-88 groundwater chemistry analyses for 38 wells completed in the Quaternary Alluvium of southwest King County were obtained from the USGS by Russ Darr of Ecology. Of these, 4 wells were within 5 miles of the landfill and completed in the Valley Aquifer. These wells are shown in Figure 1 and described in Tables 1 and 2.

Washington Public Water Supply System List

A well location map and chemical data were obtained for 11 public water supply wells located in south King County. Only one of these wells was located in the Green River Valley (Logandale Water Association); however, no stratigraphic information was available for this well, so it was eliminated from consideration.

Geology and Ground-Water Resources of Southwestern King County, Washington-Water Supply Bulletin No. 28

Water Supply Bulletin No. 28 contains reference to saline groundwater in the section titled "(Water) Quality In Relation To Use" (pages 52 and 53) as follows: "higher-than-normal chloride concentrations are common in ... this alluvium (Valley Aquifer), probably because of residual sea water trapped there less than 5,000 years ago as the Duwamish embayment filled with sediment."

Chemical analyses are reported for approximately 60 wells. None of these wells were completed in the Valley Aquifer.

OFF-SITE SAMPLING WELL IDENTIFICATION

Purpose

The Phase 1 RI/FS Work Plan called for sampling of up to 5 off-site wells located in the Green River valley to help evaluate the source of saline water in KMW-10B and obtain background water quality information for the Valley Aquifer. The following sections discuss how potential sampling wells were identified, summarize the results of field screening identified wells, and present recommendations for sampling.

Scope

The locations of potential sampling wells were identified through a combination of existing data research and field reconnaissance. The search area was limited to the Green River Valley 2 miles north and south of the landfill. Only wells completed in the Valley Aquifer were considered for sampling.

Methodology

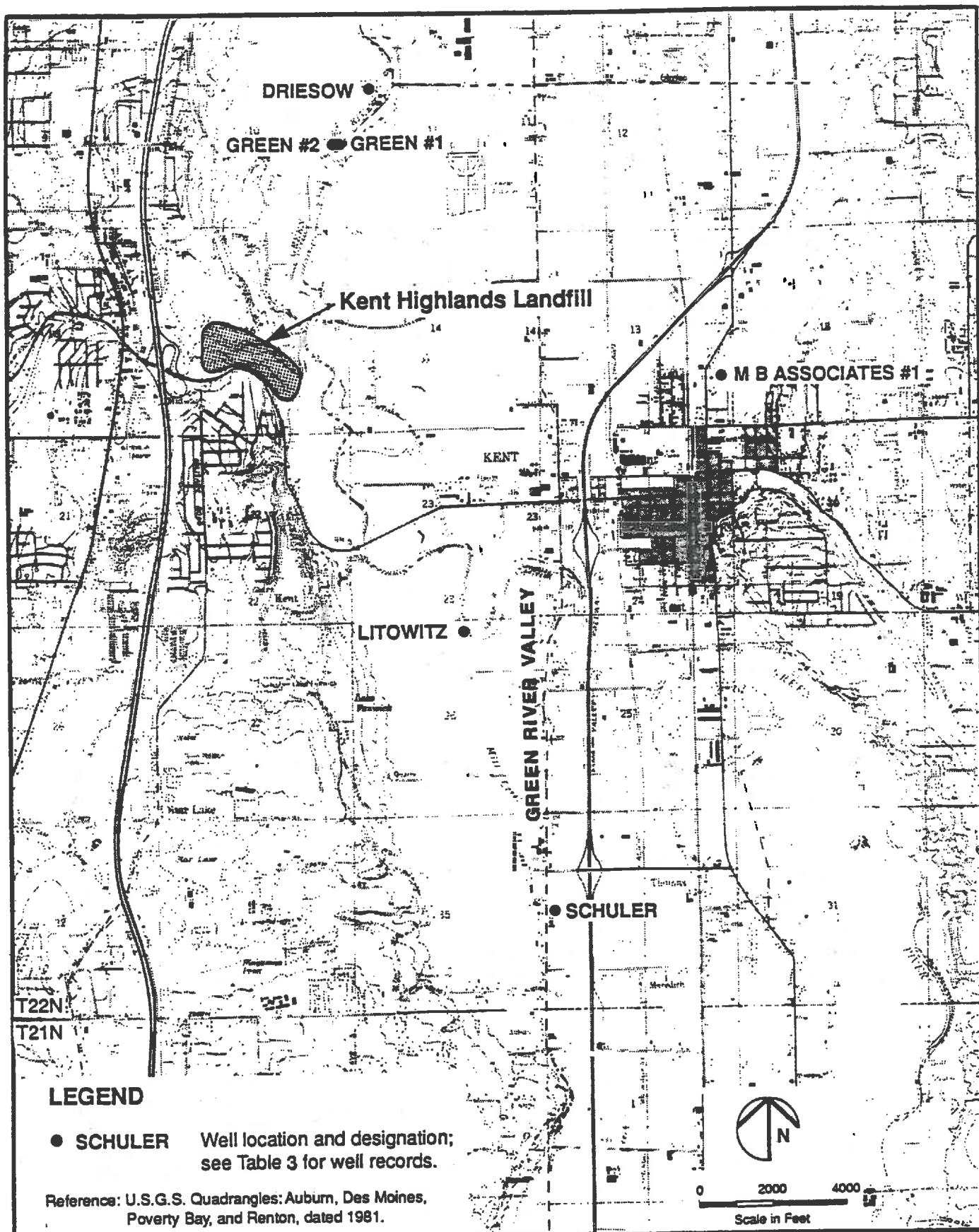
Approximately 160 driller's water well reports and logs from wells in and adjacent to the Green River Valley between Auburn and the Black River were obtained by the City from the Department of Ecology. The logs were evaluated by AGI to determine if they were completed in the Valley Aquifer. Fifteen wells were selected for field screening based on this evaluation.

Two wells identified in USGS Bulletin No. 28 were selected for field screening on the basis of relatively high ($>1,000$ micromohs/cm) specific conductance measurements. In addition, nine residences/businesses on Frager Road between the landfill and the West Valley Highway were identified as potentially having water supply wells based on a visual reconnaissance.

We attempted to field the 26 potential off-site sampling wells between May 18 and June 1, 1990. Typically, property owners were approached at their residences, the purpose of field screening explained, and permission to obtain water samples requested. Inquiries were made concerning well use and water quality, as well as knowledge of local water use and quality. If the wells could be sampled, they were checked for temperature, pH, and conductivity.

Results

Of the 26 potential off-site sampling locations, 9 did not have wells, 6 had wells and were sampled for water quality parameters by AGI personnel, 9 were not accessible for various reasons or could not be located, and 2 were not completed in the Valley Aquifer. The results of field screening are briefly described below. Wells are typically referenced by the last name of the last known owner. The locations of wells from which water quality parameters measurements were obtained are presented in Figure 2 and physical characteristics of these wells are presented in Table 3.



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Potential Off-Site Sampling Wells **Literature Search Technical Memorandum** **Kent Highlands Landfill RI/FS** **Kent, Washington**

FIGURE

2

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DATE
14 Nov. 90

[Figure G-3]

Arnold: Well was not completed in the Valley Aquifer.

Balzarini: Well access was denied.

Birkeland No. 1: Well was abandoned.

Birkeland No. 2: Well was not completed in the Valley Aquifer.

Driesow: Water quality parameters were checked; conductivity = 8,700 micro siemens. Water is used for vehicle washing.

Green No. 1: Water quality parameters were checked; conductivity = 830 micro siemens. Water is used for irrigation and livestock.

Green No. 2: Water quality parameters were checked; conductivity = 430 micro siemens measured on chemically-treated water. It was not possible to sample untreated water. Well is used for domestic supply and serves seven residences.

Johnson: Well access was denied.

Litowitz: Water parameters were checked; conductivity = 250 micro siemens. Water is used for everything but drinking.

M.B. Associates No. 1: Water quality parameters were checked; conductivity = 260 micro siemens. Water is used for landscape irrigation and pond filling. Pump operates nearly continuously in the summer.

M.B. Associates No. 2: Well was not sampled; lacked sampling port.

Nakaruma: Residence was abandoned. Disconnected electrical service prevented water sampling.

Schuler: Water quality parameters were checked; conductivity = 270 micro siemens. Water is used for domestic purposes.

U.S.G.S. Bulletin Wells: Wells were not located.

Nine Frager Road Residences: No wells were identified; properties typically are provided water by the City of Kent.

AGI recommended three wells for sampling based on the field screening: Driesow because of its high conductivity, Green No. 1 because of its moderately high conductivity, and Littowitz because of its relatively low conductivity. These wells were sampled in groundwater sampling rounds 4 and 5 of the RI.

Table 3
Well Records – Off-Site Sampling Well Identification
Literature Search Technical Memorandum
Kent Highlands Landfill RI/FS

Well Designation	a Use	Date Completed	Drilling Depth (feet)	Boring Diameter (Inches)	Screen Size(Inches)/ Type	Screen Depth (Feet)	Comments
Driesow	W	7/85	70	6	5/Stainless	65-70	Well sampled in rounds 4 & 5.
Green #1	I	2/83	60	6	6/Stainless	53-58	Well sampled in rounds 4 & 5.
Green #2	D	12/85	65	6	6/Stainless	55-65	Well water chemically treated.
Littowitz	D	3/81	240	6	6/Stainless	81-86	Well sampled in rounds 4 & 5.
M.B. Associates #1	I	1/86	88	6	6/Stainless	83-88	Well sampled by USGS. See Tables 1 and 2.
Schuler	D	4/81	76	6	Open Bottom	None	Well sampled by USGS. See Tables 1 and 2.

Notes:

a) D = Domestic, I = Irrigation, W = Vehicle Wash

WATER SUPPLY WELL INVENTORY

Purpose

The purpose of the water supply well inventory (inventory) was to identify domestic and public water supply wells within a 1-mile radius of the Kent Highlands Landfill. This information will be used to identify sensitive potential receptors for the Human Health and Environmental Risk Assessment being prepared as part of the RI.

Scope

The search was limited to a 1-mile radius around the landfill, as specified by the U.S. Environmental Protection Agency in the guidance document, Risk Assessment Guidance for Superfund (1989). Wells were included in the inventory within this area regardless of their hydraulic relationship to the landfill and were identified by researching literature only; no field surveys were conducted as part of the inventory.

Methodology

AGI compiled a list of potential information sources in April 1990 and transmitted it to the City through CH2M Hill. The inventory boundary was determined by scaling a 1-mile radius from the outside limits of the landfill. Inventory information was collected by City personnel in conjunction with the Valley Aquifer water quality data search described above. The following is a list of information sources reviewed or contacted for the water supply well inventory:

- o City of Kent
- o King County Water District No.75 (KCWD No. 75)
- o Final Environmental Impact Statement for Midway Landfill Closure Plan, Appendix N, (Parametrix, 1985)
- o South King County Ground Water Management Plan (South King County Groundwater Advisory Committee, 1989)
- o Washington Department of Ecology Water Well Reports-Sections 9, 10, 11, 14, 15, 16, 21, 22, and 23 of Township 22N, Range 4E
- o Washington Public Water Supply System List
- o Geology and Ground-Water Resources of Southwestern King County, Washington-Water Supply Bulletin No. 28 (Luzier, 1969)

Results

The following sections discuss information obtained from sources listed above. Figure 3 shows well locations identified in the water supply well inventory and Table 4 presents their physical characteristics.

City of Kent

The City contacted the City of Kent Engineering Department (KED). The KED reported they do not have any water supply wells within a 1-mile radius of the landfill. The majority of City of Kent wells are located on the east side of the Green River valley.

King County Water District No. 75

A review of the sources listed above indicated KCWD No. 75 does not have any active water supply wells within the inventory boundary. AGI contacted KCWD No. 75 and confirmed this.

Midway Landfill RI

Parametrix, Inc. conducted a water supply well inventory as part of the Midway Landfill Environmental Impact Statement. This inventory was reviewed to locate wells where the Midway and Kent Highlands inventory areas overlapped. Three wells were identified in the inventory area.

South King County Ground Water Management Plan

A review of the South King County Ground Water Management Plan showed no water supply wells in the inventory area.

Washington Department of Ecology Water Well Reports

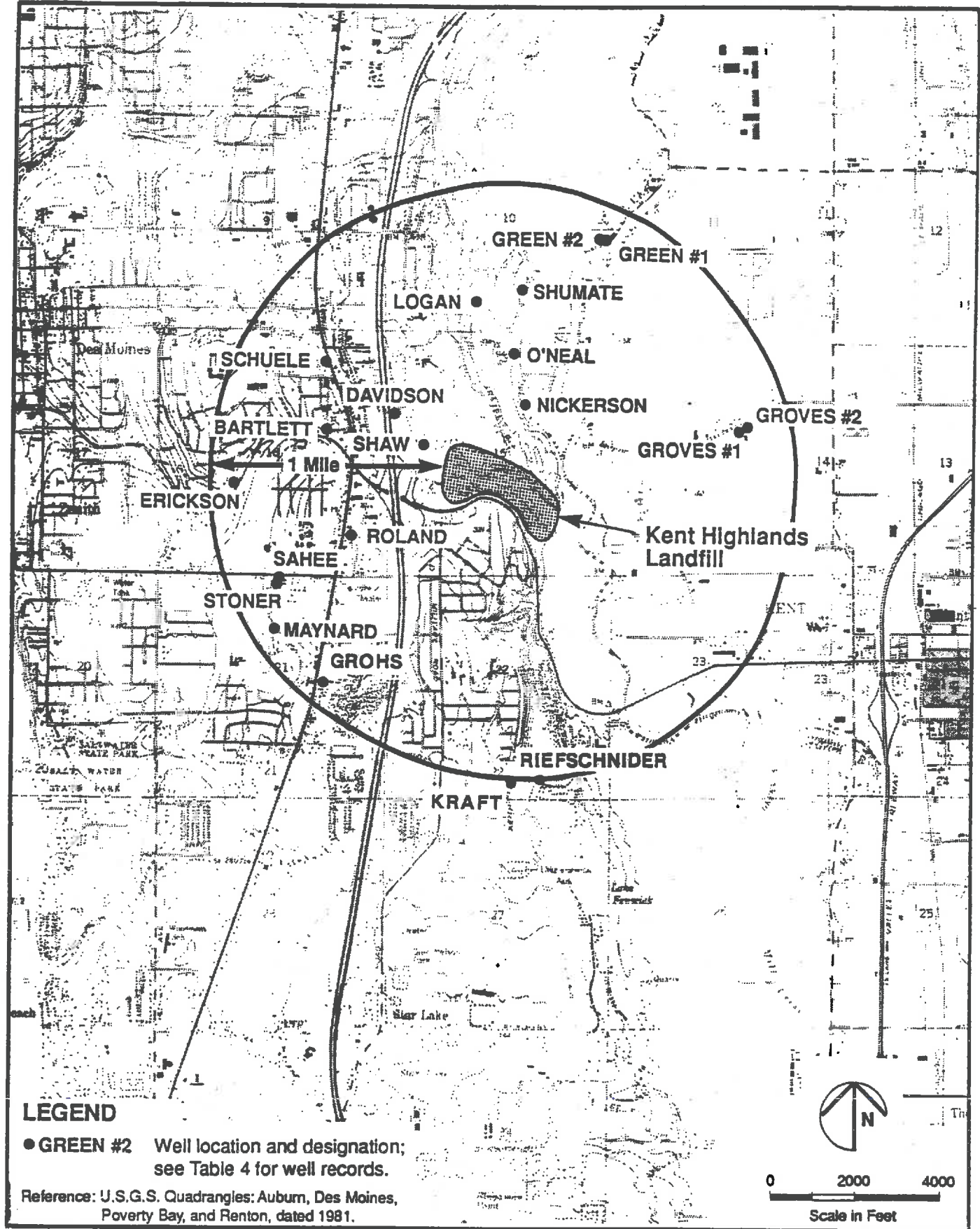
Water well reports were reviewed. Four wells were identified in the inventory area.

Washington Public Water Supply System List

A review of the Washington Public Water Supply System List showed no water supply wells in the inventory area.

Geology and Ground-Water Resources of Southwestern King County, Washington-Water Supply Bulletin No. 28

Water Supply Bulletin No. 28 was reviewed. Thirteen wells were identified in the inventory area. Well use information from this document is more than 20 years old and may be outdated.



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Water Supply Well Inventory

Literature Search Technical Memorandum

Kent Highlands Landfill RI/FS

Kent, Washington

FIGURE

3

JOB NUMBER
15,273.018

DRAWN
LCR

APPROVED
LOR

DATE
8-13-90

REVISED
HET

DATE
11-13-90

[Table G-5]

Applied Geotechnology Inc.

Table 4
Well Records – Water Supply Well Inventory
Literature Search Technical Memorandum
Kent Highlands Landfill RI/FS

Owner/ Well Designation	Last Known Use	Date Completed	Drilling Depth (feet)	Boring Diameter (Inches)	Screen Size(Inches)/ Type	Screen Depth (Feet)	Reference/Comments
Bartlett	D	NA	101	6	NA	NA	Luzier
Davidson	I	NA	24	30	NA	NA	Luzier
Erikson	D	1936	93	6	NA	NA	Luzier
Green #2	D	1985	65	6	6/Stainless	55-65	Ecology/Well sampled in Rounds 4 & 5.
Green #1	I	1983	60	6	6/Stainless	53-58	Ecology
Grohs	U	NA	NA	NA	NA	NA	Parametrix
Groves Property Partnership #1	NA	1986	291	6	6/Stainless	276-291	Ecology
Groves Property Partnership #2	NA	1986	340	8	8/Stainless	325-340	Ecology
Logan	A	1950	247	6	NA	125-145	Luzier
Maynard	U	NA	NA	6	NA	NA	Luzier
Nickerson	D	NA	6	65	NA	NA	Luzier
O'Neal	D	NA	37	NA	NA	NA	Luzier
Riefschnider	I	1948	246	6	NA	NA	Luzier
Roland	U	NA	NA	6	NA	NA	Luzier
Sahee	U	NA	NA	NA	NA	NA	Parametrix
Schuehle	D	NA	152	6	NA	NA	Luzier
Kraft	M	NA	NA	6	NA	NA	Luzier, well sampled as part of the Midway RI.
Shaw	D	NA	68	6	NA	NA	Luzier
Shumate	D	NA	56	6	NA	NA	Luzier
Stoner	D	NA	36	48	NA	NA	Parametrix

Notes:


- a) A = Abandoned, D = Domestic, I = Industrial, M = Monitoring, U = Unused, NA = Not available.
b) Luzier, J.E. Geology and Ground-Water Resources of Southwestern King County, Washington. Prepared in cooperation with the United States Geological Survey. Water Supply Bulletin No. 28. 1969.
c) Water well report obtained from Ecology.
d) Parametrix. Final Environmental Impact Statement for Midway Closure Plan, Appendix N. Prepared for Seattle Engineering Department Solid Waste Utility. 1985.

DISTRIBUTION

3 Copies

CH2M Hill
777 108th N.E., 8th Floor
Post Office Box 91500
Bellevue, Washington 98009

Quality Assurance/Technical Review by:


Mackey Smith, C.E.G.
Vice President

ADC/MAA/tag

Attachment C

Water Well Logs and Backup Information



Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-10Q1
Map ID	10Q1
North	150257.289
East	1283910.724
Owner	Shumate
Address	22262 Russell Rd
Well Depth	56
Surf. Elev.	73
Screen Int.	56
Log?	N
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	WSB 28, KCA
WL Ft BGS	37
Use³	NIU
Source of Info	KCA
Notes	
Operable?	No
Accessible	No
Well Type	Domestic
Loc Quality⁴	Q
Old Inventory #	N/A
Completion Elevation	17
Water Level Elevation	36

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horse- power		
10Q1	T. 22 N., R. 4 E - Contd. --Shumate	73	Dr	56	6	36.97	8-24-62	J	3/4	D	

GEOLOGY AND GROUND WATER, SOUTHWESTERN KING CO.,

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-14L1
Map ID	14L1
North	146114.371
East	1286207.370
Owner	Lakes 1
Address	23534
Well Depth	48.5
Surf. Elev.	35
Screen Int.	35 - 45
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY WR, KCA
WL Ft BGS	9.82
Use³	NIU
Source of Info	KCA
Notes	On public water supply
Operable?	Unlikely
Accessible	No
Well Type	Group A
Loc Quality⁴	A
Old Inventory #	N/A
Completion Elevation	-10
Water Level Elevation	25.18

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-14L2
Map ID	14L2
North	145912.201
East	1286745.258
Owner	Lakes 3
Address	5920 S 235th St
Well Depth	48.7
Surf. Elev.	35
Screen Int.	35 - 45
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY WR, KCA
WL Ft BGS	8.6
Use³	NIU
Source of Info	KCA
Notes	On public water supply
Operable?	Likely
Accessible	Yes
Well Type	Group A
Loc Quality⁴	A
Old Inventory #	
Completion Elevation	-10
Water Level Elevation	26.4

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-14Q1
Map ID	14Q1
North	145518.135
East	1287561.628
Owner	Lakes 2 & Lakes 2 re-drill
Address	23605 60th Ave S
Well Depth	98
Surf. Elev.	35
Screen Int.	49-94
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY WR, ECY, KCA
WL Ft BGS	4
Use³	PIU
Source of Info	ECY
Notes	Original well 45 ft Well deepened in 2004
Operable?	Yes
Accessible	Yes
Well Type	Group A
Loc Quality⁴	A
Old Inventory #	
Completion Elevation	-59
Water Level Elevation	31



WATER WELL REPORT

Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission ("x" in circle)

☒ Construction

☐ Decommission ORIGINAL CONSTRUCTION Notice of Intent Number

199762

PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal
☐ DeWater ☒ Irrigation ☐ Test Well ☐ Other

TYPE OF WORK: Owner's number of well (if more than one) _____
☐ New Well ☐ Reconditioned Method: ☐ Dug ☐ Bored ☐ Driven
☒ Deepened ☒ Cable ☐ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 8 inches, drilled 98 ft.
 Depth of completed well 94 ft.

CONSTRUCTION DETAILS
 Casing ☒ Welded 8 " Diam. from -2 ft. to 98 ft.
 Installed: ☐ Liner installed " Diam. from " ft. to " ft.
☐ Threaded " Diam. from " ft. to " ft.

Perforations: ☐ Yes ☒ No
 Type of perforator used _____
 SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☒ Yes ☐ No ☐ K-Pac Location _____
 Manufacturer's Name Johnson
 Type SS Model No. _____
 Diam. 8 Slot Size 20 from 94 ft. to 69 ft.
 Diam. 8 Slot Size 18 from 69 ft. to 49 ft.

Gravel/Filter packed: ☒ Yes ☐ No ☐ Size of gravel/sand 8-12
 Materials placed from 49 ft. to 94 ft.

Surface Seal: ☒ Yes ☐ No To what depth? 22 ft.
 Materials used in seal Bentonite
 Did any strata contain unusable water? ☐ Yes ☒ No
 Type of water? _____ Depth of strata _____
 Method of sealing strata off _____

PUMP: Manufacturer's Name Goulds
 Type: sub H.P. 5

WATER LEVELS: Land-surface elevation above mean sea level 140 ± ft.
 Static level 4' ft. below top of well Date 4-21-04
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level.
 Was a pump test made? ☐ Yes ☐ No If yes, by whom? _____
 Yield: 20 gal./min. with 9 ft. drawdown after 1 hrs.
 Yield: 50 gal./min. with 4 ft. drawdown after 1 hrs.
 Yield: 160 gal./min. with 27 ft. drawdown after 5 hrs.
 Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)
 Time Water Level Time Water Level Time Water Level
 _____ _____ _____ _____ _____ _____
 Date of test _____
 Bailor test 50 gal./min. with -0 ft. drawdown after 3 hrs.
 Airstest _____ gal./min. with stem set at _____ ft. for _____ hrs.
 Artesian flow _____ g.p.m. Date _____
 Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

CURRENT

Notice of Intent No. W148004

Unique Ecology Well ID Tag No. AKG0-50

Water Right Permit No. N/A

Property Owner Name Waterford at the Lake Apartments

Well Street Address 6030 S. 237th St.

City Trent County: King

Location NW 1/4 1/4 SE 1/4 Sec. 14 Twn 22 R. 04 ☒ WWM circle or one WWM

Lat/Long: _____ Lat Deg _____ Lat Min/Sec _____

(s, t, r still REQUIRED) Long Deg _____ Long Min/Sec _____

Tax Parcel No. 142204-9051

CONSTRUCTION OR DECOMMISSION PROCEDURE
 Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.
 (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Brown Clay w/ sand -	44'	98'
Gravel streaks		
Also lots of wood		
w/ streak of clean		
sand & gravel		
water.		

RECEIVED

AUG 09 2005

DEPT OF ECOLOGY

Start Date 3-8-04 Completed Date 4-26-04

← 94'-2 3/4" →
 SCREENS & RISER'S

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) J.L. CANNON

Driller/Engineer/Trainee Signature J.L. Cannon

Driller or Trainee License No. 0071

If trainee, licensed driller's Signature and License no. _____

Drilling Company B & G Drilling

Address 9026 38th Ave. S.W.

City, State, Zip Seattle WA 98126

Contractor's B & G Drilling

Registration No. 08805 Date 8-6-05

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 4/01)



APPLICATION FOR
TO APPROPRIATE PUBLIC WATERS OF THE

☐ SURFACE WATER

☒ GROUND WATER

PERMIT
I have examined this application
as required by RCW 90.03.020 and find that
it is: ☐ not an "action".
☒ categorically exempt.

\$10.00 MINIMUM STATUTORY EXAMINATION FEE REQUIRED WITH APPLICATION
(GRAY BOXES FOR OFFICE USE ONLY)

APPLICATION NO. G125102	W.R.I.A. 9	COUNTY King	PRIORITY DATE 9/22/87	TIME	ACCEPTED m
-----------------------------------	----------------------	-----------------------	---------------------------------	------	----------------------

APPLICANT'S NAME - PLEASE PRINT

CENTRON PROPERTIES CORPORATION

Engineering Consultant
Bruce Dodds, DODDS ENGINEERS
4205 148th Ave. N.E., #200
Bellevue, WA 98007

Bus. Tel. 822-2888

Home Tel.

Other Tel.

ADDRESS (STREET)

3025 112th Ave. N.E.

(CITY)

Bellevue

(STATE)

WA

(ZIP CODE)

98004

DATE & PLACE OF INCORPORATION IF APPLICANT IS A CORPORATION

1/12/79 Bellevue, WA

1. SOURCE OF SUPPLY

IF SURFACE WATER

SOURCE (NAME OF STREAM, LAKE, SPRING, ETC.) (IF UNNAMED, SO STATE)

TRIBUTARY

IF GROUND WATER

SOURCE (WELL, TUNNEL, INFILTRATION TRENCH, ETC.)

Well

SIZE AND DEPTH

8" around - 150' deep

2. USE

USE TO WHICH WATER IS TO BE APPLIED (DOMESTIC SUPPLY, IRRIGATION, MINING, MANUFACTURING, ETC.)

Summer supplement to recreational lake system to replenish water loss to ground & evaporation

ENTER QUANTITY OF WATER
REQUESTED USING UNITS OF:

CUBIC FEET PER SECOND (CFS)
2.5

OR

GALLONS PER MINUTE (GPM)

ACRE FEET PER YEAR
500

Recreational Use

1125 gpm

TIMES DURING YEAR WATER WILL BE REQUIRED

June through October

IF IRRIGATION, NUMBER OF ACRES

IF DOMESTIC USE, NUMBER OF
UNITS BY TYPE, E.G. 1-HOME,
1-MOBILE HOME, 2-CAMPSITES, ETC.

IF MUNICIPAL USE, ESTIMATED
POPULATION
20 YEARS FROM TODAY

DATE PROJECT WAS OR WILL BE STARTED

1982

DATE PROJECT WAS OR WILL BE COMPLETED

1992

3. LOCATION OF POINT OF DIVERSION/WITHDRAWAL

A. IF IN PLATTED PROPERTY

LOT 3	BLOCK - -	OF (GIVE NAME OF PLAT OR ADDITION) Lakes Short Plat (SP-86-21) City of Kent, King County	SECTION 14	TOWN 22N	RANGE 4E	ALSO, PLEASE ENCLOSE A COPY OF THE PLAT AND MARK THE POINT(S) OF WITHDRAWAL OR DIVERSION
-----------------	---------------------	--	----------------------	--------------------	--------------------	---

B. IF NOT IN PLATTED PROPERTY

ON ACCOMPANYING SECTION MAPS, ACCURATELY MARK AND IDENTIFY EACH POINT OF DIVERSION. SHOW
NORTH-SOUTH AND EAST-WEST DISTANCES FROM NEAREST SECTION CORNER OR PROPERTY CORNER.

ALSO, ENTER BELOW THE DISTANCES FROM THE NEAREST SECTION OR PROPERTY CORNER TO THE DIVERSION OR WITHDRAWAL.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)

SECTION

TOWNSHIP N.

RANGE (E. OR W.) W.M.

COUNTY

SW 1/4 SE 1/4 14 22 4E King

4. DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER

Yes

5. LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

ATTACH A COPY OF THE LEGAL DESCRIPTION OF THE PROPERTY (ON WHICH THE WATER WILL BE USED) TAKEN FROM
A REAL ESTATE CONTRACT, PROPERTY DEED OR TITLE INSURANCE POLICY. OR, COPY CAREFULLY IN THE SPACE BELOW.

See attached "The Lakes-Total Property"

RECEIVED
SEP 22 1987

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

APPLICATION

Owner/Developer

ARE THERE ANY EXISTING WATER RIGHTS RELATED TO THE LAND ON WHICH THE WATER IS TO BE USED (INCLUDING WATER PROVIDED BY IRRIGATION DISTRICTS OR DITCH COMPANIES.) ☐ YES ☒ NO

IF YES, FROM WHAT SOURCE (i.e. SURFACE OR GROUND WATER) AND UNDER WHAT AUTHORITY

6. DESCRIPTION OF SYSTEM PROPOSED OR INSTALLED

(FOR EXAMPLE: SIZE OF PUMP, CAPACITY OF PUMP, PUMP MOTOR HORSE POWER, PIPE DIAMETER, NUMBER OF SPRINKLERS, ETC.)

See attached documentation. This well is intended to provide sufficient supplemental water to maintain the 28 acre recreational lake at normal operating level during the summer months when the ground water level tends to recede below that normal level. The well will basically pump groundwater to the lake where it will return back to the groundwater aquifer. If more detail is required, contact Bruce Dodds, Dodds Engineers, (206) 885-7877.

REMARKS

7.

IF 10 ACRE-FEET OR MORE OF WATER IS TO BE STORED AND/OR IF THE WATER DEPTH WILL BE 10 FEET OR MORE AT THE DEEPEST POINT, A STORAGE PERMIT MUST BE FILED IN ADDITION TO THIS PERMIT. THESE FORMS CAN BE SECURED, TOGETHER WITH INSTRUCTIONS, FROM THE DEPARTMENT OF ECOLOGY.

SIGNATURES

CENTRON PROPERTIES CORPORATION
LEGAL LANDOWNERS NAME
(PLEASE PRINT)

Danell J. Aicher
APPLICANT'S SIGNATURE

Danell J. Aicher
LEGAL LANDOWNER'S SIGNATURE (OWNER OF PROPERTY
DESCRIBED IN ITEM NUMBER 5)

3025 112th Ave. N.E., Bellevue, WA
LEGAL LANDOWNER'S ADDRESS

FOR OFFICE USE ONLY

STATE OF WASHINGTON }
DEPARTMENT OF ECOLOGY } SS.

This is to certify that I have examined this application together with the accompanying maps and data, and am returning it for correction or completion as follows:

.....

.....
In order to retain its priority date, this application must be returned to the Department of Ecology, with corrections, on or before....., 19.....

Witness my hand this.....day of....., 19.....

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐

Surface Water

(Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒

Ground Water

(Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE September 22, 1987	APPLICATION NUMBER G1-25102	PERMIT NUMBER G1-25102 P	CERTIFICATE NUMBER G1-25102 C
-------------------------------------	--------------------------------	-----------------------------	----------------------------------

NAME
Lakes at Kent Community Organization

ADDRESS (STREET) (CITY) (STATE) (ZIP CODE)
12737 Bel-Red Road #200 Bellevue Washington 98005

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown, but is limited to an amount actually beneficially used.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE

3 Wells

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 450	MAXIMUM ACRE-FEET PER YEAR 45
-------------------------------	-----------------------------------	----------------------------------

QUANTITY, TYPE OF USE, PERIOD OF USE

Recreational use - June through October (to supplement lake level)

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL

P.O.D. #1 - 695 feet west and 440 feet south from the center of Section 14.
P.O.D. #2 - 980 feet east and 1190 feet south from the center of Section 14.
P.O.D. #3 - 470 feet west and 540 feet south from the center of Section 14.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) SW¼ SE¼	SECTION 14	TOWNSHIP N. 22	RANGE, (E. OR W.) W.M. 4E	W.R.I.A. 9	COUNTY King
--	---------------	-------------------	------------------------------	---------------	----------------

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
-----	-------	------------------------------------

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Those portions of Sections 14 and 15, T.22N., R.4E., W.M., and the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows: BEGINNING at the S¼ corner of said Section 14; thence south 88°59'16" east, along the south line thereof, 1317.07' to the southeast corner of the SW¼ of the SE¼ thereof; thence north 00°52'51" east, along the east line of said subdivision, 1322.30' to the northeast corner thereof; thence north 89°01'49" west, along the north line of said subdivision, 881.50' to an intersection with a line parallel with and 436.2' easterly, as measured at right angles, from the north-south centerline of said Section 14; thence north 00°52'22" east, along said parallel line, 903.78'; thence south 89°01'31" east 881.18' to the east line of the NW¼ of the SE¼ of said Section 14; thence north 00°25'51", along said east line, 418.60' to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44' to the center of said Section; thence north 00°52'22" east, along said east line, 418.60' to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44' to the center of said Section; thence north 00°52'22" east, along the north-south centerline thereof, 587.81', more or less, to the southerly right-of-way margin of south 228th Street; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83', as measured at right angles, of the S¼ of said David A. Neely Donation Land Claim No. 37, said 287.83' being equal to 310' as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running north 89° 13'00" west, along said south line, 152.63' to the easterly bank of the Green river; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14; thence leaving said easterly bank and running south 89°05'32" east, along said south line, 968.18' to the POINT OF BEGINNING. EXCEPT the south 30' thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File Nos. 6332263 and 6332264.

PROVISIONS

Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air line and gauge may be installed in addition to the access port.

An approved measuring device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through 508-64-040 (Installation, operation and maintenance requirements). Meter readings shall be recorded monthly and this data shall be maintained and be made available to the Department of Ecology upon request.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.14.180.

Given under my hand and the seal of this office at Bellevue, Washington,

this 28th day of February, 1995.

Department of Ecology

ENGINEERING DATA
OK ALCS

by Stephen J. Hirschey
Stephen J. Hirschey, Section Supervisor, Water Resources

FOR COUNTY USE ONLY



Golder Associates Inc.
CONSULTING ENGINEERS

REPORT TO
CENTRON
ON

INSTALLATION AND TESTING
OF WATER-SUPPLY WELLS
THE LAKES, KENT, WASHINGTON

Prepared by:

David Banton
Associate

April 5, 1990

853-1256.003

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4. PW-3 Pump Test Hydrographs

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- APPENDIX A. Well Completion Diagrams
APPENDIX B. Water Quality Data

1. INTRODUCTION

This report describes the installation and testing of three wells at The Lakes housing complex in Kent, Washington. The wells were installed in order to provide a source of groundwater to top up the on-site artificial lake during the summer months.

Previous work by Golder Associates Inc.¹ at the Lakes indicated that the artificial lake was excavated into predominately low-permeability silty clays which form a natural liner over most of the lake bed. However, over a small portion of the lake (estimated at less than two acres), a more permeable sand is present. This fine sand is the means by which groundwater enters the lake in the winter when groundwater levels are high, but is also the primary pathway by which water drains out into the aquifer during the summer when groundwater levels are low.

Based on experiments carried out in 1989, we estimated that seepage losses from the lake during the summer would reach a maximum of about 300 to 400 gpm. In addition, evaporative losses were estimated at a maximum of 75 gpm. Therefore, the total maximum losses from the lake were estimated at between 400 and 500 gpm. Based on recent years, water to top up the lake will probably be required between June/July and September/October each year. As groundwater levels decline during the early summer, the quantity of water required to maintain the lake will increase. Therefore, water demand is expected to increase gradually during the summer months possibly reaching a peak by early September, and then decline somewhat in early fall due to lower evaporation rates and rising groundwater levels.

The following sections of this report detail the drilling, installation, development, pump testing and water-quality sampling of the new wells. Based on the results of the testing, we have provided recommendations for permanent installation, operation and monitoring of the system over the coming summer to document its performance.

¹ Golder Associates Inc., 1989. Draft Report to Centron on Hydrogeologic Investigations at Island Park, Kent. Reference 853-1256.003, dated October 1989.

2. WELL CONSTRUCTION AND TESTING PROGRAM

2.1 Drilling and Well Installation

Three boreholes were drilled at The Lakes during December, 1989 and are located as shown in Figure 1. Borehole drilling, well installation and development, and pump testing were conducted by AquaFlo Testing and Equipment, Inc. of Puyallup, Washington. The work was observed and documented by a Golder Associates Inc. hydrogeologist. Borehole logs and well completion diagrams are provided in Appendix A.

The boreholes, PW-1, PW-2, and PW-3, were drilled using a 30-inch diameter bucket auger to depths of 48.5, 47.5 to 48.7 feet, respectively. Borehole stability was maintained during drilling and well installation by keeping the borehole full of water, which was obtained from a nearby hydrant.

The boreholes were completed using a 12-inch diameter pipe-size stainless-steel well screen and mild-steel well casing. Each well screen is ten feet in length and is constructed of continuous wire-wound type 304 stainless-steel with 0.03-inch slot size. Attached to the bottom of the wellscreen is a three-and-a-half foot long sediment sump which is set at the bottom of each borehole. Mild-steel casing is welded to the screen and extends about two feet above ground surface (see well completion diagrams in Appendix A for exact stick-up of each well casing).

The annular space outside the well screen was filled with Colorado 10/20 sand to approximately five feet above the top of the screen. Wells PW-1 and PW-2 were then back-filled with sand cuttings to a depth of 18 feet below ground surface (bgs), while well PW-3 was back-filled with gravel, also to a depth of 18 feet bgs. A cement-bentonite grout was then used to seal the remaining annular space up to the ground surface of all three wells.

2.2 Well Development and Pump Testing

Each well was developed following installation. Development consisted of over-pumping the well for several hours until the discharge water was clear. Subsequent to development, each well was pump tested. Because of the poor performance of the wells during the first pump tests, each well was subsequently re-developed by high-pressure jetting with water to increase well yield. Water used in well development was obtained from hydrants. The pump tests were carried out using a submersible pump, with the pump intake set at a depth of about 34 feet below the top of the casing (toc) for each test. Flowrates were measured using a flow meter and totalizer and/or an orifice and clear plastic manometer tube.

The following sub-sections detail the drilling and testing work completed on each well.

2.2.1 Production Well PW-1

Following initial well development, a 24-hour pump test was conducted on PW-1 on December 28, 1989. The static water level in the well prior to the test was 9.82 feet below toc. Pumping started at a rate of 200 gpm, but was cut back to 180 gpm 18 hours into the test, because the pumping water level was approaching the pump intake. The water level continued to drawdown and, as a result, the pumping rate was cut back further to 150 gpm for the remainder the test. The total drawdown at the end of the test was 23.96 feet. A semi-log plot of the drawdown during the test is presented on Figure 2A. Pumped water from PW-1 was discharged directly into the lake.

During the test, water levels were measured at regular intervals in the pumping well, using an electrical water-level indicator, and in monitoring wells B-5, B-6, B-7, and P-3, using pressure transducers. Water levels were measured at irregular intervals in the other two production wells, PW-2 and PW-3.

Well PW-1 is located in close proximity to the abandoned dewatering well B-10. A previous pump test of well B-10 indicated that near steady-state conditions were achieved after about 18 to 24 hours of pumping. The specific capacity of well B-10 was also much greater than that of well PW-1 (16.7 gpm/ft of drawdown compared to 8.5 gpm/ft of drawdown). Because of the excessive drawdown and the lower specific capacity observed in well PW-1, additional development of the well was performed.

Re-development was performed using a 10.5-inch diameter high-pressure water-jetting tool. Before re-developing commenced, it was found that the well contained four feet of sediment (three-and-a-half feet in the sediment sump and one-half foot in the lower part of the well screen). It was concluded that the sediment likely entered the well during the first pump test. Prior to re-development, the sediment was pumped out of the well using a suction pump.

Re-development consisted of injecting high-pressure water through the jetting tool to disturb the sand pack outside the well screen and allow fine sediment to enter the well rather than block the sand filter pack. Coincident with jetting, the well was pumped using a suction pump to maintain a near constant water level in the well. Jetting was carried out over the entire screened interval until the discharge was clear of sediment. This process took about four hours after which a half-hour specific capacity test was conducted. A specific capacity of 25 gpm/ft was obtained.

PW-1 was again tested on February 12, 1990 at a constant rate of 150 gpm for 26 hours and 20 minutes. The static water level prior to pumping was 7.05 below toc. The response to pumping was measured primarily using pressure transducers in the pumping well and in monitoring well B-5. Manual measurements were also taken in the pumping well. The pumping water level in the well stabilized rapidly, reaching a near steady-state drawdown of 7.5 feet after about twenty hours of pumping (see Figure 2B). Following testing, the water level in the well recovered to close to the original static level within several hours. The specific capacity of the well was determined to be about 19 gpm/ft after 24 hours of pumping.

Drawdowns, at the end of the first pump test for PW-1, in the monitoring wells B-5, B-6, and B-7 were measured at 2.4, 1.2, and 1.0 feet, respectively. The drawdown observed in P-3 was negligible. Drawdowns in PW-2 and PW-3 were measured to be 0.45 feet and 1.21 feet, respectively.

2.2.2 Production Well PW-2

Following initial well development by over-pumping, a 24-hour pump test was conducted in PW-2 on January 2, 1990 at a rate of 150 gpm. The static-water level in the well prior to the test was 11.08 feet below toc. The response to pumping was measured manually, with an electric water-level indicator, in the pumping well and with pressure transducers in monitoring wells B-5, B-6, B-7, and P-3 at regular intervals. Water levels in the other two production wells, PW-1 and PW-3, were measured intermittently throughout the test. Water from the test was discharged directly into the lake.

The drawdown in PW-2, like the first pump test in PW-1, initially approached stabilization, but then rapidly increased after approximately five hours of pumping (Figure 3A). At the end of the test, the pumping water level in the well was approaching the pump intake. The rapid increase in the rate of drawdown was attributed to fine sediment clogging the sand pack as pumping proceeded. This indicated that the initial development was insufficient, and that additional development was required to maximize well performance.

In order to improve the performance of well PW-2, the well was developed by high-pressure jetting. Before commencing re-development, however, approximately five feet of silty fine sand was pumped out from the bottom of the well using a suction pump. A half-hour specific capacity test was conducted after jetting the well which yielded a specific capacity of 21 gpm/ft of drawdown.

PW-2 was pump tested for a second time on February 14, 1990 at a constant rate of 150 gpm for 24 hours. The static-water level prior to pumping was 9.28 feet below toc. The response to pumping was measured using a pressure transducer in the pumping well supplemented by manual measurements. The well performance improved significantly from the first test. However, approximately 700 minutes into the test, the rate of drawdown showed signs of increasing which indicated that the re-development might not have been completely successful.

A third, and longer duration pump test was conducted in PW-2 without further re-development of the well. The third test was conducted on February 19, 1990 at a rate of 150 gpm for 46.5 hours. The static-water level prior to pumping was 9.44 feet from toc. The response to pumping was measured using a pressure transducer in the pumping well supplemented by manual measurements. The well performance was similar to the second pump test and, therefore, the well was subsequently re-developed with the jetting tool before commencing a fourth pump test.

PW-2 was tested for the fourth time on February 28, 1990 at a lesser pumping rate of 100 gpm for about five days. As testing proceeded, the pumping rate increased slightly and had

to be manually decreased on a number of occasions to maintain the 100 gpm constant rate. The static-water level prior to pumping was 9.43 feet from toc. Following testing, the water level in the well recovered rapidly to near static levels.

The response to pumping was measured using a pressure transducer in the pumping well supplemented by manual measurements. The well performance (see Figure 3B) was significantly improved when compared to the first test, but only marginally better when compared to the second and third tests (yielding a specific capacity of 11.29 gpm/ft compared to that of 7.04 gpm/ft for the first test, both after a period of 24 hours).

Drawdowns measured in wells B-5, B-6, B-7, PW-1, and PW-3 were 0.42, 0.4, 0.96, 0.36, and 0.68 feet, respectively during the first test. The drawdown in well P-3 was negligible. The closest well, B-7, is approximately 1,000 feet away and the furthest well, PW-1, is approximately 1,550 feet away.

2.2.3 Production Well PW-3

As a result of the initial pump tests on wells PW-1 and PW-2, PW-3 was developed by high-pressure jetting prior to pump testing. The well was first developed using a water pressure of 90 psi after which a half-hour specific capacity test yielded a value of 24.7 gpm/ft of drawdown.

A 24-hour pump test was conducted in PW-3 on January 30, 1990 at a rate of 200 gpm. The static-water level prior to pumping was 8.6 feet below toc. The response to pumping was measured manually using a water-level indicator in the pumping well and using pressure transducers in monitoring wells B-5, B-6, and B-7. The water from PW-3 was discharged into a manhole draining into the lake.

The first pump test showed an improvement over the results from the first tests in PW-1 and PW-2, but still showed an increasing rate of drawdown after approximately five hours into the test (Figure 4A). As a result, PW-3 was further developed with the jetting tool using a higher water pressure of 150 psi. A fifteen minute specific capacity test yielded a value of 21 gpm/ft before re-development and of 26.7 gpm/ft after re-development.

A step-test was conducted on February 7, 1990 starting with a flowrate of 88 gpm and progressing every 30 minutes to 100 gpm, 150 gpm, 225 gpm, and 300 gpm, respectively. Static water level prior to pumping was 8.33 feet from toc. The last step lasted for approximately five hours. The response to pumping was measured primarily using pressure transducers in the pumping well and in monitoring well B-5. Occasional manual measurements were also taken in the pumping well for the duration of the test.

Following the step-test, PW-3 was pumped at a constant rate of approximately 150 gpm for 24 hours and 40 minutes on February 8, 1990. The static water level prior to pumping was 8.35 feet from toc. The response to pumping was measured using pressure transducers in the pumping well and in well B-5.

The step-test and constant-rate test both showed an improvement over the first pump test in PW-3. A graph of the drawdown in the well during the constant-rate test (Figure 4B) indicates that the drawdown was approaching steady-state conditions after about one day of pumping.

The drawdowns in the other two production wells during the first pump test in PW-3 at a rate of 200 gpm, were 1.18 feet in PW-1 and 0.87 feet in PW-2. Drawdowns in B-6 and B-7 were 1.2 and 1.95 feet, respectively.

2.3 Water-Quality Sampling

Water samples for volatile organic compounds (VOC) analysis and for metals analysis were taken from PW-1 on December 29, 1989; from PW-2 on January 3, 1990; and from PW-3 on January 31, 1990. Samples obtained for VOC analysis were collected in two 40 ml glass vials, each with a septum cap, and were preserved with 0.25 ml of hydrochloric acid. Samples obtained for analysis of metals were collected in 500 ml plastic bottles containing 1 ml of nitric acid preservative. The pH, specific conductivity, and temperature of each sample were determined in the field.

Each sample was taken from the pumping well, through a bleed valve at the well head, prior to turning off the pump while conducting the first set of pump tests. All samples were delivered within approximately five hours after sampling to Analytic Technologies Inc. (ATI) in Renton. In transport, the samples were stored in a cooler with frozen blue ice until delivery to ATI.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Stratigraphy

The geologic logs from the three boreholes PW-1, PW-2, and PW-3 are generally consistent and similar to previous boreholes. The information confirms the previous geologic interpretations¹. The well sites are underlain by 19 to 23 feet of silt to clayey silt. Underlying the silts are fine to medium sands with occasional gravel, which extend to depths of about 46 to 48 feet. This sand unit is the principal aquifer at the site. All three boreholes penetrate about half a foot into a silty clay or clayey silt underlying the aquifer.

The hydrogeologic conditions at the site were discussed in our previous report. The aquifer behaves as a leaky semi-confined aquifer recharged by vertical leakage. The aquifer appears to be reasonably continuous in the Lakes area. We have not prepared a discussion of the hydraulic parameters based on the recent pumping tests of the new production wells since the aquifer conditions do not appear to vary significantly between the well sites. Rather, we have concentrated our evaluation on well yield and interference effects.

3.2 Well Yields

Production Well PW-1

Production well PW-1 was tested at a final rate of 150 gpm yielding a specific capacity of 19 gpm/ft of drawdown after 24 hours of pumping. The near steady-state drawdown in the well was about 7.5 feet. The yield of the well is a function of the available drawdown in the well itself, and the interference drawdown caused by other operation of the other wells. We recommend a permanent pump intake setting of 35.5 feet below toc. Assuming a summer water level of about 15 feet below ground level (16.5 feet below toc), and a pumping-water level safety factor of two feet above the pump intake, the available drawdown in this well is about 17 feet.

Pumping the well at a rate of between 150 to 200 gpm should result in a near steady-state drawdown of between 8 and 11 feet. The additional drawdown caused by the operation of the other two wells is estimated to increase the drawdown in the well to between 10 and 13 feet. Therefore, the yield of this well (with the other wells in operation) is estimated at between 150 and 200 gpm. A higher pumping rate may be possible from this well, especially with the other wells turned off.

Production Well PW-2

The pumping water level in well PW-2 had drawdown about 10 feet after five days of pumping at a rate of 100 gpm, but did not stabilize. Based on the behavior during the five day test, we estimate that after 90 days of pumping at a rate of 100 gpm, the drawdown in the well could approach 14 feet. We recommend setting the intake for the permanent

pump at a depth of 36 feet below toc. Based on estimated summer water levels, this would provide about 16 feet of available drawdown, considering a two-foot safety factor above the pump intake.

The interference drawdown in well PW-2 due to the other two wells is estimated to be less than two feet. Therefore, with the other two wells in operation, well PW-2 can support a pumping rate of 100 gpm for about 90 days before the pumping-water level approaches the pump intake. After this time the flow rate may have to be reduced.

Production Well PW-3

The water level in well PW-3 approached a near steady drawdown of 12 feet after 24 hours of pumping at a rate of 150 gpm. Based on the test, we estimate that the drawdown in the well after about 90 days could be about 15 feet. We recommend a pump intake setting of 37 feet below toc. Based on estimated summer water levels, this would provide about 18 feet of available drawdown, considering a two-foot safety factor above the pump intake.

The interference drawdown in PW-3 due to the operation of the other two wells at their recommended pumping rates is estimated to be about 2.5 to 3.0 feet. Therefore, with the other two wells in operation, well PW-3 can support a pumping rate of 150 gpm for at least 90 days before the pumping-water level approaches the pump intake. After this time, the flow rate from the well may have to be reduced.

General Comments

Based on the results of the testing, we estimate that the combined yield of the three wells when operated together will be between 400 and 450 gpm. We believe that this yield can be expected for at least 90 days during low summer groundwater levels. Greater combined yields are possible if groundwater levels are higher than those presented above. Since pumping water levels in wells PW-2 and PW-3 did not stabilize during the testing period, we recommend initially using well PW-1 to top up the lake. Subsequently, well PW-3 and lastly well PW-2 should be operated as needed.

The yields are lower than originally estimated apparently because of the lower efficiency of the new production wells compared to the previously installed dewatering wells. The total capacity of the three wells (400 to 450 gpm) should be sufficient to maintain the lake during the summer period. If additional water is required to top up the lake, a fourth well could be installed.

3.3 Water Quality

A discussion of the water quality sampling of wells PW-1, PW-2, and PW-3 is presented below and the results are provided in Appendix B, along with Sample Integrity Data Sheets and Chain of Custody forms. Samples were analyzed for VOC's (EPA Method 8240) and metals (EPA Method 6010/7740/7421). In addition, prior to the abandonment of dewatering

wells B-8 and B-10, water from these wells were analyzed for semi-volatiles (EPA Method 8270), organochlorine pesticides and PCB's (EPA Method 8080), organophosphorus pesticides (EPA Method 8140), and chlorinated herbicides (EPA Method 8150).

The results of the water quality analyses show that VOC's were not detected in any of the samples. Of the metals, only iron was found in high concentrations. Iron concentrations of 36 mg/L, 40 mg/L, and 38 mg/L were found in samples obtained from PW-1, PW-2, and PW-3, respectively. We expect that as the groundwater is pumped into the lake, oxidation of the iron will result in the precipitation of iron compounds in the lake water. This could result in a slight discoloration of the lake water, especially where there is little dilution within the lake. Additional mixing and circulation of lake water may be required to minimize any aesthetic changes in the lake water. Subsequent runoff into the lake the following winter should flush any discoloration from the lake.

3.4 System Operation, Maintenance and Monitoring

As indicated above, permanent pumps should be installed in each well. We understand that the wells will be completed in below-ground utility vaults. The well casings should therefore be cut down to the appropriate height to be accommodated in the below-ground structures. It should be noted that the intake depths for the permanent pumps given below are based on the current casing stick-up. If the casing is cut down, the length of the casing cut off should be accurately measured and recorded, and the pump intake depth should be adjusted. All pump installations should be capable of being removed periodically for maintenance, and well redevelopment, if necessary.

The permanent pumps should be sized as follows:

Production Well	Capacity (gpm)	Pump Intake Depth (t.o.c.)	Approximate Pumping Lift (ft)
PW-1	200 to 250	35.5	40
PW-2	100	36	40
PW-3	150	37	40

We recommend initially using well PW-1 to top up the lake, and then adding well PW-3 and finally well PW-2 as the water demand increases. Water levels in the lake and in each well, and flow rates/total pumpage should be monitored during the summer on a weekly basis to evaluate system performance.

Following the first year of operation, it is recommended that each wells performance be evaluated based on the available water-level and pumping data.

FIGURES

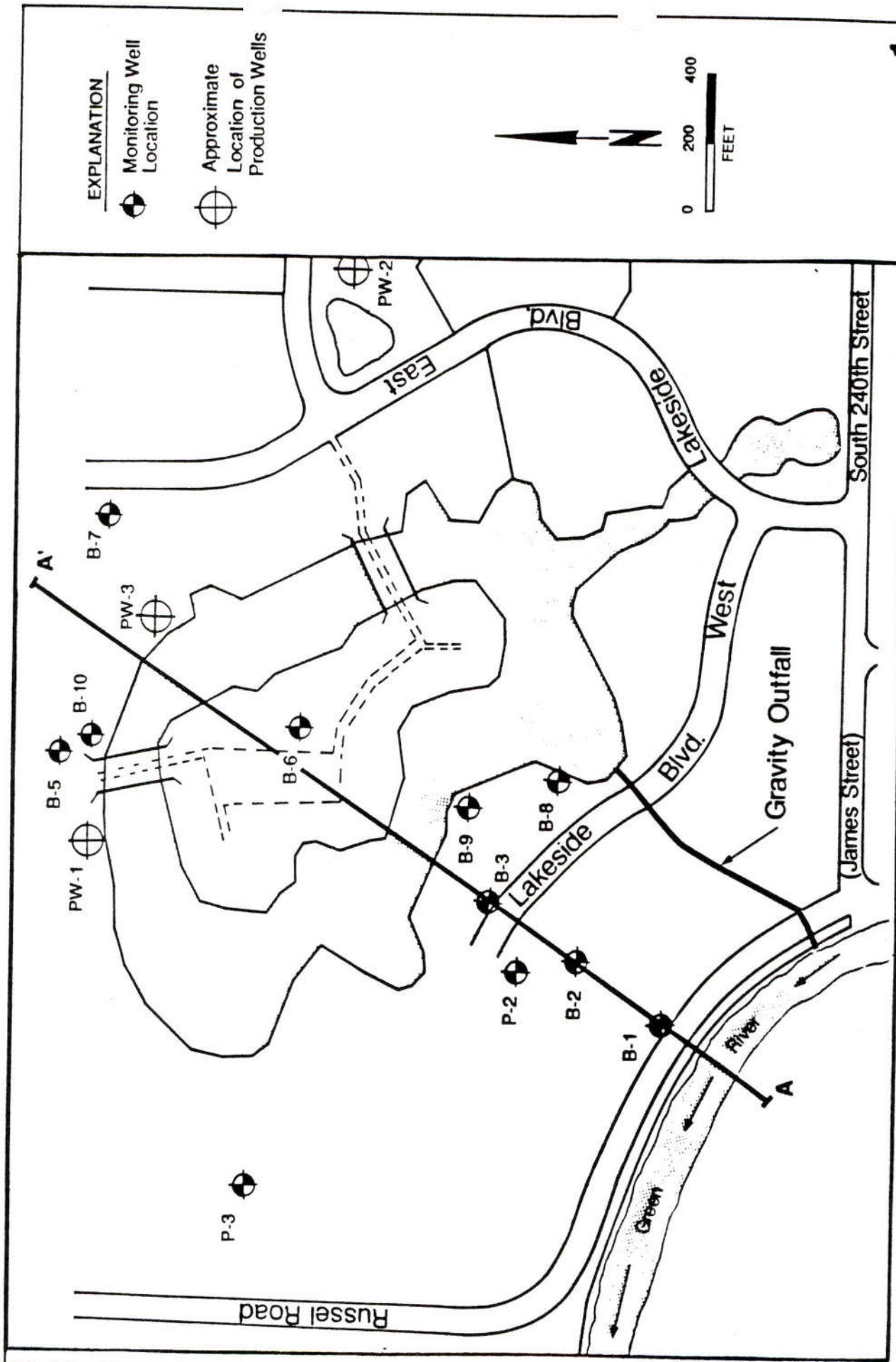


FIGURE 1

SITE PLAN

CENTRON

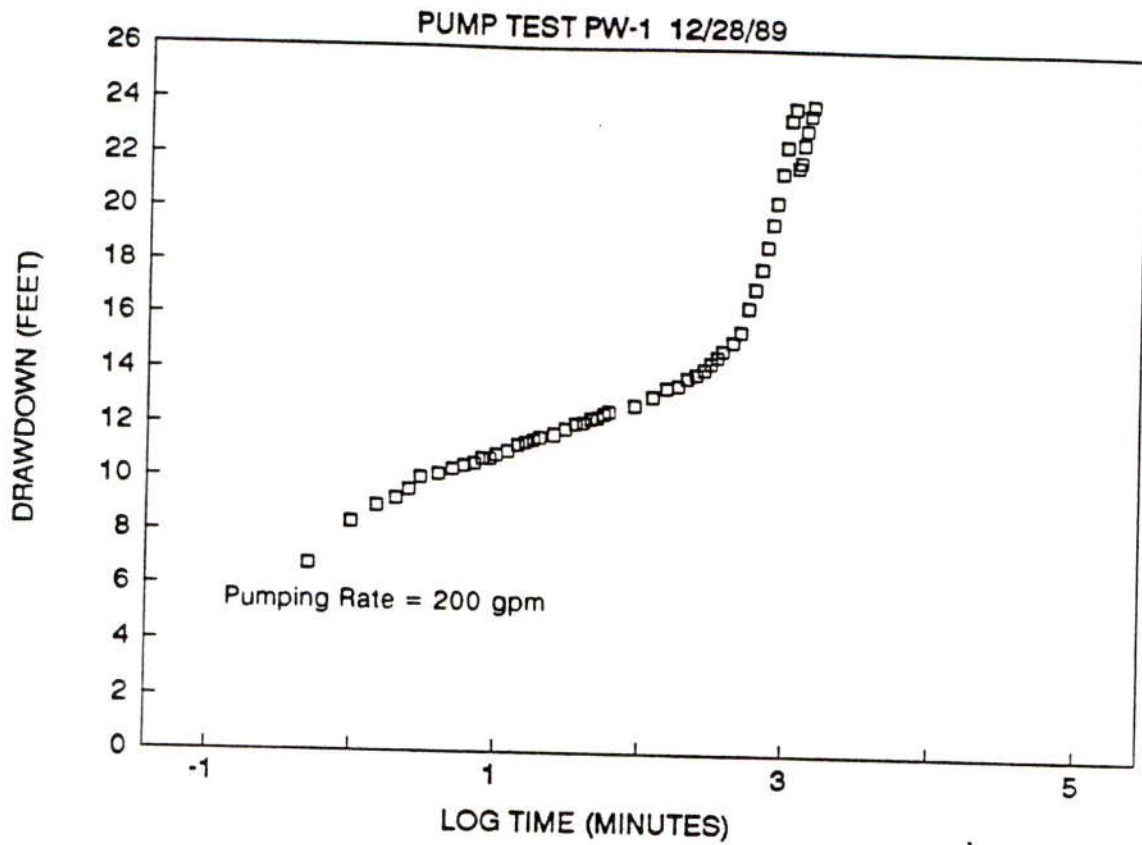


Figure 2A

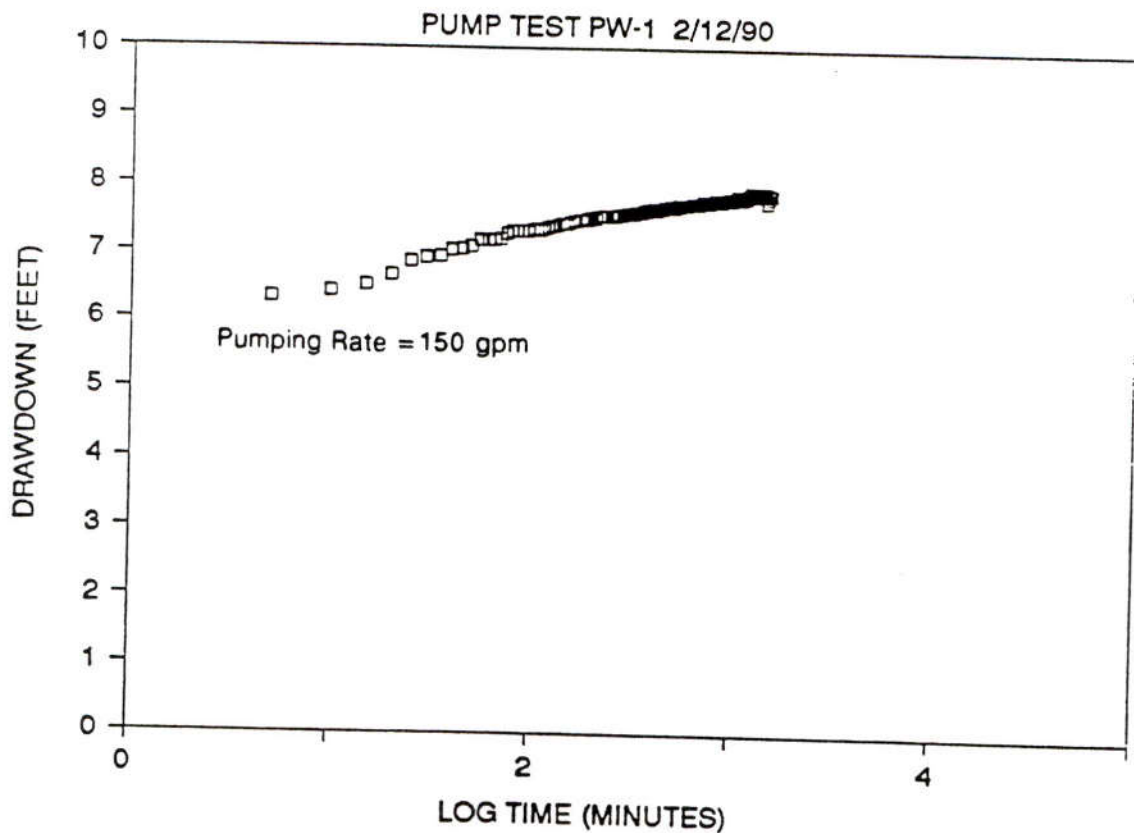


Figure 2B

FIGURE 2
PW-1 PUMP TEST HYDROGRAPHS
CENTRON/LAKE LINING/WA

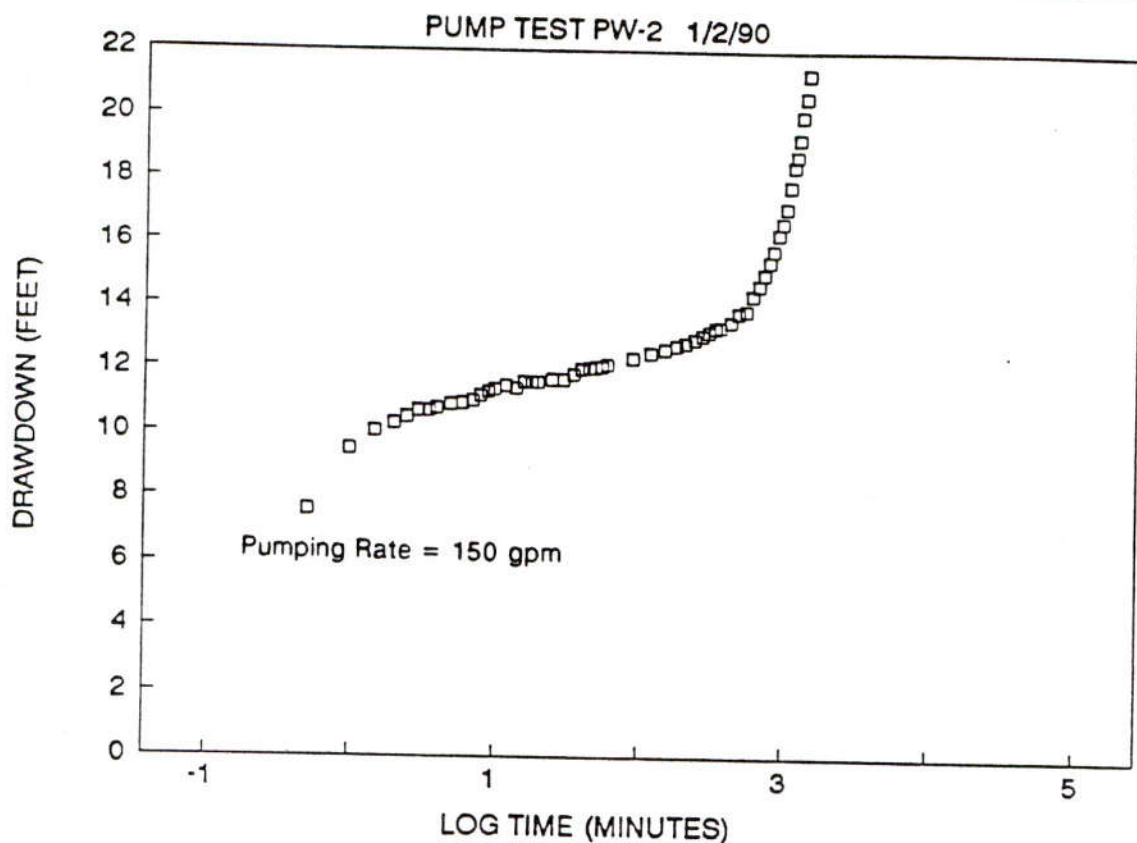


Figure 3A

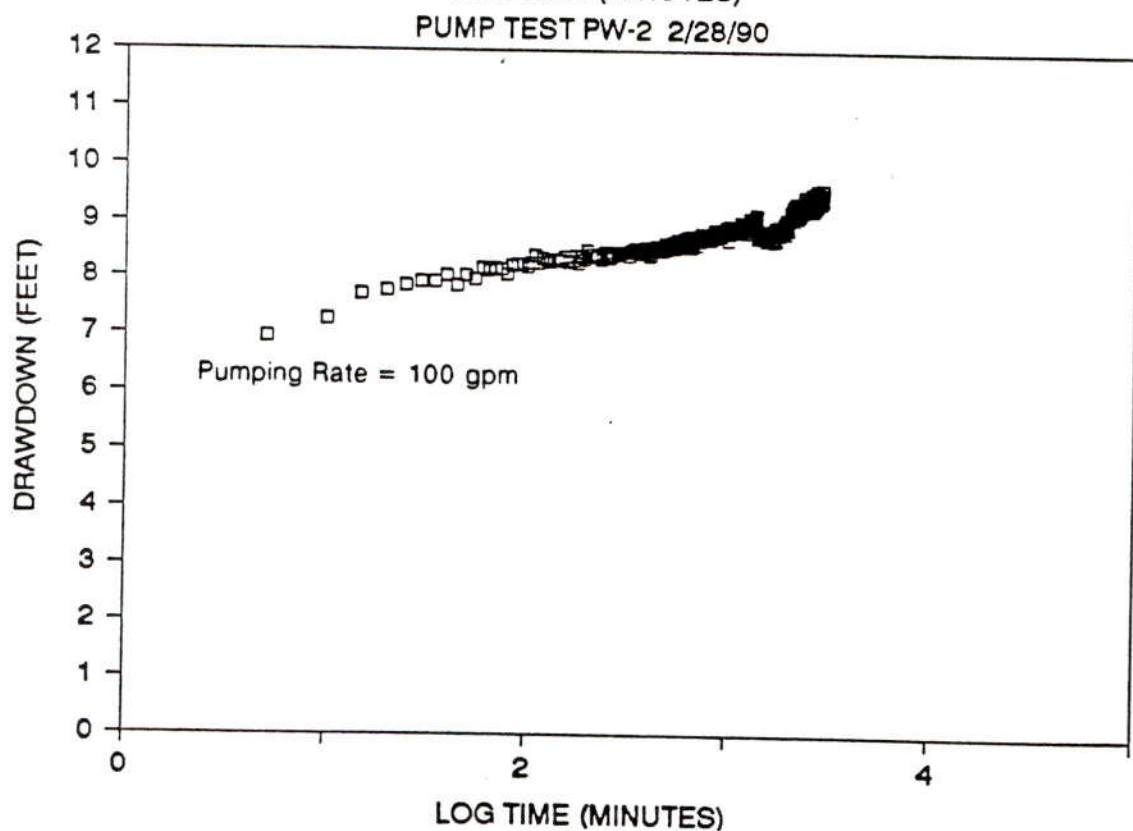


Figure 3B

FIGURE 3
PW-2 PUMP TEST HYDROGRAPHS
CENTRON/LAKE LINING/WA

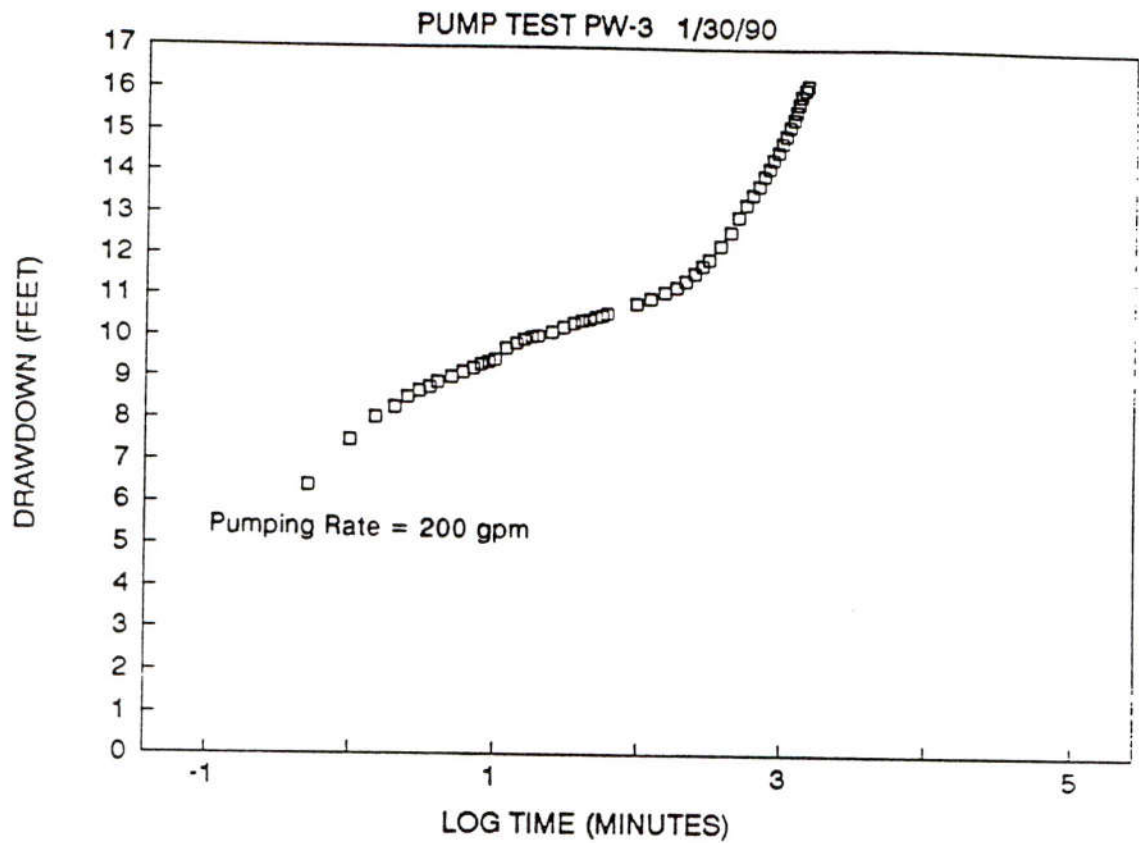


Figure 4A

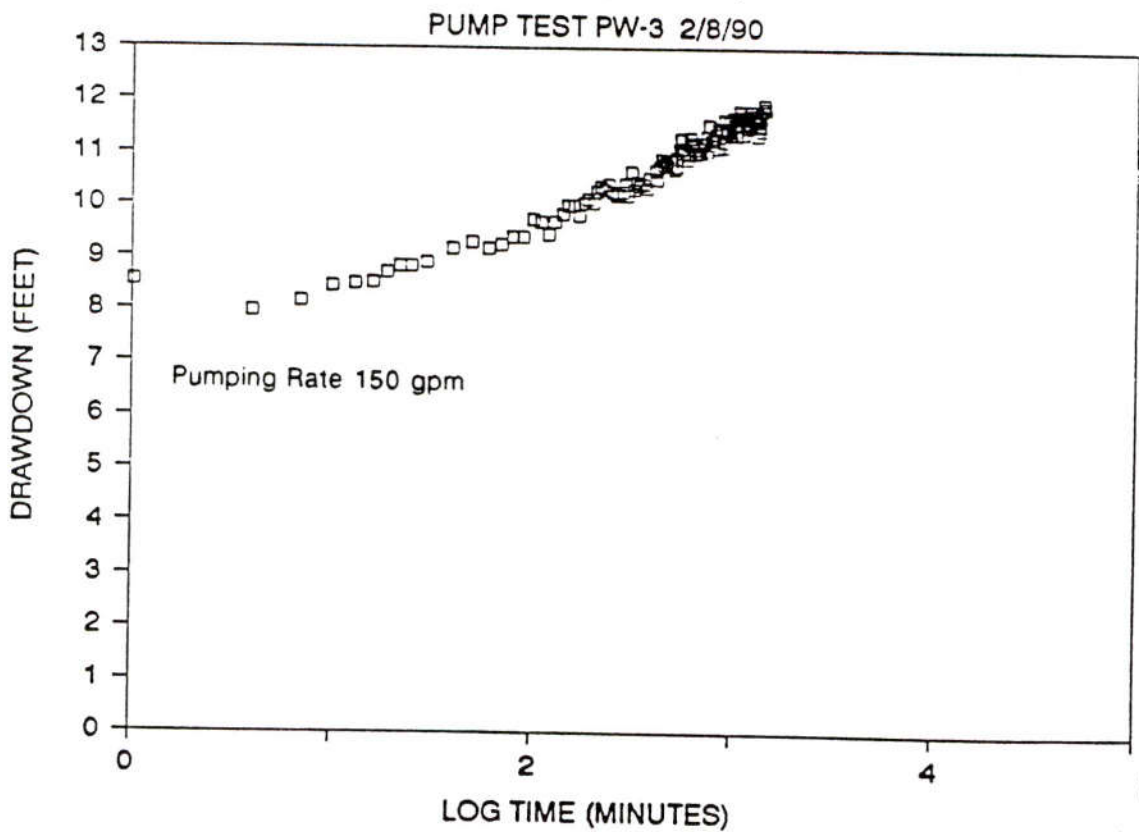


Figure 4B

FIGURE 4
PW-3 PUMP TEST HYDROGRAPHS
CENTRON/LAKE LINING/WA



DO NOT FILM

STATE of WASHINGTON SECRETARY of STATE

I, Ralph Munro, Secretary of State of the State of Washington and custodian of its seal, hereby issue this

CERTIFICATE OF INCORPORATION

to

THE LAKES AT KENT COMMUNITY ORGANIZATION

a Washington Non Profit corporation. Articles of Incorporation were
filed for record in this office on the date indicated below.

Corporation Number: 601 005 139

Date: January 20, 1987



Given under my hand and the seal of the State
of Washington, at Olympia, the State Capitol.

Ralph Munro, Secretary of State

JAN 20 1987

CLERK OF COURT
STATE OF WASHINGTON

ARTICLES OF INCORPORATION
FOR
THE LAKES AT KENT COMMUNITY ORGANIZATION,
A Washington Nonprofit Corporation

The undersigned incorporator in order to incorporate The Lakes At Kent Community Organization as a nonprofit corporation in accordance with Chapter 24.03 of the Revised Code of Washington hereby signs in duplicate these Articles of Incorporation:

I. NAME

The name of this corporation is THE LAKES AT KENT COMMUNITY ORGANIZATION.

II. DURATION

The period of duration of this corporation shall be perpetual.

III. PURPOSES

The purposes for which this corporation is organized are to promote the welfare and interests of the holders of memberships in this corporation. Such holders are owners of property which is within the Entire Proposed Development as defined by the Declaration of Covenants for The Lakes at Kent, as recorded in King County, Washington, and which is made subject to the provisions of those Covenants in accordance with the terms of those Covenants, and which is described as follows:

Those portions of Sections 14 and 15, Township 22 North, Range 4 East, W.M., and of the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows:

BEGINNING at the south quarter corner of said Section 14; thence S 88°59'16" E, along the south line thereof, 1,317.07 feet to the southeast corner of the southwest quarter of the southeast quarter thereof; thence N 00°52'51" E, along the east line

of said subdivision, 1,322.30 feet to the northeast corner thereof; thence N 89°01'49" W, along the north line of said subdivision, 881.05 feet to an intersection with a line parallel with and 436.2 feet easterly, as measured at right angles, from the north-south centerline of said Section 14; thence N 00°52'22" E, along said parallel line, 903.78 feet; thence S 89°01'31" E 881.18 feet to the east line of the northwest quarter of the southeast quarter of said Section 14; thence N 00°52'51" E, along said east line, 418.60 feet to the east-west centerline of said Section 14; thence N 89°04'22" W, along said centerline, 1,317.44 feet to the center of said Section; thence N 00°52'22" E, along the north-south centerline thereof, 587.81 feet, more or less, to the southerly right-of-way margin of S. 228th Street; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83 feet, as measured at right angles, of the south one-half of said David A. Neely Donation Land Claim No. 37, said 287.83 feet being equal to 310 feet as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running N 89°13'00" W, along said south line, 152.63 feet to the easterly bank of the Green River; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14; thence leaving said easterly bank and running S 89°05'32" E, along said south line, 968.18 feet to the POINT OF BEGINNING.

EXCEPT the south 30 feet thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File Nos. 6332263 and 6332264.

Incident thereto it shall be the purpose of this corporation to acquire, own, improve, manage, repair, maintain and operate real and personal property for the benefit of all or some of the holders of its memberships to provide services to or for the benefit of the holders of its memberships and to do such other things as may be necessary and convenient to accomplish all of the foregoing purposes.

IV. MEMBERSHIPS

There shall be no more than 2,915 memberships in this corporation. Memberships in this corporation shall be allocated in accordance with the provisions of the Declaration of Covenants for The Lakes at Kent described above, and the number of memberships in this corporation at any time shall be that number of memberships so allocated. Memberships in this corporation shall be appurtenant to interests in Lots as defined in the Declaration of Covenants for The Lakes at Kent as herein provided. The holders of (a) the fee title of each Lot or portions thereof, which is not subject to a recorded contract for purchase and sale of the Lot or portions thereof and (b) the vendee's interest under a recorded contract for purchase and sale of the Lot or portions thereof shall, as a group, hold the memberships in the corporation allocated to that Lot unless the Lot or any portion of the Lot has been subjected to the provisions of RCW 64.32 of the Horizontal Property Regimes Act, as amended, or to similar subsequent legislation creating condominium ownership. If any Lot or any portion of a Lot has been subjected to the provisions of RCW 64.32, then the memberships which would otherwise be held by the fee title holders or vendees of the apartments, shall be held as common property of the condominium and the rights and privileges of membership shall be exercised by the officers of the association of apartment owners for such association. Memberships shall be appurtenant to and not severable from such fee ownership, vendee's interest or common property of a condominium and the memberships appurtenant to fee title or vendee's interests or to common condominium property shall transfer with such interests without further action on the part of the corporation or the holders of the memberships. Memberships shall stand in the name or names of the persons or parties who have such interests from time to time as they may appear in the public record.

V. DUES, CHARGES AND ASSESSMENTS

Each membership shall pay to the corporation such dues, charges and assessments as shall be determined by the directors from time to time to meet the corporation's obligations of maintenance and improvements of properties owned by it, to provide the other services performed for its memberships and to provide for the proper operation of the corporation. Dues, charges and assessments against all the memberships need not be equal provided that the amount of dues, charges and assessments made against memberships, the holders of which shall have the right to use the same facilities and enjoy the same services of the corporation, shall be equal.

VI. REGISTERED OFFICE AND AGENT

The address of the initial registered office of the corporation is 3025 - 112th Avenue N.E., C-90001, Bellevue, Washington, 98009, and the name of the initial registered agent of this corporation at such address is Centron Properties Corporation, a Washington corporation.

VII. DIRECTORS

The initial board of directors shall be constituted of two directors. The names and addresses of the persons who are to serve as the initial directors are:

Darrell F. Fischer	3025 - 112th Avenue N.E., C-90001 Bellevue, Washington 98009
Michael H. Brien	3025 - 112th Avenue N.E., C-90001 Bellevue, Washington 98009

The members of the initial board of directors shall serve for an initial term ending on the last day of the month during which residential dwelling structures have been completed on Lots, as defined in Article IV, to which Lots 75% of the memberships in this corporation are appurtenant or until December 31, 1990, whichever date first occurs. Any vacancy

occurring in the initial board of directors, regardless of the cause therefor, shall be filled by the action of the remaining directors on the board. Upon the expiration of the initial term of the initial board of directors, the number of directors shall be increased to six, each of whom shall then be elected. Two of the directors shall be elected for a term of one year, two of the directors shall be elected for a term of two years and two of the directors shall be elected for a term of three years. The term of such directors shall be extended to the day of the month on which the next annual meeting of the membership is held after the expiration of the stated term. Thereafter, at the expiration of the term of each of such directors, two directors shall be elected for a term of three years to fill the vacancy. In any event, each director shall serve until a successor is elected at an annual meeting of the membership and qualified.

VIII. QUALIFICATION OF DIRECTORS

After the initial term of directors ends, no person shall be qualified to be elected as director of this corporation or to continue to hold office as director of this corporation unless such person holds a membership in this corporation, except that the employee of a corporation which holds a membership or is a partner of a partnership which holds a membership, the employee of a partnership which holds a membership, and the owner of an apartment in a condominium the common property of which includes a membership, shall be qualified to serve as director of this corporation. This Article shall not be amended without the unanimous consent of all memberships entitled to vote.

IX. INCORPORATION

The name and address of the incorporator is Centron Properties Corporation, 3025 - 112th Avenue N.E., C-90001, Bellevue, Washington, 98009.

X. DISSOLUTION

In the event of dissolution of the corporation, the net assets of the corporation shall be distributed among persons and parties holding its memberships in proportion to the number of memberships held by them.

XI. RESERVES

As determined by its directors, this corporation may establish and maintain reasonable reserves for maintenance and replacement of its property.

XII. INDEMNIFICATION OF OFFICERS AND DIRECTORS

To the full extent permitted by law each officer and director of this corporation shall be indemnified by the corporation from and on account of any liability for acts or omissions occurring during the course of business or activities undertaken on or behalf of the corporation. This indemnification shall include indemnification against all costs and expenses, including attorneys' fees, litigation costs, civil penalties, fines and other charges incurred incident thereto. However, this indemnification shall not apply in any action by or on behalf of the corporation against a director in which action the director has been adjudged guilty of any breach of duty toward the corporation. To the extent that it is necessary for the directors to implement this indemnification, at the request of an officer or director, the directors shall take such action as is appropriate and allowable to implement this indemnification.

DATED: July 19, 1987.

CENTRON PROPERTIES CORPORATION

By [Signature]

James W. Summers, Chairman

*Legal
Influence*

THE LAKES AT KENT COMMUNITY ORGANIZATION
DIRECTOR'S CONSENT TO CORPORATE ACTION

March 29, 1988

The undersigned, being the remaining director of The Lakes Community Organization, hereby consents and agrees to the following corporate action:

1. The resignation of Michael H. Brien as director and president of this corporation was and is hereby accepted effective March 10, 1988.

2. Patrick J. Welton is hereby appointed to fill the vacancies created by such resignation and shall be an initial director of the corporation and the corporate president. He shall act until his term has expired as provided in the corporate bylaws.

DATED: March 29, 1988.

DIRECTOR:

Darrell F. Fischer
Darrell F. Fischer

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BYLAWS
of
THE LAKES AT KENT COMMUNITY ORGANIZATION,
a Washington nonprofit corporation

ARTICLE I. OFFICES

This corporation shall have such offices as the board of directors may designate or its business may require from time to time.

ARTICLE II. MEMBERSHIP

Section 1. Annual Meeting. The annual meeting of the membership shall be held on the first Wednesday in the month of July in each year beginning in 1987, at 7:30 p.m. for the purpose of electing directors if any are to be elected and for the transaction of such other business as may come before the meeting. If the day fixed for the annual meeting shall be a legal holiday in the state of Washington, the meeting shall be held on the next succeeding business day. If the annual meeting is not held on the day designated herein, the board of directors shall cause a special meeting of the membership to be held as soon thereafter as may be convenient to elect directors.

Section 2. Special Meetings. Unless otherwise prescribed by statute, special meetings of the membership may be called for any purpose or purposes by the president or by the board of directors and shall be called by the secretary at the written request of any director or the holders of not less than one-tenth of all of the memberships.

Section 3. Place of Meeting. The annual meeting or special meetings of the membership shall be held at such place in Kent, Washington, as the board of directors may from time to time designate.

Section 4. Notice of Meetings. Written notice stating

the place, day and hour of a meeting of the membership and, in case of a special meeting of the membership the purpose or purposes for which the meeting is called, shall be delivered to the holder of each membership entitled to vote at such meeting not less than ten (10) days and not more than fifty (50) days before the meeting, either personally or by mail, by the secretary or by the person or persons authorized to call meetings of membership. If written notice is placed in the United States mail, postage prepaid, addressed to the holder of a membership at the holder's address as it appears in the records of the corporation, notice shall be deemed to have been delivered to the holder of the membership.

Section 5. Quorum. The presence in person or by proxy of holders of one-tenth of the memberships shall constitute a quorum at a meeting of the membership. If a quorum is present, a majority affirmative vote of the number of memberships present and entitled to vote shall be the act of the membership unless the vote of a greater number or voting by classes is required by law, the Articles of Incorporation or these Bylaws.

Section 6. Method of Voting. The holder of a membership entitled to vote may vote in person or by mail or by proxy. No right to cumulate votes at the election of directors shall exist. Each membership shall have one vote on each matter submitted to a vote at a meeting of membership as is provided for in the Articles of Incorporation.

Section 7. Voting by Certain Membership. The votes of memberships which are held by a corporation, domestic or foreign, may be voted by such officer, agent or proxy as the bylaws of such corporation may prescribe, or in the absence of such provision, as the board of directors of such corporation may determine. A certified copy of a resolution adopted by such directors shall be conclusive as to their action.

The votes of memberships which are held by a partnership

may be voted by any partner.

The votes of memberships which are held by administrators, executors, guardians or conservators may be voted by them, either in person or by proxy, without a transfer of such memberships into their names. The votes of memberships which are held by trustees may be voted by them either in person or by proxy, but no trustee shall be entitled to vote memberships held by him without a transfer of such memberships into his name.

The votes of memberships which are held by receivers may be voted by such receivers, and memberships under the control of a receiver may be voted by the receiver without the transfer thereof into his name if authority to do so is contained in an appropriate order of the court by which such receiver was appointed.

Section 8. Informal Action by Holders of Memberships or Directors. Any action required to be taken at a meeting of the membership or directors or any other action which may be taken at a meeting of the membership or directors may be taken without a meeting if a consent in writing setting forth the action so taken shall be signed by holders of all the memberships or directors entitled to vote with respect to the subject matter thereof.

ARTICLE III. BOARD OF DIRECTORS

Section 1. General Powers. The business and affairs of the corporation shall be managed by its board of directors.

Section 2. Initial Directors. The initial number of directors of this corporation shall be two. The members of the initial board of directors shall serve for an initial term ending on the last day of the month during which residential dwelling structures have been completed on Lots, as defined in Article IV of the Articles of Incorporation, to which Lots 75% of the memberships in this corporation are appurtenant or until

December 31, 1990, whichever date first occurs. Any vacancy occurring in the initial board of directors, regardless of the cause therefor, shall be filled by the action of the remaining directors on the board. Upon the expiration of the initial term of the initial board of directors, the number of directors shall be increased to six, each of whom shall then be elected. Two of the directors shall be elected for a term of one year, two of the directors shall be elected for a term of two years and two of the directors shall be elected for a term of three years. The term of such directors shall be extended to the day of the month on which the next annual meeting of the membership is held after the expiration of the stated term. Thereafter, at the expiration of the term of each of such directors, two directors shall be elected for a term of three years to fill the vacancy. In any event, each director shall serve until a successor is elected at an annual meeting of the membership and qualified. After the expiration of the term of the initial directors, the number of directors may be increased or decreased consistent with statutory requirements and subject to the provisions of the Articles of Incorporation by amendment to these Bylaws.

Section 3. Qualifications of Directors. After the initial term of directors ends, no person shall be qualified to be elected as director of this corporation or to continue to hold office as director of this corporation unless such person holds a membership in this corporation, except that the employee of a corporation which holds a membership or is a partner of a partnership which holds a membership, the employee of a partnership which holds a membership, and the owner of an apartment in a condominium the common property of which includes a membership, shall be qualified to serve as director of this corporation. This Article shall not be amended without the unanimous consent of all memberships entitled to vote.

Section 4. Election. A person receiving the most votes at an election of directors shall be elected regardless whether such person receives a majority. If more than one director is to be elected at a meeting then each director shall be elected separately so that, for example, the first vacancy shall be filled by election before the nominations are closed and the election is held for the second vacancy. Nominations shall be made separately for each vacancy, may be made by committee appointed by the president and may be made from the floor.

Section 5. Regular Meetings. Without other notice than this bylaw, a regular meeting of the board of directors shall be held immediately after and at the same place as the annual meeting of the membership. The board of directors may provide by resolution the time and place, within the state of Washington as the place for holding any other regular meetings of the board of directors or committees called by them. In addition the president or any director may call a special meeting of the board of directors.

Section 6. Notice. Written notice of special meetings of the board of directors stating the time and place thereof shall be given at least two (2) days prior to the date set for such meeting by the person authorized to call such meeting or the secretary of the corporation either by personal delivery to each director or by mail addressed to the business address of each director or by telegram. If mailed, the notice shall be deemed to be given when deposited in the United States mail, postage prepaid, so addressed to the director. If notice is given by telegram, the notice shall be deemed given when the telegram is delivered to the telegraph company for transmission. If no place for such meeting is designated in the notice thereof, the meeting shall be held at the registered office of the corporation. Any director may waive notice of any meeting at any time. The attendance of a director at a meeting shall

constitute a waiver of notice of the meeting except where a director attends a meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the board of directors need be specified in the notice or waiver of notice of such meeting.

Section 7. Quorum. A majority of the number of directors fixed by these Bylaws shall constitute a quorum for the transaction of any business at any meeting of directors.

Section 8. Manner of Acting. The act of the majority of the directors present at a meeting or adjourned meeting at which a quorum is present shall be the act of the board of directors unless the act of a greater number is required by the Articles of Incorporation or these Bylaws.

Section 9. Removal. At a special meeting of the membership called for that purpose, any one or more of the board of directors may be removed from office with or without cause by a vote of the majority of all memberships. Except until the initial term of the directors has expired if any one or more directors is so removed, new directors may be elected at this same meeting.

Section 10. Vacancies. Any vacancy occurring in the board of directors, including a vacancy occurring by removal during the initial term of directors, may be filled by the affirmative vote of a majority of the remaining directors though less than a quorum of the board of directors. A director elected to fill a vacancy shall be elected for the unexpired term of his predecessor in office. Any directorship to be filled by reason of an increase in the number of directors shall be filled by the board of directors for a term of office continuing only until the next election of directors by the membership.

ARTICLE IV. OFFICERS

Section 1. Number. The officers of the corporation shall be a president, one or more vice presidents, a secretary and a treasurer, each of whom shall be elected by the board of directors. Such other officers and assistant officers as may be deemed necessary or appropriate may be elected or appointed by the board of directors. Any two or more offices may be held by the same person except the offices of president and secretary.

Section 2. Election and Term of Office. The officers of the corporation to be elected by the board of directors may be elected for such term as the board may deem advisable not to exceed three years. Officers of the corporation shall be elected at the first meeting of directors following the expiration of the term of office. Each officer shall hold office until his successor shall have been duly elected and qualified regardless of his term of office, except in the event of his prior death or resignation or his removal in the manner hereinafter provided.

Section 3. Removal. Any officer or agent elected or appointed by the board of directors may be removed by the board of directors whenever in its judgment the best interests of the corporation would be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the person so removed. Election or appointment of an officer or agent shall not of itself create contract rights or rights to compensation.

Section 4. Vacancies. A vacancy in any office because of death, resignation, removal, disqualification or otherwise, may be filled by the board of directors for the unexpired portion of the term.

ARTICLE V. CONTRACTS, LOANS, CHECKS DEPOSITS

Section 1. Contracts. The board of directors may authorize any officer or officers, agent or agents, to enter into

any contract or execute and deliver any instruments in the name of and on behalf of the corporation, and that authority may be general or confined to specific instances. A director or officer of the corporation shall not be disqualified by his office from dealing or contracting with the corporation either as a vendor, purchaser, creditor, debtor or otherwise. The fact that any director or officer, or any firm of which any director of the corporation is a member, officer or director, is in any way interested in any transaction or contract shall not make the transaction or contract void or voidable, or require the director or officer of the corporation to account to the corporation for any profits therefrom if the transaction or contract is or shall be authorized, ratified or approved by vote of a majority of a quorum of the board of directors excluding the interested director.

Section 2. Loans. No loans shall be contracted on behalf of the corporation and no evidences of indebtedness shall be issued in its name unless authorized by a resolution of the board of directors. That authority may be general or confined to specific instances. No loans shall be made by the corporation to holders of its membership, officers or directors.

Section 3. Checks, Drafts, Deposits, etc. All checks, drafts or other orders for the payment of money, notes or other evidences of indebtedness issued in the name of the corporation shall be signed by the officer or officers, agent or agents of the corporation and in the manner as shall from time to time be determined by resolution of the board of directors. All funds of the corporation not otherwise employed shall be deposited from time to time to the credit of the corporation in the banks, trust companies or other depositories as the board of directors may select.

ARTICLE VI. WAIVER OF NOTICE

Whenever any notice is required to be given to the holder

of any membership or director of the corporation under the provisions of these Bylaws, the Articles of Incorporation or law, a waiver thereof in writing, signed by the person or persons entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of notice.

ARTICLE VII. AMENDMENTS

These Bylaws may be altered, amended, or repealed and new bylaws may be adopted by the affirmative vote of a majority of the board of directors at a meeting called for that purpose.

The foregoing was adopted as the Bylaws of The Lakes At Kent Community Organization at the first meeting of directors held on January 26, 1987.

Darrell F. Fischer
Darrell F. Fischer, Secretary

ATTEST:

Michael H. Brien
Michael H. Brien, Chairman

DO NOT FILM

WHEN RECORDED, RETURN TO:

Peter V. Gulick
 200 Cascade Building
 855 - 106th Avenue N.E.
 Bellevue, WA 98004

FEB 17 02:44 1987

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DECLARATION OF COVENANTS
 FOR THE LAKES AT KENT

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CENTRON PROPERTIES CORPORATION, a Washington corporation, which acquired title as Arrow Development Corporation (herein referred to as Developer), is the owner of the real property situate in King County, Washington, which is encompassed by the plat of The Lakes at Kent, Division No. 1, as recorded in Volume 136 of Plats, pages 41 to 45, inclusive, records of King County, Washington, except for a portion thereof which is owned by SCHNEIDER HOMES, INC., a Washington corporation (herein called Schneider). Developer and Schneider desire to establish a plan of subdivision for the property encompassed by the Plat and for additional real property herein described and owned by Developer.

THEREFORE, Developer and Schneider do hereby declare and establish the following restrictions, covenants and easement appurtenant in order to implement the plan of private subdivision:

Section 1. Property Subject to Covenants. The real property which is now subjected to the provisions of these covenants is the real property encompassed by the plat of The Lakes at Kent, Division No. 1, as described above.

Section 2. Definitions. As used in this instrument:

(a) The word "Plat" refers to the plat of The Lakes at Kent, Division No. 1, described above and any other plat or plats, including short plats, covering all of the real property which may hereafter be made subject to the provisions

of this instrument by a written instrument signed by the Declarant, or its assignee, in accordance with the provisions of Section 10 below.

(b) The word "Lot" refers to a lot shown on any Plat defined hereby, but shall not include any parcel designated as a "Tract" on a Plat. "Lot" shall include any parcel of land which is separately subjected to this instrument without having been subdivided into two or more parcels by a plat recorded subsequent to recording this instrument.

(c) The words "Entire Proposed Development" refer to the following described real property situate in King County, Washington:

Those portions of Sections 14 and 15, Township 22 North, Range 4 East, W.M., and of the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows:

BEGINNING at the south quarter corner of said Section 14; thence S 88°59'16" E, along the south line thereof, 1,317.07 feet to the southeast corner of the southwest quarter of the southeast quarter thereof; thence N 00°52'51" E, along the east line of said subdivision, 1,322.30 feet to the northeast corner thereof; thence N 89°01'49" W, along the north line of said subdivision, 881.05 feet to an intersection with a line parallel with and 436.2 feet easterly, as measured at right angles, from the north-south centerline of said Section 14; thence N 00°52'22" E, along said parallel line, 903.78 feet; thence S 89°01'31" E 881.18 feet to the east line of the northwest quarter of the southeast quarter of said Section 14; thence N 00°52'51" E, along said east line, 418.60 feet to the east-west centerline of said Section 14; thence N 89°04'22" W, along said centerline, 1,317.44 feet to the center of said Section; thence N 00°52'22" E, along the north-south centerline thereof, 587.81 feet, more or less, to the southerly right-of-way margin of S. 228th Street; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83 feet, as

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measured at right angles, of the south one-half of said David A. Neely Donation Land Claim No. 37, said 287.83 feet being equal to 310 feet as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running N 89°13'00" W, along said south line, 152.63 feet to the easterly bank of the Green River; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14; thence leaving said easterly bank and running S 89°05'32" E, along said south line, 968.18 feet to the POINT OF BEGINNING.

EXCEPT the south 30 feet thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File Nos. 6332263 and 6332264.

The Entire Proposed Development includes the real property encompassed by the plat of The Lakes at Kent, Division No. 1.

(d) The words "Community Organization" refer to The Lakes at Kent Community Organization, a nonprofit corporation formed for the purpose of operating and maintaining certain properties which are within the Entire Proposed Development and which may be conveyed by the Developer to the Community Organization from time to time and providing other services which benefit the owners of properties within the Entire Proposed Development. Initially the properties to be conveyed to the Community Organization include Tracts "L-1" and "L-2", for the lake system, and Tract "A", for entry sign identification, of the Plat.

Section 3. The Lake. As a part of the plan of private subdivision of the Entire Proposed Development, Developer has constructed an artificial lake system with appurtenant drains, culverts, pumps, wells and other mechanical systems for the operation of the lake and its control and intends to construct additions thereto. The Developer shall cause the property upon which the lake may now or hereafter be located to be conveyed

from time to time to the Community Organization. When the Developer causes such property to be identified in the conveyance as a part of the lake system, then such property shall be subject to the following covenants which shall be binding upon and inure to the benefit of the owners of real property which may now or hereafter be subjected to this instrument.

(a) The property so conveyed and identified shall be used for no other purpose than to maintain, replace, reconstruct and operate a lake system for the benefit of the real properties now and hereafter made subject to this instrument.

(b) The property so conveyed and identified shall be subject to the rights of the City of Kent to own, operate, control and maintain the outlet structure of the lake system into the Green River, the right of the City of Kent to regulate the water level in the lake system, the right to control the operation of all facilities which regulate the flow of water into and out of the lake system, including the pumps, wells, fountains, dams, channels, pipes, and outfall system, and thereby to control the level of the lake which may include the right to make sudden changes in the level of the lake, and the right of the City of Kent to use any of the property of the Community Organization for access and to exercise these rights. The rights referred to are established by these covenants, as evidenced on the face of the plat, for the deposit, transportation, storage and outletting of surface and storm water into, through and out of the lake system. Additional rights and obligations relating to the ownership, operation, control and maintenance of the lake system may be established by agreements with the City of Kent. These agreements may be made hereafter by the Developer on behalf of the Community Organization as the City of Kent deems necessary. The Developer reserves the right to make such additional agreements and to establish the rights and obligations thereunder as covenants

to run with those portions of the Entire Development which are now or hereafter conveyed to the Community Organization and otherwise constitute a part of the lake system.

(c) Surface and storm water which may accumulate on all or any part of the real property which is now or hereafter made subject to this instrument or which is owned by the Developer in the Entire Proposed Development and which is in the process of development, any surface or storm water which may accumulate on any and all properties now or hereafter transferred by the Developer incident to development to the City of Kent, including rights of way and easements, and any surface or storm water which may now or hereafter be accumulated on or in any public street or public storm water drainage system may be discharged into the lake system.

(d) The City of Kent shall not be under any obligation to maintain the quality of the water now or hereafter introduced into or retained in the lake system; provided that nothing shall relieve or discharge the City of Kent from or on account of any liability because of the intentional or negligent discharge of any toxic waste into the lake system by any of its agents or employees acting within the scope of their authority or employment. Developer and the Community Organization agree to defend, indemnify, and hold harmless the City of Kent from any and all third-party claims, demands, actions, injuries, losses, damages, costs or liabilities of any kind or amount whatsoever, whether known or unknown, foreseen or unforeseen, fixed or contingent, liquidated or unliquidated, arising by reason of the discharge of any toxic waste, hazardous waste, or other contaminant into the lake system by reason of any proven act or omission of Developer or the Community Organization; provided that this indemnification shall not apply to final judgments against the City of Kent arising out of actual determination by a finder of fact that monetary damages suffered by a third party were actually and

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approximately caused by the intentional tortious acts of the City of Kent, its officers, officials, or agents, or by the negligence solely on the part of the City of Kent, its employees, officials, or agents.

(e) The owners of real property subjected to this instrument, and their respective tenants, guests and invitees may use the surface of the lake and the surrounding banks now or hereafter conveyed to and owned by the Community Organization for recreational purposes. Such use shall be subject to such rules and regulations as may be adopted from time to time by the directors of the Community Organization as such directors deem appropriate in their discretion for the protection of the lake system and appurtenances and the safety and welfare of the persons entitled to such use. Any person or party entitled to use the lake system for recreational purposes shall comply with the rules and regulations so adopted. If any such person or party shall fail to comply with such rules and regulations, then in addition to any other right or remedy which may exist for such failure, the Community Organization may terminate such person's or persons' right to use of the lake system for recreational purposes by appropriate action.

Section 4. Other Properties. The Developer shall have the right but not the obligation to convey to the Community Organization such other property or interests in properties in the Entire Proposed Development as the Developer deems appropriate for the purpose of providing recreation areas, private roadways, storm water drainage, open spaces and other such facilities for the benefit of all or any portion of the Entire Proposed Development, all as may be designated specifically by the Developer in the conveyance.

Section 5. Maintenance Obligations. In consideration of the properties and benefits conferred upon the Community Organization under this instrument and the conveyances which may now or hereafter be made to the Community Organization by

the Developer or its assigns, the Community Organization hereby covenants and agrees that it shall provide the following:

(a) Except to the extent that the City of Kent, or its successor municipal organization, may assume the obligation of operation and maintenance of any of the appurtenances to the lake system, the Community Organization shall maintain in good order and repair and operate the lake system together with all drains, wells, pumps and other appurtenances to the system as may be required by the City of Kent. The duty and obligation to maintain the lake system shall include, without limitation, the installation and construction of any facilities for treatment of water in or discharged from or into the lake system, as such facilities are required by any governmental agency having jurisdiction, and to correct any deficiency or defect in the design of the lake system, and its appurtenances by installation or construction of corrective measures regardless of whether the City of Kent or its successors may have assumed the operation of the part of the lake system involved. All of the cost going shall be at the cost of the Association, and the City of Kent shall have no liability with respect to such costs. Nothing in this instrument shall be construed to impose any such obligation of operation or maintenance upon the City of Kent or its successor.

(b) The Community Organization shall maintain, repair, replace and reconstruct any private road, storm drain system and recreation areas which may be located in any easement or real property conveyed to the Community Organization.

(c) The Community Organization shall maintain, replace and irrigate all landscaping located in the medians of all public roads and along all public sidewalk easements located within the portions of the Entire Proposed Development subject to this instrument. These provisions are subject to the rights of the City of Kent as set forth in Section 12 below.

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hereafter be subjected to this instrument. If the Developer fails to make such allocation with respect to any Lot within 30 days after notice is given to Developer by the Community Organization, then the directors of the Community Organization may make the allocation consistent with the plan herein stated by placing of public record in King County a statement executed by the president and secretary of the Community Organization setting forth the allocation made. If a Lot is fully improved with residential buildings, then the allocation shall be made to that Lot by the Community Organization on the basis of the actual number of living units constructed on the Lot. The total number of memberships allocated to the Lots by the Developer, or by the Community Organization on failure of the Developer to allocate, may be less than the maximum number of memberships permitted hereby. When memberships have been allocated to all Lots which may be subjected to this instrument, the total maximum number of memberships in the Community Organization shall be the total memberships so allocated. The holders of (a) the fee title of each Lot or portions thereof, which is not subject to a recorded contract for purchase and sale of the Lot or portions thereof and (b) the vendee's interest under a recorded contract for purchase and sale of the Lot or portions thereof shall, as a group, hold the memberships in the Community Organization allocated to that Lot unless the Lot or any portion of the Lot has been subjected to condominium ownership under the provisions of RCW 64.32 of the Horizontal Property Regimes Act, as amended, or under similar subsequent legislation creating condominium ownership. If any Lot or any portion of a Lot has been subjected to condominium ownership, then the memberships which would otherwise be held by the fee title holders or vendees of the apartments, shall be held as

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common property of the condominium and the rights and privileges of membership shall be exercised by the officers of the association of apartment owners for such association. Such memberships shall be appurtenant to and not severable from such fee ownership, vendee's interest or common property of a condominium and the memberships appurtenant to fee title or vendee's interests or to common condominium property shall transfer with such interests without further action on the part of the Community Organization or its several members. Memberships shall stand in the name or names of the persons or parties who have such interests from time to time as they may appear in the public record.

Section 8. Lien. In order to provide for the proper operation of the Community Organization, the performance of its obligations of maintenance herein contained and the maintenance and improvement of any property which the Community Organization acquires for the benefit of owners of Lots:

(a) With respect to Lots or portions of a Lot not subjected to condominium ownership, each grantee and vendee of any portion of a Lot, their heirs, successors and assigns shall and do, by the act of accepting a deed or entering into a contract of sale as vendee, jointly and severally agree that they and each of them shall accept and hold membership in of the Community Organization and shall pay to the Community Organization the dues and charges levied according to the Articles of Incorporation and Bylaws of the Community Organization against the holders of memberships in the Community Organization; and

(b) With respect to Lots or portions of a Lot which have been subjected to condominium ownership each person or party who acquires an interest in such Lot or portions of a Lot including the interest in the condominium, their heirs,

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successors and assigns, shall and do, by the act of accepting such interest, jointly and severally agree that the association of apartment owners of the condominium shall hold the appurtenant memberships in the Community Organization as common property and that the dues and charges levied according to the Articles of Incorporation and Bylaws of the Community Organization against such memberships shall be paid as a common maintenance expense of the condominium.

In the event that any such dues or charges remain unpaid to the Community Organization for a period of sixty days after the due date, then the Community Organization may place a written notice of public record in King County, Washington, that the Community Organization claims a lien against the Lot or portion thereof to which the memberships are appurtenant for the amount of delinquent dues and charges together with interest at the rate of twelve percent per annum from the date due until paid and attorney's fees as herein provided. From and after recording such notice, and not prior to such recording, the Lot or portion thereof to which the memberships are appurtenant shall be subject to a lien to the Community Organization as security for all unpaid dues and charges in the amount designated therein with interest and attorneys' fees, together with all future unpaid dues and charges accrued until the lien arising because of the notice is released by the Community Organization. The enforcement of the lien claimed against any property which is subject to condominium ownership shall be only against the interest of the apartment owners in proportion to their respective interests in the common areas and facilities. The lien herein granted to the Community Organization shall be subordinate to the lien of any bona fide mortgage or deed of trust given for value recorded prior to the recording of the notice of claim of lien. A release of a lien shall only

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release the lien arising because of the notice but not rights under this Section to file a subsequent notice of claim of lien for subsequent delinquencies after a notice is released. Such lien may be foreclosed in the manner of a mortgage of real property and in such foreclosure action the Community Organization shall recover a reasonable sum as attorneys' fees therein and the reasonable and necessary costs of searching and abstracting the public record. Notwithstanding any provisions hereof appearing to the contrary, the sale or transfer of title to a Lot or portion thereof pursuant to a mortgage foreclosure or any proceeding in lieu thereof, shall extinguish the lien against the Lot or portion thereof created hereby for any unpaid dues and charges which became due prior to such sale or transfer; provided that no sale or transfer shall relieve such Lot or portion thereof from a lien for dues and charges thereafter becoming due and provided further that "mortgage" as used in this sentence means a mortgage, deed of trust or other security given for a debt which is guaranteed by the Veterans Administration or insured by The Federal Housing Administration as agencies of the United States government. Notwithstanding any provision of this paragraph appearing to the contrary, in the event that the lien shall attach to a Lot or portion thereof subject to condominium ownership, then the lien may be discharged by each apartment owner from such owner's apartment in the condominium by the payment of the amount secured by the lien multiplied by the percentage of interest of the apartment in the appurtenant common areas and facilities.

(c) Nothing contained in Section 8 shall in any way supersede any municipal lien imposed by the City of Kent pursuant to its combined sewerage system enacted pursuant to RCW 35.67.331 relating to water, sewerage, garbage and drainage facilities.

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Section 9. Unequal Dues and Charges. The Community Organization may levy different amounts of dues and charges against its various memberships to reflect variations in the Community Organization's obligation to maintain facilities for the benefit and use of the holders of its various memberships. The allocation of dues and charges by the directors of the Community Organization shall be binding upon all interested parties, provided that dues and charges payable by each membership appurtenant to Lots whose owners and residents have the right to use all of the same facilities shall be equal.

Section 10. Additional Property. Developer shall have the right to subject additional parts of the real property within the Entire Proposed Development described above to the provisions of this instrument from time to time as a part of the plan of subdivision by recording a declaration signed by the Developer expressly setting forth the intent of Developer to subject such part or parts to the provisions hereof. Developer may assign its rights and authority to subject additional parts of the Entire Proposed Development to this instrument but only by a written instrument which contains an express reference to this instrument. Such an assignment shall be made only to parties who shall have acquired a portion or portions of the Entire Proposed Development which have not been subjected to the provisions of this instrument at the time of acquisition. Such assignment shall transfer to the assignee the Developer's rights under this instrument but only insofar as such rights are applicable to the portion or portions of the Entire Proposed Development acquired by the assignee.

Section 11. Amendment. Except as elsewhere provided, the provisions hereof may be amended and changed by the written consent of the holders of not less than sixty (60%) of all of the memberships in the Community Organization. For the purpose

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of amendment consent to an amendment by the holder of a membership shall be binding upon the holder of the membership and any successors thereto for a period of six months after it is given for the purpose of calculating the percentage required for adoption of the consent. Consents required under this Section shall be delivered to the Community Organization which shall tabulate them. The determination by the Community Organization that a sufficient number of consents has been given shall be conclusive, and the amendment shall be effective when a written Notice of Amendment signed and acknowledged by the president and secretary of the Community Organization is recorded in King County, Washington, stating that the requisite consent has been obtained and setting forth the amendment in its entirety.

Section 12. Rights of the City of Kent. In order to assure the proper operation and maintenance of the lake system and irrigation of median and sidewalk landscaping, the City of Kent shall have the right as provided below, but not the obligation, to maintain and operate all or any part of the lake system as elsewhere herein provided for and to irrigate median and sidewalk landscaping, if the Community Organization shall fail to operate and maintain the lake system or irrigate such landscaping and such failure continues for more than 10 days after written notice of the failure is mailed to or served upon the registered agent for the Community Organization. However, no notice shall be required in the event that the City of Kent shall determine that an emergency situation exists in which damage to person or property may result if the situation is not remedied prior to the time required for notice. If the City of Kent shall exercise its rights under this paragraph, then the Community Organization shall on demand reimburse the City of Kent for all reasonable and necessary expenses incurred incident thereto, including all legal costs and attorneys' fees and

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reasonable administrative costs, and the City of Kent shall have the right and is hereby given the power and authority acting in the name of the Community Organization to exercise and enforce on behalf of the Community Organization at its cost its rights to assess dues and charges for such costs and to enforce its lien right for such assessments, dues and charges as herein provided. This paragraph may not be amended without the consent of the City of Kent. If the Developer or the Community Organization fails or refuses to perform any lake system maintenance or repairs as requested in writing by the City of Kent, the City, including any agents and officers and employees, are authorized to enter the property owned by either or both the Developer and the Community Organization and undertake to the City's satisfaction any and all needed maintenance and repairs to the lake system, including drains, wells, pumps, and other appurtenances, subject further to the right of the City of Kent to impose materialmans and/or laborers liens and foreclose upon any and all properties owned by Developer or the Community Organization, and/or at the City's option impose charges upon such properties through billed combined sewerage system utility fees and charge to any and all properties which the City of Kent determines to be benefitted in accordance with the ordinances of the City of Kent. The City of Kent shall also be permitted to collect the costs of administration and enforcement through the foregoing lien attachment and collection process as is permitted under RCW Chapter 35.67. The Developer and the Community Organization agree to defend, indemnify and hold harmless the City of Kent for any and all third-party claims, demands, actions, injuries, losses, damages, costs of liabilities of any kind or amount whatsoever, whether known or unknown, foreseen or unforeseen, fixed or contingent, liquidated or unliquidated,

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arising by reason of any actual or alleged defect in design of the lake system; provided that indemnification shall not apply to final judgments against the City of Kent arising out of actual determination by a finder of fact that monetary damages suffered by a third party were actually and approximately caused by the intentional tortious acts of the City of Kent, its officers, officials or agents, or by the negligence solely or on the part of the City of Kent, its employees, officials or agents.

EXECUTED this 11th, day of December, 1986.

CENTRON PROPERTIES CORPORATION

By [Signature]

SCHNEIDER HOMES, INC.

By [Signature]

STATE OF WASHINGTON

COUNTY OF KING

I certify that I know or have satisfactory evidence that [Signature] signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the President of CENTRON PROPERTIES CORPORATION to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: December 11, 1986.



[Signature]
Notary Public

My appointment expires: 12-15-87

5387A/184/R3

STATE OF WASHINGTON
COUNTY OF KING

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I certify that I know or have satisfactory evidence that Geoff E. Schneider signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the President of SCHNEIDER HOMES, INC. to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: November 11, 1986.

Notary Public

My appointment expires: 8-15-87



DO NOT FILM

E 1/2, SW 1/4 W 1/2, SE 1/4, SE 1/4, T. 22 N., R. 4 E., W.M.

THE LAKES SHORT PLAT

DIVISION NO. 2

SEC. 14, TWP. 22 N., RGE. 4 E., W.M.
CITY OF KENT,
KING COUNTY, WASHINGTON

LEGAL DESCRIPTION

That portion of the south half of Section 14, Township 22 North, Range 4 East, W.M., and of the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows:

Commencing at the southeast corner of the southwest quarter of the southeast quarter of said Section 14, from which the south quarter corner of said Section bears $N88^{\circ}59'16''W$ 1317.07 feet; thence $N00^{\circ}52'51''E$, along the east line of said subdivision, 1322.30 feet to the northeast corner thereof; thence $N89^{\circ}01'49''W$, along the north line of said subdivision, 40.00 feet to the west line of a 40 foot strip of land conveyed to the City of Kent by deed filed under King County Rec. No. 8110120004 and the TRUE POINT OF BEGINNING of the herein described property; thence $S00^{\circ}52'51''W$, along said west line, 662.27 feet; thence $N88^{\circ}59'16''W$ 108.00 feet; thence $N01^{\circ}00'44''E$ 20.00 feet; thence $N88^{\circ}59'16''W$ 60.00 feet; thence $N01^{\circ}00'44''E$ 140.00 feet; thence $N88^{\circ}59'16''W$ 178.00 feet; thence $N59^{\circ}53'56''W$ 107.00 feet; thence $S60^{\circ}02'00''W$ 165.73 feet; thence $S29^{\circ}58'00''E$ 45.00 feet; thence $S60^{\circ}02'00''W$ 60.00 feet; thence $S77^{\circ}49'47''W$ 311.76 feet; thence $N23^{\circ}05'00''W$ 21.94 feet; thence $N39^{\circ}15'00''W$ 80.00 feet; thence $N03^{\circ}40'00''E$ 55.50 feet; thence $N06^{\circ}50'00''W$ 56.00 feet; thence $N53^{\circ}03'00''E$ 120.00 feet; thence $N34^{\circ}31'00''W$ 39.00 feet; thence $S83^{\circ}35'00''W$ 171.00 feet; thence $S38^{\circ}46'13''W$ 78.17 feet; thence $S13^{\circ}55'00''E$ 78.75 feet; thence $S00^{\circ}10'00''W$ 45.00 feet; thence $N74^{\circ}00'00''W$ 83.00 feet; thence $N47^{\circ}30'00''W$ 27.00 feet; thence $N06^{\circ}40'00''W$ 55.00 feet; thence $N08^{\circ}00'00''W$ 62.00 feet; thence $N21^{\circ}45'00''W$ 67.00 feet; thence $N55^{\circ}25'00''W$ 63.00 feet; thence $S84^{\circ}00'00''W$ 110.00 feet; thence $N68^{\circ}50'00''W$ 138.50 feet; thence $N05^{\circ}40'00''W$ 34.00 feet; thence $N13^{\circ}25'00''W$ 72.75 feet; thence $N19^{\circ}40'00''E$ 54.00 feet; thence $N07^{\circ}35'00''W$ 33.00 feet; thence $N47^{\circ}30'00''W$ 31.00 feet; thence $N06^{\circ}50'00''W$ 56.50 feet; thence $N44^{\circ}54'00''W$ 51.00 feet; thence $N49^{\circ}00'00''W$ 47.00 feet; thence $N07^{\circ}50'00''E$ 103.00 feet; thence $N23^{\circ}40'00''E$ 51.00 feet; thence $N64^{\circ}00'00''E$ 83.00 feet; thence $N79^{\circ}45'00''E$ 50.00 feet; thence $N72^{\circ}30'00''E$ 40.41 feet; thence $N79^{\circ}55'45''E$ 31.36 feet; thence $N07^{\circ}47'54''W$ 65.44 feet; thence $S89^{\circ}04'02''E$ 727.29 feet to the north-south centerline of said Section 14; thence $N00^{\circ}52'22''E$, along said centerline, 574.00 feet to the southerly line of the Thomas Neely tract, as described in deed under Auditor's File No. 895046; thence $S89^{\circ}01'31''E$, along said southerly line, 436.20 feet; thence $S00^{\circ}52'22''W$, parallel with said north-south centerline, 903.78 feet to the north line of the southwest quarter of the southeast quarter of said section 14; thence $S89^{\circ}01'49''E$, along said north line, 841.05 feet to the TRUE POINT OF BEGINNING.

(Contains 1,607,671 square feet, more or less, or approximately 36.91 acres.)

NOTE: THIS SHORT WAS RECORDED ON JUNE 4, 1987 AS A PART OF CITY OF KENT RESOLUTION NO. SP-86-21 UNDER KING COUNTY REC. NO. 8706041575.

LEGEND

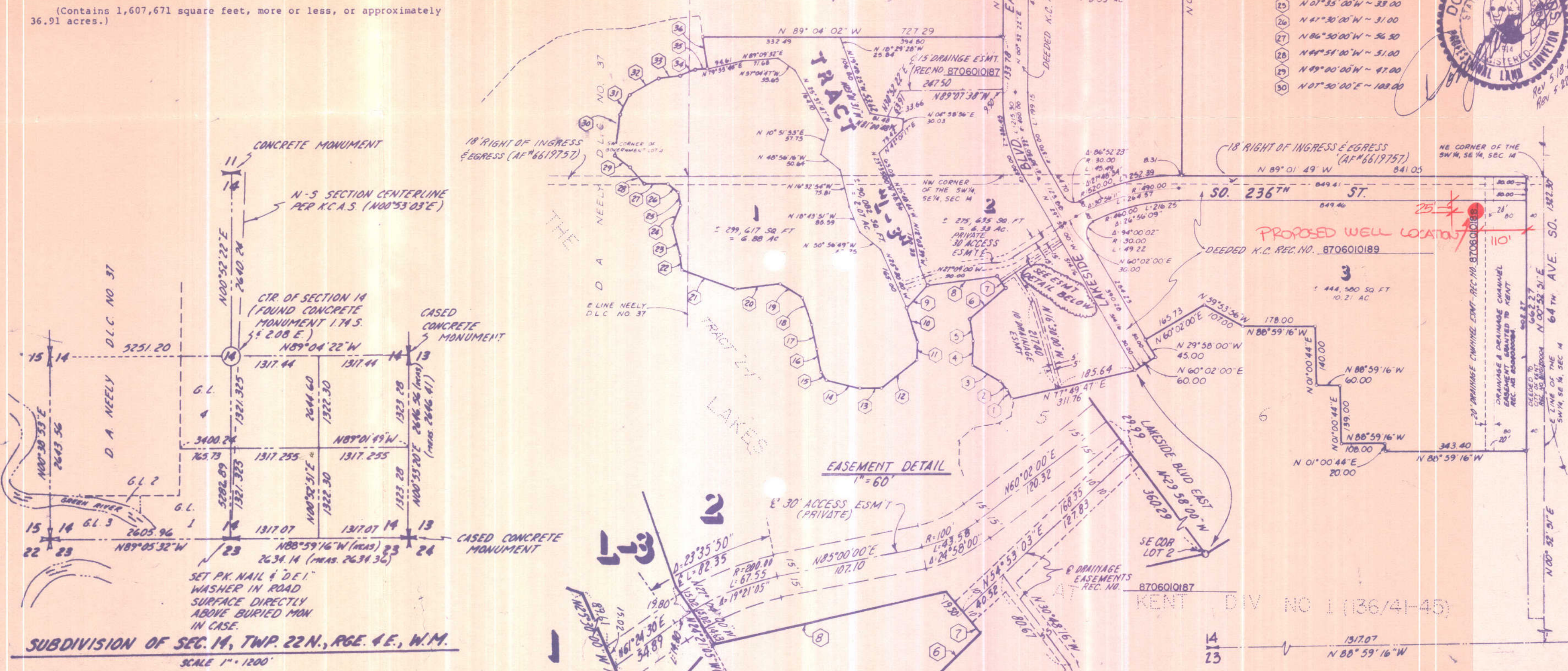
- CASED MONUMENTS TO BE SET WITHIN 90 DAYS OF ROAD ACCEPTANCE BY THE CITY OF KENT.



1"=200'

K.C.A.S.

MERIDIAN



BOUNDARY DATA

1	N 23° 05' 00" W - 21.94	31	N 23° 40' 00" E - 51.00
2	N 39° 50' 00" W - 27.00	32	N 64° 00' 00" E - 83.00
3	N 39° 15' 00" W - 80.00	33	N 78° 45' 00" E - 50.00
4	N 03° 40' 00" E - 55.50	34	N 72° 30' 00" E - 40.41
5	N 06° 50' 00" W - 56.00	35	N 79° 55' 45" E - 31.36
6	N 53° 03' 00" E - 120.00	36	N 07° 47' 54" W - 65.44
7	N 34° 31' 00" W - 39.00		
8	N 83° 35' 00" E - 171.00		
9	N 38° 46' 13" E - 78.17		
10	N 13° 55' 00" W - 78.75		
11	N 00° 10' 00" E - 45.00		
12	N 54° 00' 00" E - 109.00		
13	N 87° 05' 00" E - 54.25		
14	N 74° 00' 00" W - 83.00		
15	N 47° 30' 00" W - 27.00		
16	N 06° 40' 00" W - 55.00		
17	N 08° 00' 00" W - 62.00		
18	N 21° 45' 00" W - 67.00		
19	N 55° 25' 00" W - 63.00		
20	N 84° 00' 00" E - 110.00		
21	N 68° 50' 00" W - 138.50		
22	N 05° 40' 00" W - 34.00		
23	N 13° 25' 00" W - 72.75		
24	N 19° 40' 00" E - 54.00		
25	N 07° 35' 00" W - 33.00		
26	N 47° 30' 00" W - 31.00		
27	N 06° 50' 00" W - 56.50		
28	N 44° 54' 00" W - 51.00		
29	N 49° 00' 00" W - 47.00		
30	N 07° 50' 00" E - 103.00		

CENTRON PROPERTIES, CORP.
BELLEVUE, WASHINGTON

SHORT PLAT

SURVEYOR'S CERTIFICATE
This map correctly represents a survey made by me or under my direction in accordance with the requirements of the SURVEY-RECORDING ACT at the request of

RECORDING CERTIFICATE
Filed for record this day of 19 at M., in book of SURVEYS at page of DODDS ENGINEERS, INC. DIVISION OF RECORDS & ELECTIONS

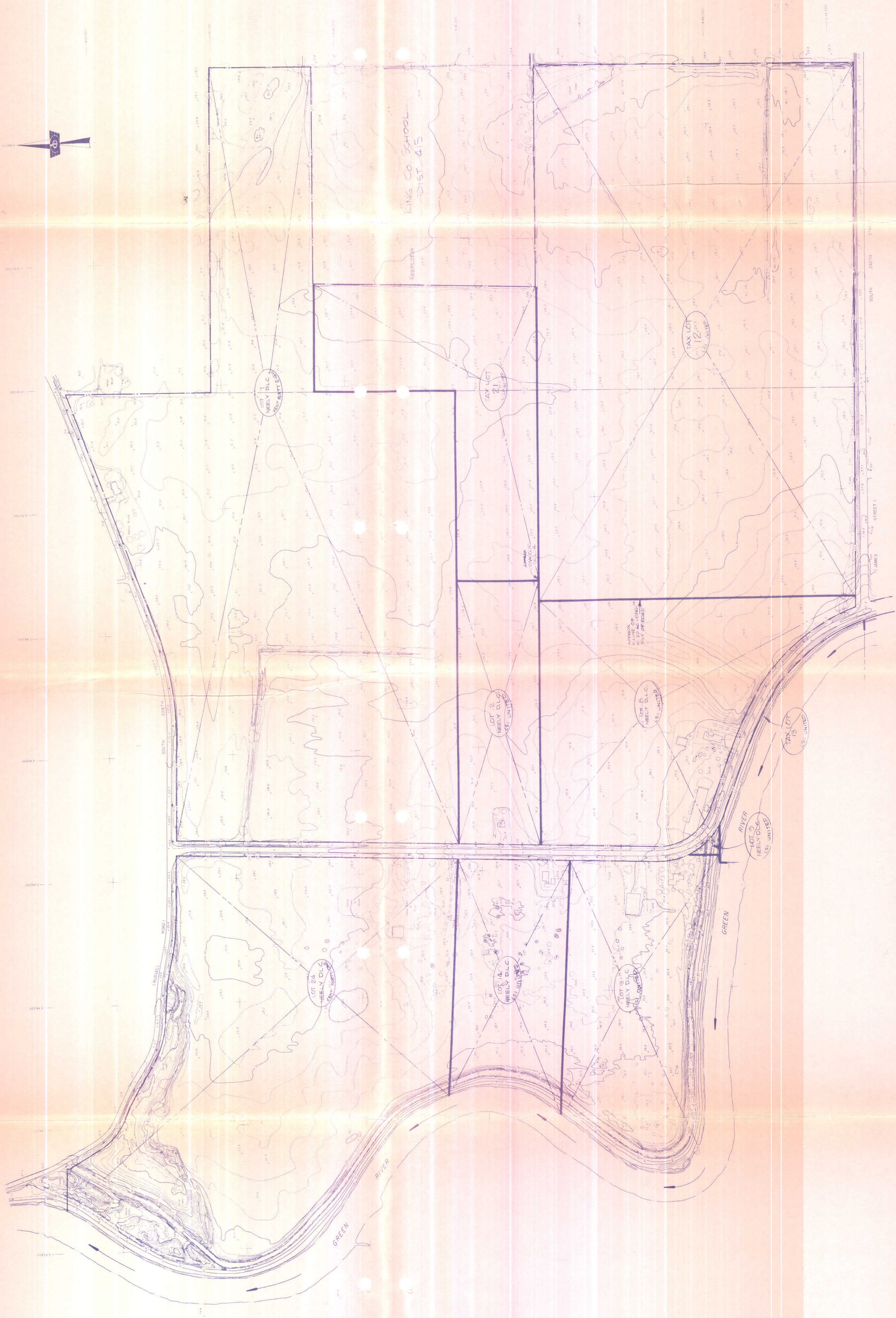
Manager REC. NO. Supt. of Records

(206) 454-3743 OR 885-7877
DODDS ENGINEERS, INC.
4205-148th AVE NORTHEAST
BELLEVUE, WASHINGTON 98007

PROJ NO
78139

SHT 1 OF 2

DWN J.S. STEADMAN BOOK 78139
DATE May 21, 1987
APPD DJD 52082



Total PROPERTY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐

Surface Water

(Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒

Ground Water

(Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE September 22, 1987	APPLICATION NUMBER G1-25102	PERMIT NUMBER G1-25102 P	CERTIFICATE NUMBER
-------------------------------------	--------------------------------	-----------------------------	--------------------

NAME Centron Properties Corporation	ADDRESS (STREET) 11808 Northup Way, Suite 310	(CITY) Bellevue	(STATE) Washington	(ZIP CODE) 98005-1922
--	--	--------------------	-----------------------	--------------------------

The applicant is, pursuant to the Report of Examination which has been accepted by the applicant, hereby granted a permit to appropriate the following described public waters of the State of Washington, subject to existing rights and to the limitations and provisions set out herein.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE 3 Wells
TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 450	MAXIMUM ACRE-FEET PER YEAR 305
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QUANTITY, TYPE OF USE, PERIOD OF USE Recreational use - June through October (to supplement lake level)
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LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL

P.O.D. #1 - 695 feet west and 440 feet south from the center of Section 14.
P.O.D. #2 - 980 feet east and 1190 feet south from the center of Section 14.
P.O.D. #3 - 470 feet west and 540 feet south from the center of Section 14.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) SW $\frac{1}{4}$ SE $\frac{1}{4}$	SECTION 14	TOWNSHIP N. 22	RANGE, (E. OR W.) W.M. 4E	W.R.I.A. 9	COUNTY King
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RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
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LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Those portions of Sections 14 and 15, T.22N., R.4E., W.M., and the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows: BEGINNING at the S $\frac{1}{4}$ corner of said Section 14; thence south 88°59'16" east, along the south line thereof, 1317.07' to the southeast corner of the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ thereof; thence north 00°52'51" east, along the east line of said subdivision, 1322.30' to the northeast corner thereof; thence north 89°01'49" west, along the north line of said subdivision, 881.50' to an intersection with a line parallel with and 436.2' easterly, as measured at right angles, from the north-south centerline of said Section 14; thence north 00°52'22" east, along said parallel line, 903.78'; thence south 89°01'31" east 881.18' to the east line of the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of said Section 14; thence north 00°25'51", along said east line, 418.60' to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44' to the center of said Section; thence north 00°52'22" east, along said east line, 418.60' to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44' to the center of said Section; thence north 00°52'22" east, along the north-south centerline thereof, 587.81', more or less, to the southerly right-of-way margin of south 228th Street; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83', as measured at right angles, of the S $\frac{1}{4}$ of said David A. Neely Donation Land Claim No. 37, said 287.83' being equal to 310' as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running north 89° 13'00" west, along said south line, 152.63' to the easterly bank of the Green river; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14; thence leaving said easterly bank and running south 89°05'32" east, along said south line, 968.18' to the POINT OF BEGINNING. EXCEPT the south 30' thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File Nos. 6332263 and 6332264.

DESCRIPTION OF PROPOSED WORKS

Three 12" wells.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:

Started

COMPLETE PROJECT BY THIS DATE:

June 14, 1991 4-11-94

WATER PUT TO FULL USE BY THIS DATE:

December 14, 1991 12-14-95

PROVISIONS

A well log of the completed well shall be submitted by the driller to the Department of Ecology within thirty (30) days of completion of this well. This well log shall be complete and all information concerning the static water level in the completed well, in addition to any pump test data, shall be submitted as it is obtained.

Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air line and gauge may be installed in addition to the access port.

An approved measuring device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through WAC 508-64-040. Meter readings shall be recorded monthly and this data shall be maintained and be made available to the Department of Ecology upon request.

A certificate of water right will not be issued until a final investigation is made.

This permit shall be subject to cancellation should the permittee fail to comply with the above development schedule and/or fail to give notice to the Department of Ecology on forms provided by that Department documenting such compliance.

Given under my hand and the seal of this office at Redmond, Washington,

this 14th day of December, 1990.

Department of Ecology

ENGINEERING DATA:

OK [Signature]

by Herman H. Huggins

Herman H. Huggins, Section Supervisor Water Resources

Mr. Tim Ambre
Kappes Miller Management
Managing Agent for the
Lakes At Kent Community Organization
12715 Bel-Red Road, #200
Bellevue, WA 98005

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

COMPUTER INPUT
☐ APPLICATION
☐ PERMIT
☐ CERTIFICATE
☐ OTHER

PROGRESS SHEET

☐ SURFACE WATER ☒ GROUND WATER

NAME Centron Properties Corporation TELEPHONE NO. 646-2776
ADDRESS (CITY) (STATE) (ZIP CODE)
3025 112th Ave., N.E. Bellevue Washington 98004
ASSIGNED TO The Lakes at Kent Community Organization TELEPHONE NO. DATE ASSIGNED
12/12/96
ADDRESS (CITY) (STATE) (ZIP CODE)

APPLICATION NO. G125102 PERMIT NO. G125102P CERTIFICATION NO. G1-25102C
DATE AMENDED DATE CANCELLED W.R.I.A.

APPLICATION

DATE APPLICATION RECEIVED September 22, 1987 INITIAL \$10.00 FEE RECEIVED ☒ YES ☐ NO DATE FEE RECEIVED September 22, 1987
STATEMENT OF ADDITIONAL EXAMINATION FEE \$ DATE SENT DATE RECEIVED
DATE RETURNED FOR COMPLETION OR CORRECTION DATE RECEIVED

TEMPORARY PERMIT

APPROVED BY DATE ISSUED

PUBLICATION

APPROVED BY DATE APPROVED DATE NOTICE SENT 11.30.87
PROTESTED BY AND DATE

DATE AFFIDAVIT RECEIVED 12-21-87 CHECKED BY m TIME EXPIRED 1-15-88 DATE AMENDED NOTICE SENT DATE AFFIDAVIT RECEIVED TIME EXPIRED

DEPARTMENT OF GAME AND FISHERIES REPORT

APPROVED PROVISIO PROTEST

EXAMINATION

DATE EXAMINATION MADE 4-20-90 MADE BY T.T. DATE REPORT OF EXAM. WRITTEN 4-23-90 WRITTEN BY T.T. CHECKED BY
DATE PERMIT FEE REQUESTED 5-23-90 AMOUNT DUE \$20.00 DATE RECEIVED 9-20-90 O.K. FOR PERMIT

PERMIT

PERMIT APPROVED BY DATE APPROVED PERMIT NO. G125102P DATE ISSUED 12/14/90

BEGINNING OF CONSTRUCTION

DATE NOTICE SENT DATE FILED EXTENSION FEE
EXTENDED TO EXTENDED TO

WELL DRILLER'S AND/OR CONSTRUCTION REPORT

DATE SENT DATE FILED

COMPLETION OF CONSTRUCTION

DATE NOTICE SENT 12/14/90 DATE FILED 4/8/94 EXTENSION FEE 15
EXTENDED TO 6/19/94 EXTENDED TO

PROOF OF APPROPRIATION

DATE SENT DATE FILED 10/11/94 EXTENSION FEE EXTENDED TO
DATE CERTIFICATE FEE REQUESTED \$5.00 AMOUNT DUE DATE RECEIVED 10/11/94 DATE APPROVED FOR CERTIFICATE 2/15/95 APPROVED BY ALCS

CERTIFICATION

PROOF EXAM. REQUIRED ☐ YES ☒ NO CERTIFICATE NUMBER G1-25102C DATE ISSUED 2/28/95

REMARKS

EXAMINATION RECORD CERTIFICATE

DATE EXAMINATION MADE 11-18-95	MADE BY P. Williams	DATE REPORT OF EXAM. WRITTEN CONFIRM RECORDED CERT 3-31-98	WRITTEN BY FEE	CHECKED BY ASSIGNMENT
DATE PERMIT FEE REQUESTED	AMOUNT DUE	DATE RECEIVED		
RE- ISSUED PERMIT				
PERMIT APPROVED BY	DATE APPROVED	PERMIT NO.	DATE ISSUED	
BEGINNING OF CONSTRUCTION				
DATE NOTICE SENT	DATE FILED	EXTENSION FEE		
EXTENDED TO	EXTENDED TO			
WELL DRILLER'S AND/OR CONSTRUCTION REPORT				
DATE SENT	DATE FILED			
COMPLETION OF CONSTRUCTION				
DATE NOTICE SENT	DATE FILED	EXTENSION FEE		
EXTENDED TO	EXTENDED TO			
PROOF OF APPROPRIATION				
DATE SENT	DATE FILED 4/20/98	EXTENSION FEE	EXTENDED TO	
DATE CERTIFICATE FEE REQUESTED	AMOUNT DUE \$5.00	DATE RECEIVED 6/15/98	DATE APPROVED FOR CERTIFICATE 6/25/98	APPROVED BY Buck Smith
CERTIFICATION				
PROOF EXAM. REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	CERTIFICATE NUMBER GL-25102C	DATE ISSUED 2/28/95 ; amended 7/1/98		
REMARKS				

ECY 040-1-80

PROGRESS

**BEFORE THE
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON**

IN THE MATTER OF RECISION OF)	FINDINGS OF FACT
GROUND WATER CERTIFICATE)	DETERMINATION AND
G1-25102C)	ORDER DOCKET NO. DE 98WR-N151

TO: Lakes at Kent Community Organization
12737 Bel-Red Road, #200
Bellevue, WA 98005

REPORT

This Report, Findings of Fact, Determination and Order have been prepared to fulfill the intent of chapter 90.03 Revised Code of Washington (RCW).

Chapter 90.03 RCW provides for the allocation of the State's water, through a permit program and the issuance of certificates of water right to memorialize water use perfected, by beneficial use, under a permit. This order pertains to the application of that statute to Water Right Certificate G1-25102C issued by the Department of Ecology, Water Resources Program. The Department of Ecology has conducted an investigation relating to water right certificate G1-25102C and has determined the following:

FINDINGS OF FACT

1. On December 14, 1990, Permit No. G1-25102P was issued to Centron Properties Corporation, (Lakes at Kent Community Organization). The permit authorized the withdrawal of ground water from three wells. The permit allocated 450 gpm and 305 acre-feet per year (AF/Y) for recreational use, June through October (to supplement lake level). The place of use is within portions of Sections 14 and 15, Township 22N, Range 4E, W.M., described as follows: Those portions of Sections 14 and 15, Township 22N, Range 4E, W.M., and the David A. Neely Donation Land Claim No. 37, all in King County, Washington described as follows: BEGINNING at the S $\frac{1}{4}$ corner of said Section 14; thence south 88°59'16" east, along the south line thereof, 1317.07 feet to the SE corner of the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ thereof; thence north 00°52'51" east, along the east line of said subdivision, 1322.30 feet to the NE corner thereof; thence north 89°01'49" west, along the north line of said subdivision, 881.50 feet to an intersection with a line parallel with and 436.2 feet easterly, as measured at right angles, from the north-south centerline of said Section 14; thence north 00°52'22" east, along said parallel line, 903.78 feet; thence south 89°01'31" east 881.18 feet to the east line of the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of said Section 14; thence north 00°25'51", along said east line, 418.60 feet to the east-west centerline of said Section 14; thence north 89°04'22" west, along said

centerline, 1317.44 feet to the center of said Section; thence north 00°52'22" east, along said east line, 418.60 feet to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44 feet to the center of said Section; thence north 00°52'22" east, along the north-south centerline thereof, 587.81 feet, more or less, to the southerly right-of-way margin of south 228th Street; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83 feet, as measured at right angles, of the S¼ of said David A. Neely Donation Land Claim No. 37, said 287.83 feet being equal to 310 feet as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running north 89°13'00" west, along said south line, 152.63 feet to the easterly bank of the Green River; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14; thence leaving said easterly bank and running south 89°05'32" east, along said south line, 968.18 feet to the POINT OF BEGINNING. EXCEPT the south 30 feet thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File Nos. 6332263 and 6332264.

2. A Proof of Appropriation (PA) form was received on October 11, 1994, and attested to the perfection of 450 gpm of water on an instantaneous basis.

3. On February 28, 1995, this office issued Lakes at Kent Community Organization, Water Right Certificate No. G1-25102C. Certificate G1-25102C authorized 450 gpm and reduced the annual quantity from 305 to 45 acre-feet per year, for recreational use - June through October.

4. The previous owners of the property (Centron Properties) mistakenly filed the proof of appropriation form before the project was complete and before their annual water use was fully perfected. The resultant certificate, with the reduced annual quantity, was therefor issued in error.

DETERMINATION AND ORDER

Based on the above, it is ORDERED that Ground Water Certificate G1-25102C is rescinded and Permit G1-25102P is reactivated.

This report constitutes our Findings of Fact, Determination, and Order. This Order may be appealed. Your appeal must be filed with the Pollution Control Hearings Board, PO Box 40903, Olympia, WA 98504-0903 within thirty (30) days of the date this order was mailed. At the same time a copy of your appeal must be sent to the Department of Ecology, c/o Water Resources Program, The Appeal Coordinator, PO Box 47600, Olympia, WA 98504-7600.

Order No. DE 98WR-N151

Page 3

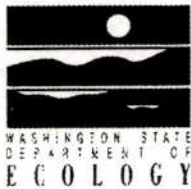
Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320. These procedures are consistent with Chapter 43.21B RCW.

DATED this 31st day of MARCH, 1998.



Daniel Swenson, Regional Supervisor
Water Resources Program
Northwest Regional Office
Department of Ecology

Tim Ambre c/o Kappes Miller Mgmt.
c/o The Lakes at Kent Community Organization
P.O. Box 759
Kirkland, WA 98083-0759



STATE OF WASHINGTON
AMENDED CERTIFICATE OF WATER RIGHT

Document Title: Certificate of Water Right

Agency: Department of Ecology
Northwest Regional Office
3190 160th Avenue Southeast
Bellevue, WA 98008-5452

Applicant: The Lakes at Kent Community
Organization/Kappes Miller Mgmt.
P.O. Box 759
Kirkland, WA 98083-0759

Reference Number: N/A

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
September 22, 1987	G1-25102	G1-25102 P	G1-25102 C

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown, but is limited to an amount actually beneficially used.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE		TRIBUTARY OF (IF SURFACE WATERS)	
3 wells		N/A	
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-Feet PER YEAR	
N/A	450	240	

QUANTITY/TYPE OF USE/PERIOD OF USE

Recreational use/May through October/to supplement and maintain lake level

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW SE	14	22	4E	9	King

PARCEL # N/A

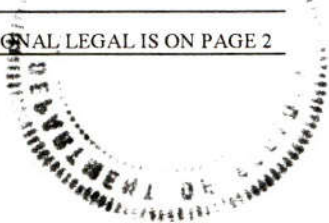
ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
N/A	N/A	22	4E	9	King

PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2



CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

P.O.D. #1 - 695 feet west and 440 feet south from the center of Section 14.
P.O.D. #2 - 980 feet east and 1190 feet south from the center of Section 14.
P.O.D. #3 - 470 feet west and 540 feet south from the center of Section 14.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Those portions of Sections 14 and 15, Township 22N, Range 4E, W.M., and the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows: BEGINNING at the S1/4 corner of said Section 14; thence south 88°59'16" east, along the south line thereof, 1317.07' to the SE corner of the SW1/4 of the SE1/4 thereof; thence north 00°52'51" east, along the east line of said subdivision, 1322.30' to the NE corner thereof; thence north 89°01'49" west, along the north line of said subdivision, 881.50' to an intersection with a line parallel with and 436.2' easterly, as measured at right angles, from the north-south centerline of said Section 14; thence north 00°52'22" east, along said parallel line, 903.78'; thence south 89°01'31" east 881.18' to the east line of the NW1/4 of the SE1/4 of said Section 14; thence north 00°25'51", along said east line, 418.60' to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44' to the center of said Section; thence north 00°52'22" east, along said east line, 418.60' to the east-west centerline of said Section 14; thence north 89°04'22" west, along said centerline, 1317.44' to the center of said Section; thence north 00°52'22" east, along the north-south centerline thereof, 587.81' more or less, to the southerly right-of-way margin of south 228th Street; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83', as measured at right angles, of the S1/4 of said David A. Neely Donation Land Claim No. 37, said 287.83' being equal to 310' as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running north 89°13'00" west, along said south line, 152.63' to the easterly bank of the Green River; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14; thence leaving said easterly bank and running south 89°05'32" east, along said south line, 968.18 to the POINT OF BEGINNING. EXCEPT the south 30' thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File Nos. 6332263 and 6332264.

PROVISIONS

All conditions and requirements contained in reports of examination or permits previously issued apply to this certificate unless specifically noted below.

The well access port shall be maintained at all times.

An approved metering device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through -040 (installation, operation, and maintenance requirements). Meter readings shall be recorded at least monthly.

The right to use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for non-use of water as provided in RCW 90.14.180.



Given under my hand and the seal of this office at Bellevue, Washington,
this 25th day of June, 1998.

Tom Fitzsimmons
Department of Ecology

ENGINEERING DATA
OK B.S.
ECY 040-1-2 (Rev. 8-97)

By Buck Smith (for Dan Swenson)
Daniel Swenson, Section Supervisor



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

July 1, 1998

Mr. Tim Ambre
C/o Kappes Miller Management
P.O. Box 759
Kirkland, WA 98083-0759

Dear Mr. Ambre:

Re: Water Right Certificate # G1-25102C – The Lakes at Kent Community
Organization

This is to inform you that your Amended Water Right Certificate has been prepared and forwarded to the King County Auditor for recording.

After it is recorded they will forward it on to you.

Sincerely,

Connie VanWell

Connie VanWell
Northwest Regional Office

WR:cv

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

FEE PAID 5.00
6/16/98

PROOF OF APPROPRIATION OF WATER

APPLICATION NUMBER G1-25102		PERMIT NUMBER G1-25102P	
NAME OF PERMITTEE The Lakes at Kent Community Organization			
POST OFFICE ADDRESS c/o Kappes Miller Mgmt, P.O. Box 759, Kirkland, WA 98083-0759		(CITY)	(STATE)
ACTUAL SOURCE OF APPROPRIATION SE 1/4 of Section 14, Township 22N., Range 4E, W.M. in Kent			
PURPOSE OR PURPOSES WATER IS USED FOR Recreational use to supplement and maintain lake level during summer			
DATE WATER WAS COMPLETELY APPLIED TO PERMITTED USE October 1997		IF USED FOR IRRIGATION: NUMBER OF ACRES ACTUALLY IRRIGATED N/A	
IF SOURCE IS A WELL, IS AN ACCESS PORT NOW INSTALLED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		MONTHS DURING WHICH WATER IS USED May-October	
PUMP SIZE Unknown			
ACTUAL AMOUNT WITHDRAWN OR DIVERTED FROM PERMANENT SYSTEM 450 <input checked="" type="checkbox"/> GPM <input type="checkbox"/> CFS 240 AC-FT			
HAVE ALL PROVISIONS AS REQUIRED BY PERMIT BEEN ACCOMPLISHED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		IF NO, EXPLAIN	

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED (USE ADDITIONAL SHEET IF NECESSARY)

See attached exhibit "A"

6/16/98
Issue Amended Certificate
for 450 gpm / 240 afy.
Buck

STATE OF WASHINGTON,
County of King } ss.

I, Bruce J. Dodds, agent by contract, being first duly sworn, depose and say that I have read the above and foregoing proof of appropriation; that I know the contents thereof; and that the facts therein stated are true.

IN WITNESS WHEREOF, I have hereunto set my hand this 16th day of APRIL, 1998.

JEANNE B. WIGHT
STATE OF WASHINGTON
NOTARY ---- PUBLIC

Subscribed and sworn to before me this 16th day of April, 1998.

Permittee Signature

Notary Public



April 16, 1998
DEI Project No. 94133

Mr. Buck Smith
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008

RECEIVED
APR 20 1998
NWRO-WR
DEPT OF ECOLOGY

Subject: Permit G1-25102P

Dear Mr. Smith:

Please find enclosed a copy of my November 7, 1997, letter to Peggy Williams and a completed Proof of Appropriation of Water Certificate.

I believe this documentation is adequate for you to now re-issue the Groundwater Certificate G1-25102C. Please advise if you need anything in addition to the above.

Very truly yours,
DODDS ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'Bruce J. Dodds', is written over the company name.

Bruce J. Dodds, P.E., L.S.
Chairman

cc: Tim Ambre



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (425) 649-7000

March 31, 1998

P 125 952 552
CERTIFIED MAIL
Z 224 364 914

Mr. Tim Ambre
Kappes Miller Management,
Managing Agent for the
Lakes at Kent Community Organization
12737 Bel-Red Road, #200
Bellevue, WA 98005

Dear Mr. Ambre:

Enclosed are FINDINGS OF FACT, DETERMINATION AND ORDER
NO. DE 98WR-N151. If you have any questions concerning the content of this
document, please call or write to me at:

Telephone: (425) 649-7147
Department of Ecology
Northwest Regional Office
3190 160th Avenue S.E.
Bellevue, Washington 98008

Sincerely,

Buck Smith

Buck Smith ✓
Enforcement Coordinator
Water Resources Program

BS:bs:gm
Enclosure

cc: Bruce Dodds – Dodds Engineers, Inc.



SENDER: <ul style="list-style-type: none">■ Complete items 1 and/or 2 for additional services.■ Complete items 3, 4a, and 4b.■ Print your name and address on the reverse of this form so that we can return this card to you.■ Attach this form to the front of the mailpiece, or on the back if space does not permit.■ Write "Return Receipt Requested" on the mailpiece below the article number.■ The Return Receipt will show to whom the article was delivered and the date delivered.		WR: B Smith		I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.	
3. Article Addressed to: MR TIM AMBRE KAPPES MILLER MANAGEMENT MANAGING AGENT FOR THE LAKES AT KENT COMMUNITY ORGANIZATION 12715 BEL RED ROAD #200 BELLEVUE WA 98005		4a. Article Number P 125 952 552		4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD	
5. Received By: (Print Name) Amanda Hoff		7. Date of Delivery DEC 27 1994		8. Addressee's Address (Only if requested and fee is paid)	
6. Signature: (Addressee or Agent) X Amanda Hoff					

PS Form 3811, December 1994

Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 224 364 914

WR: B SMITH
US Postal Service**Receipt for Certified Mail**

No Insurance Coverage Provided.

Do not use for International Mail (*See reverse*)

Sent to

MR TIM AMBRE

Street Number

KAPPES MILLER MANAGEMENT

LAKES AT KENT COMM. ORG.

Post Office, State, & ZIP Code

12737 BEL-ROAD #200

BELLEVUE WA 98005

Postage

\$

Certified Fee

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to
Whom & Date DeliveredReturn Receipt Showing to Whom,
Date, & Addressee's Address

TOTAL Postage & Fees

\$

Postmark or Date

April 1, 1998

Stick postage stamps to article to cover First-Class postage, certified mail fee, and charges for any selected optional services (*See front*).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached, and present the article at a post office service window or hand it to your rural carrier (*no extra charge*).
2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach, and retain the receipt, and mail the article.
3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.
4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.
5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.
6. Save this receipt and present it if you make an inquiry.

102595-97-B-0145



November 7, 1997
DEI Project No. 94133

RECEIVED
NOV 10 1997
DEPT. OF ECOLOGY

Ms. Peggy Williams
Department of Ecology
Shorelands and Water Resources
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

**Subject: The Lakes at Kent
Water Right Permit No. G1-25102P**

Dear Ms. Williams:

Enclosed with this letter is a copy of correspondence regarding the referenced permit sent to you approximately a year ago. In accord with that letter, we have monitored the groundwater pumping/consumption at The Lakes project from the first of June to October 31st of this year. The results are as follows:

Southerly well -	22,361,000 gal. (avg. rate-110 gpm)
Middle Well -	19,208,200 gal. (avg. rate - 90 gpm)
Northerly well -	<u>27,902,050 gal. (avg. rate -133 gpm)</u>
Total:	69,471,250 gal. (213.2 ac. ft.)

The entire 25 acre lake was excavated prior to the onset of pumping in June. At times during the summer the wells struggled to maintain the lake surface level at 23.5', 6" below the desirable operating level. Only during the 3+" of September rains were the pumps supplying sufficient flow to maintain the lake surface elevation at level 24'.

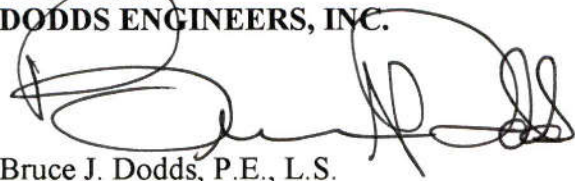
As the summer progressed, one of the pumps exhibited a slow deterioration in pumping rate beyond that which would otherwise be interpreted to be a decline to a steady state rate. This middle pump ended October with a pumping rate around 70 gpm where we would have expected a rate similar to the other two pumps of 110 gpm. We believe either the well pump, or screen(s), or both need replacement to reestablish 110-130 gpm rate. Had this pump operated at full capacity all summer long, we would have expected another 26 ac. ft. to be discharged to the lake and probably have consistently maintained an operating level closer to level 24.

Since we believe this data represents a typical year's operation, we request that you approve a water right for this project for $213 + 26 = 240$ ac. ft. per year.

Please contact me if you need additional information or assistance to issue the certificate.

Very truly yours,

DODDS ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'Bruce J. Dodds', written over the company name.

Bruce J. Dodds, P.E., L.S.
Chairman

cc: Tim Ambre
Eric Wells



DODDS ENGINEERS, INC.
CIVIL ENGINEERING SURVEYING PLANNING

December 13, 1996
DEI Project No. 94133

Ms. Peggy Williams
Department of Ecology
Shorelands and Water Resources
3190-160th Avenue S.E.
Bellevue, WA 98008-5452

RECEIVED

DEC 18 1996

DEPT. OF ECOLOGY

**Subject: The Lakes at Kent
Water Right Permit No. G1-25102P**

Dear Ms. Williams:

Thank you for your letter of Nov. 18, 1996, regarding the above project. In accord with your request, the following history should provide you with an explanation for why a misunderstanding of the project's status resulted in the premature issuance of its water right certificate.

Centron initiated the Lakes project in 1978 and eventually commenced phase 1 lake excavation in 1984. The Lake's master plan called for a 25 to 28 surface acre lake of which 14 acres would be created in the first phase. How the lake level would react to the area's variable groundwater conditions was a major unknown at the time of excavation. The lake bottom was not lined to allow natural groundwater to flow into the lake to maintain its level in the winter. Overflows above design operating levels were directed to the Green River through an adjustable weir system.

After monitoring lake operation and levels for several years after finishing phase 1, it became evident there was more than enough water to maintain acceptable levels in the winter, however during the summer months, additional water was needed to maintain the lake at its desired operating elevation. A number of test wells were drilled at various depths on the site and after testing flow rates and water quality, three relatively shallow wells were selected as being the most promising to provide supplemental summer water.

It was at this point in 1987 that Golder Associates applied to D.O.E. for a water right permit on Centron's behalf. Through soils studies, loss estimates, and the gathering of some extremely limited empirical data, 450gpm was estimated as the maximum loss rate (and therefor the maximum required flow during the summer months) for the ultimate 25 acre lake. At half this peak rate over the 5 summer months, the total volume consumed would be about 150 ac.-ft.

Processing on this permit/certificate of water right was not continued by either the D.O.E. or Centron, or both perhaps, because in 1990-91, Centron encountered financial troubles and eventually went out of business leaving the last half of the Lakes project to be developed or sold by a mortgagee-bank. At this point both Golder Associates and Dodds Engineers, the only parties who had sufficient data and the competence to establish the extent of the waters to be ultimately appropriated, were set on the project's sidelines without replacements. Correspondence from

4205 148TH AVE. N.E., SUITE 200-BELLEVUE, WA 98007 (206) 885-7877

FAX: (206) 885-7963

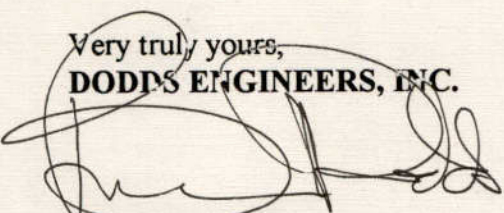
D.O.E. then was apparently directed to the managers of the Lakes Community Organization -- Kappes Miller -- a firm competent in real estate management but possessing minimal knowledge of the Lakes master plan and the project's ultimate water needs. Misunderstanding that the entire project was not complete and that the water right needed to cover the needs of a 25 acre lake, the certificate was issued on the total project area, but only for the existing 14 acre lake and for an annual consumption of no more than 45 Ac. ft. which we believe is about a third of what will be necessary.

With Polygon's (and Dodds Engineers, Inc.) 1994 reentry into developing the final stages of the project, the remaining excavation of the total 25 acre lake is now nearly complete. We anticipate the lake to be fully operational in its ultimate form this summer. We will monitor the lake's ground (well) water consumption weekly and lake level daily throughout the months of June through October. At the end of October, 1997, we should have accurate estimates of normal summer groundwater pumping needs and at that time it will be proper to issue a certificate of water right which will reflect the ultimate project's needs.

We therefore request that you revert the status of this project to a permit stage until we can produce accurate data at the end of next October (1997). Enclosed you will find a transfer document to shift the permit from Centron, signed by the last owner of Centron.

I trust this documentation is adequate for your needs. If you have additional requests for data or information, please contact me at your convenience.

Very truly yours,
DODDS ENGINEERS, INC.



Bruce J. Dodds, P.E., L.S.
Chairman

cc: Eric Wells
Tim Ambre

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

ASSIGNMENT OF APPLICATION OR PERMIT TO APPROPRIATE WATER

\$5.00 ASSIGNMENT FEE

I, James W. Summers, Centron Properties Corporation of Snohomish
(Applicant/Permittee) (County)
Washington do hereby assign, transfer and set over unto The Lakes at Kent
(State) (Assignee)
Community Organization of c/o Kappes Miller Mgmt., 12737 Bel-Red Rd. #200, Bellevue, WA 9800
(Address)
646-2776, all of my right, title and interest in and to Permit
(Phone Number) (Application/Permit)
Number G1-25402P for the appropriation of waters of Groundwater
(Stream, Lake, Spring, Well, etc.)
in King County, as said Permit appears of record in the
(Application/Permit)
office of the Department of Ecology, Olympia, Washington.

Witness my hand this 12th day of December, 1996.

Centron Properties Corporation
Applicant(s) Permittee
Joe Chaiman
Assignee

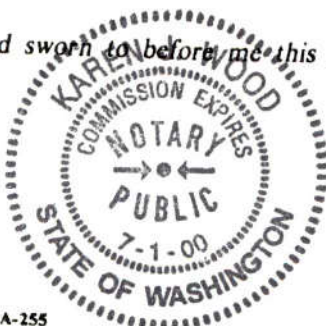
STATE OF WASHINGTON

County of Snohomish } ss.

I, James W. Summers, being first duly sworn, depose and say that I have
(Applicant/Permittee)
read the above Assignment of Application or Permit to Appropriate Water; that I know the contents thereof; and that the
facts therein stated are true.

IN WITNESS WHEREOF, I have hereunto set my hand this 12th day of December, 1996.
Centron Properties Corporation
By Joe Chaiman
(Applicant/Permittee)

Subscribed and sworn to before me this 12 day of December, 1996.



Karen Wood
Notary Public



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

November 18, 1996

Bruce J. Dodds, P.E., L.S.
Dodds Engineers, Inc.
4205 148th Avenue N.E.
Suite 200
Bellevue, WA 98007

Dear Mr. Dodds:

As per our telephone conversation on November 14, 1996, the Department of Ecology (Ecology) will wait for your confirmation to rescind Water Right Certificate G1-25102 C issued to Lakes at Kent Community Organization and rescind the information supplied by the Lakes at Kent Community Organization in the Proof of Appropriation of Water. Ecology will need a letter of reasoning to the misunderstanding of submitting the Proof of Appropriation of Water prior to complete construction and use of water requested.

Enclosed you will find an Assignment Form to be filled out by a representative from Centron Properties and to be notarized by a licensed notary. This will transfer G1-25012 P to The Lakes at Kent Community. A \$5.00 (five dollar) fee will be due, payable to the Department of Ecology.

Upon receipt of your letter (of agreement to rescind Water Right Certificate G1-25102 C and information), the Assignment Form, and the fee, Ecology will then reinstate G1-25012 P.

If you need any further assistance, please call me at (206) 649-7034, Monday through Thursday.

Sincerely,

Peggy Williams
Shorelands and Water Resources

PW:SA



DODDS ENGINEERS, INC.
CIVIL ENGINEERING SURVEYING PLANNING

22 January, 1996
DEI Project No. 94133

Mr. Mark Schuppe
Department of Ecology
Water Resources
3190 160th Ave. S.E.
Bellevue, WA 98008-5452

RECEIVED
JAN 23 1996
DEPT. OF ECOLOGY

**Subject: The Lakes at Kent
Well Monitoring**

Dear Mr. Schuppe:

Please be advised that from this date, Dodds Engineers, Inc. will be assuming responsibility for reporting on groundwater pumping at the referenced project. This firm prepared the original designs for the project and, except for the period from 1990 to 1994, conducted (or contracted for) all the studies on the lake and kept monitoring records of the lake's level. Now that Polygon N.W. has purchased the project and is proceeding with its completion, Dodds Engineers, Inc. will also be completing the work we started as long as Polygon continues to contract with us to do so. Part of this work entails monitoring the lake's response to various hydrologic inputs, the wells being one such input.

For your reference and file, I have enclosed a copy of a letter sent to Polygon regarding the estimates we and others have made of groundwater consumption for the ultimate project. I will not repeat that information here except to say that if the lake's water right is limited to 45 acre-ft. per year (as I have been told), we believe this quantity will not be adequate when the lake takes on its final configuration. We do believe, however, that the current number of wells and their pumping capacity will be adequate for the lake's ultimate size. At this point we cannot confirm these assumptions because we do not believe the information we have been given on pumping during 1995 is adequate to predict future demands.

We therefore submit herewith the meter readings we have been given by Kappes Miller which were apparently taken by Queen Pump this year. We are told these readings are in gallons.

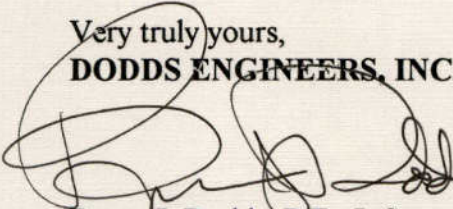
Date	Well #1	Well #2	Well #3
1/1/95	2,803,690	4,336,000	7,285,200
6/9/95	2,803,690	4,336,000	7,285,200
7/21/95	2,803,690	4,336,000	7,339,580
10/5/95	2,803,690	11,313,950	7,339,580
Total Pumping	0	6,977,950	54,380

The total consumption for 1995 was therefore 7,032,330 gallons or approximately 22 acre-ft. Recognize this figure does not reflect the ultimate water demand for the lake in its final configuration, nor can we correlate the level of consumption with the lake level, e.g. we have no data on how well the level of the lake was maintained at its desired elevation, nor do we have records on the amount of rainfall during the pumping period. All this data will be available next year.

It may appear that the current 45 ac.ft. figure for withdrawal will be adequate for the coming year. During the coming summer, Polygon plans to construct the remainder of the lake which should alter the consumption considerably. We request that you keep the final figure for this water right flexible until we are able to zero in on a more accurate figure, hopefully after the new lake is constructed and the summer has passed.

Very truly yours,

DODDS ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'Bruce J. Dodds', is written over the company name.

Bruce J. Dodds, P.E., L.S.
President

cc: Eric Wells, Polygon
Tim Ambre - Kappes Miller



DODDS ENGINEERS, INC.
CIVIL ENGINEERING SURVEYING PLANNING

November 21, 1995

Job. No. 94133

Mr. Eric Wells
Polygon Northwest Company
4030 Lake Washington Blvd. N.E.
Suite 201
Kirkland, WA 98033

Subject: The Lakes at Kent
Refresh Well Capacity, Lake Requirements

Dear Eric:

In response to your question regarding how much groundwater withdraw will be necessary to maintain the Lake's normal operating level, I have enclosed two copies of a study we had prepared in 1990 by Golder Associates. In the introduction on page 1, you will note Golder estimated losses for the lake in its ultimate 25 acre configuration to be 400 to 500 gpm maximum from June through October. During the remainder of the year, ground and surface water inflow to the lake maintain the lake surface at or above its normal operating elevation so no pumping is required.

The 400 to 500 gpm rate estimated by Golder is a maximum peak flow which may be sustained for several weeks to perhaps as much as a month. To calculate the total volume to be consumed during the pumping period, however, we would estimate an average continuous pumping rate of 250 gpm for the 25 acre lake. Using this rate from June through October yields 170 acre-feet total annual withdraw.

We believe this 170 acre-foot figure should be used for water rights purposes until construction of the lake is complete and actual usage can be monitored for several years thereafter.

I trust this explanation is adequate for your present needs. Should you need additional help, please advise.

Very truly yours,
DODDS ENGINEERS, INC.

Bruce J. Dodds, P.E., L.S.
President



RECEIVED

OCT 11 1994

DEPT. OF ECOLOGY



106-198

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PROOF OF APPROPRIATION OF WATER

APPLICATION NUMBER G1-25102		PERMIT NUMBER G1-25102P	
NAME OF PERMITTEE Lakes at Kent Community Organization			
POST OFFICE ADDRESS c/o Kappes Miller Management		(CITY) 12737 Bel-Red Road, #200	(STATE) Bellevue, WA
		(ZIP CODE) 98005	
ACTUAL SOURCE OF APPROPRIATION SW 1/4 SE 1/4 of section 14, Township 22 N, Range 4E W. M., in King County			
PURPOSE OR PURPOSES WATER IS USED FOR Recreational Use (to supplement lake level)			
DATE WATER WAS COMPLETELY APPLIED TO PERMITTED USE 12-14-90		IF USED FOR IRRIGATION: NUMBER OF ACRES ACTUALLY IRRIGATED NA	
IF SOURCE IS A WELL, IS AN ACCESS PORT NOW INSTALLED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		MONTHS DURING WHICH WATER IS USED June through October	
PUMP SIZE unknown			
ACTUAL AMOUNT WITHDRAWN OR DIVERTED FROM PERMANENT SYSTEM 450		<input checked="" type="checkbox"/> GPM <input type="checkbox"/> CFS	
HAVE ALL PROVISIONS AS REQUIRED BY PERMIT BEEN ACCOMPLISHED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		IF NO, EXPLAIN NA	

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED (USE ADDITIONAL SHEET IF NECESSARY)

See attached legal description.

OK for certificate
Issue certificate as
per changes to permit.
NCS 2/15/95

STATE OF WASHINGTON,

County of King

} ss.

I, Tim Ambre, agent by contract, being first duly sworn, depose and say that I have read the above and foregoing proof of appropriation; that I know the contents thereof; and that the facts therein stated are true.

IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of October, 1994.

Lakes at Kent Community Organization

by Tim Ambre, agent by contract

Permittee Signature

Subscribed and sworn to before me this 5th day of October, 1994.

Notary Public

98WR-N151

December 13, 1996
DEI Project No. 94133

Ms. Peggy Williams
Department of Ecology
Shorelands and Water Resources
3190-160th Avenue S.E.
Bellevue, WA 98008-5452

**Subject: The Lakes at Kent
Water Right Permit No. G1-25102P**

Dear Ms. Williams:

Thank you for your letter of Nov. 18, 1996, regarding the above project. In accord with your request, the following history should provide you with an explanation for why a misunderstanding of the project's status resulted in the premature issuance of its water right certificate.

Centron initiated the Lakes project in 1978 and eventually commenced phase 1 lake excavation in 1984. The Lake's master plan called for a 25 to 28 surface acre lake of which 14 acres would be created in the first phase. How the lake level would react to the area's variable groundwater conditions was a major unknown at the time of excavation. The lake bottom was not lined to allow natural groundwater to flow into the lake to maintain its level in the winter. Overflows above design operating levels were directed to the Green River through an adjustable weir system.

After monitoring lake operation and levels for several years after finishing phase 1, it became evident there was more than enough water to maintain acceptable levels in the winter, however during the summer months, additional water was needed to maintain the lake at its desired operating elevation. A number of test wells were drilled at various depths on the site and after testing flow rates and water quality, three relatively shallow wells were selected as being the most promising to provide supplemental summer water.

It was at this point in 1987 that Golder Associates applied to D.O.E. for a water right permit on Centron's behalf. Through soils studies, loss estimates, and the gathering of some extremely limited empirical data, 450gpm was estimated as the maximum loss rate (and therefor the maximum required flow during the summer months) for the ultimate 25 acre lake. At half this peak rate over the 5 summer months, the total volume consumed would be about 150 ac.-ft.

Processing on this permit/certificate of water right was not continued by either the D.O.E. or Centron, or both perhaps, because in 1990-91, Centron encountered financial troubles and eventually went out of business leaving the last half of the Lakes project to be developed or sold by a mortgagee-bank. At this point both Golder Associates and Dodds Engineers, the only parties who had sufficient data and the competence to establish the extent of the waters to be

DEI Job No. 94133

Ms. Williams
03/17/98

page 2

ultimately appropriated, were set on the project's sidelines without replacements. Correspondence from D.O.E. then was apparently directed to the managers of the Lakes Community Organization -- Kappes Miller -- a firm competent in real estate management but possessing minimal knowledge of the Lakes master plan and the project's ultimate water needs. Misunderstanding that the entire project was not complete and that the water right needed to cover the needs of a 25 acre lake, the certificate was issued on the total project area, but only for the existing 14 acre lake and for an annual consumption of no more than 45 Ac. ft. which we believe is about a third of what will be necessary.

With Polygon's (and Dodds Engineers, Inc.) 1994 reentry into developing the final stages of the project, the remaining excavation of the total 25 acre lake is now nearly complete. We anticipate the lake to be fully operational in its ultimate form this summer. We will monitor the lake's ground (well) water consumption weekly and lake level daily throughout the months of June through October. At the end of October, 1997, we should have accurate estimates of normal summer groundwater pumping needs and at that time it will be proper to issue a certificate of water right which will reflect the ultimate project's needs.

We therefore request that you revert the status of this project to a permit stage until we can produce accurate data at the end of next October (1997). Enclosed you will find a transfer document to shift the permit from Centron, signed by the last owner of Centron.

I trust this documentation is adequate for your needs. If you have additional requests for data or information, please contact me at your convenience.

Very truly yours,
DODDS ENGINEERS, INC.

Bruce J. Dodds, P.E., L.S.
Chairman

cc: Eric Wells
Tim Ambre

PUMP: Type: Sub. X Turb. _____ Cent. _____ Other _____
Make: unavailable
Motor BHP unavailable Speed unavailable rpm unavailable
Water Lub unavailable Oil Lub unavailable
Pump Setting (depth) unavailable feet
Access Port yes Airline unknown Length unknown feet
Flow Meter: Make McCrometer Serial No. unavailable
Meter Reading NA
Booster Pump: No X Yes NA BHP NA

SYSTEM: Pressure _____ Open Discharge X
Pump discharge head pressure NA psi
Discharge pipe diameter 12 inches
No. of sprinklers NA
Sprinkler make and model NA
Size nozzle openings NA
Average pressure at sprinkler heads NA psi

USE DATA/OPERATING CHARACTERISTICS:

Spring/stream flow measurement NA
Static water level unknown feet below LSD
Dynamic (pumping) level unknown feet below LSD
Number of acres developed NA
Type of crop(s) NA
Number of domestic units NA
Remarks (sketch irrigated land): NA

QUANTITY BENEFICIALLY USED (enter on reverse side)

Date Examination Made: _____ 19_____
Day of _____ Examined by: _____

11/10/94

LAKES AT KENT COMMUNITY ORGANIZATION
WELL LOGSHEET
PERMIT #G1-25102-P

44.268 AF

	WELL #1 - WATERFORD	WELL #2 - ISLAND	WELL #3 - ISLAND PARK
1994 YEAREND	2803690	4336000	7285200
JAN 1995			
FEB			
MARCH			
APRIL			
MAY			
JUNE			
JULY			
AUG			
SEPT			
OCT			
NOV			
DEC			
1995 TOTAL			



RECEIVED
OCT 11 1994
DEPT. OF ECOLOGY

FEE PAID

#5.00
AS

October 6, 1994

DEPARTMENT OF ECOLOGY
Northwest Regional Office
Water Resources
Attention: Mark Schuppe
3190 160th Avenue Southeast
Bellevue, Washington 98008-5452

RE: Proof of Appropriation of Water #G1-25102P

Dear Mr. Schuppe,

Please see the enclosed Proof of Appropriation of Water for the Lakes at Kent Community Organization and a \$5.00 check and a \$8.00 check for filing and recording fees.

Centron Properties Corporation, the original developer, filed bankruptcy several years ago and half of the development was never built and went back to University Savings Bank. Some of the information requested on your form is not available. I have been working with Mr. Pat Locke for several months in an attempt to locate essential information needed to complete the paperwork. In order to try and find some of the well information listed on the form would require the removal of the pumps from the well vaults and the dismantling of them. All the suppliers and lake designers for the project do not much information in their files for the Lakes at Kent. As requested, flow meters were installed in late June on the three wells at a cost of \$4200. A one year record of well log readings are unavailable.

If you need additional assistance, please contact me at (206) 646-2776 extension 208 or pat Locke in your Department at (206) 649-7077.

Sincerely,

Tim Ambre

KAPPES MILLER MANAGEMENT
Managing Agent for the Lakes at Kent Community Organization

Attention : Pat Locl

FEE PAID

\$15.00
AG

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

RECEIVED

APR - 8 1994

DEPT. OF ECOLOGY

CONSTRUCTION NOTICE

- ☐ BEGINNING OF CONSTRUCTION
☒ COMPLETION OF CONSTRUCTION

NAME The Lakes at Kent Community Organization	SURFACE WATER PERMIT NO NA	GROUND WATER PERMIT NO. G1-25102 P
DATE CONSTRUCTION BEGAN unknown (est. 1987?)	DATE CONSTRUCTION COMPLETED unknown (est. 1987?)	DATE COMPLETION EXPECTED

IF CONSTRUCTION NOT COMPLETE, SHOW % COMPLETED AS OF THIS DATE

% EQUIPMENT IN PLACE	% MATERIAL IN PLACE	% EXCAVATED	% STRUCTURE
----------------------	---------------------	-------------	-------------

IF CONSTRUCTION HAS BEEN ABANDONED

DATE ABANDONED	REASON ABANDONED
----------------	------------------

REMARKS OR ANY ADDITIONAL INFORMATION WHICH MAY TEND TO SHOW GOOD FAITH IN THE PROSECUTION OF THE WORK

On 2/4/87, Centron, the original developer, formed the Lakes at Kent Community Organization. Centron went bankrupt several years ago. Consequently, the records that have been turned over to Kappes Miller Management are incomplete. The wells have been installed for several years. Golder and Associates in Redmond, Washington has the well logs on file for this property.

I certify I am the holder of the above permit issued by the Department of Ecology for the State of Washington, and in accordance with the terms of such permit and the limitations endorsed by the Department of Ecology have ☐ begun ☒ completed the actual construction of the work described in the permit.

OK FOR CC
4/11/94 OF

Ambre

The Lakes at Kent Community Organization
Timothy Ambre, agent by contract

Signature of Applicant
KAPPES MILLER MANAGEMENT
Post Office Box 759

Present Address

Kirkland, Washington 98083-0759
City, State, Zip Code



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

April 12, 1994

Mr. Tim Ambre
% Kappes Miller Management
PO Box 759
Kirkland, WA 98083-0759

Dear Mr. Ambre:

Re: Water Permit No. G1-25102P

We have received your Notice of Completion of Construction associated with the above-numbered permit.


Enclosed is a Proof of Appropriation form which is to be filed when the water is been put to full beneficial use. Full beneficial use means that water is being used in agreement with the terms of the permit. You may complete and file the Proof of Appropriation form for less water than authorized in the permit, if the project is complete, and less water is being used than anticipated.

If you can not put the water to full beneficial use by April 11, 1995, please contact the Department of Ecology. Permit cancellation may result for failing to timely file the Proof of Appropriation form.

The fees for filing and recording your Water Right Certificate are \$5.00 payable to the Department of Ecology and \$8.00 payable to the King County Auditor.

If you have any questions or concerns on the above information or any other aspect of your water right permit, please call the Department of Ecology at (206) 649-7000. Thank you for your attention to this matter.

Sincerely,


Dorothy Glenn
Water Resources
Northwest Regional Office

DG/bas
Enclosure



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave. S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

March 21, 1994

Mr. Tim Ambre
c/o Kappes Miller Management
PO Box 759
Kirkland, WA 98083-0759

Re: Ground Water Permit G1-25102

Dear Mr. Ambre:

Per our phone conversation today, I am enclosing copies of the water right permit, the letter of July 30, 1992 explaining what needs to be done, and the necessary forms and information bulletins.

Updating the 1992 letter, a \$15.00 back extension fee is required to bring the permit into good standing through December 14, 1994.

I understand there is a legal document (from Centron?) which assigned all interest to "The Lakes at Kent Owners Association". Because Centron filed the original application and the permit is in Centron's name, it would help us manage this permit if we had a copy of that agreement.

Please call me at (206) 649-7093 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Pat Locke".

Pat Locke
Water Resources

PL:pl
Enclosures

September 2, 1993

TO: File/Sheila Baker

FROM: Pat Locke

SUBJECT: Centron Properties Permit G1-25102

Per phone 9/2/93:

Centron Properties filed this application for an apartment complex, "The Lakes". Certificate will be issuing in near future and there should be an assignment to "The Lakes". However, Centron went bankrupt and there is no one to be assignee. There is however, a legal document assigning all interests to "The Lakes at Kent Owners Association". John Aduckus of Kappes-Miller Mgmt. is handling the property now and will send a copy of assignment document along with \$10.00 to cover CC extensions for the last two years to bring this file up to date. He is checking on access port and meter in order to file CC in timely manner.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

- ☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- ☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE September 22, 1987	APPLICATION NUMBER G1-25102	PERMIT NUMBER	CERTIFICATE NUMBER
-------------------------------------	--------------------------------	---------------	--------------------

NAME Centron Properties Corporation			
ADDRESS (STREET) 3025 112th Ave., N.E.	(CITY) Bellevue	(STATE) Washington	(ZIP CODE) 98004

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well 3 wells

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 1125 450	MAXIMUM ACRE-FEET PER YEAR 305
-------------------------------	--	-----------------------------------

QUANTITY, TYPE OF USE, PERIOD OF USE
Recreational use - June through October

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL

P.O.D #1 695' W and 440'S from the center of Sec 14

P.O.D #2 980'E and 1190'S from the center of Sec. 14

P.O.D #3 470' W and 540'S from the center of Sec 14

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) SW 1/4 SE 1/4	SECTION 14	TOWNSHIP N. 22	RANGE, (E. OR W.) W.M. 4E	W.R.I.A. 9	COUNTY King
--	---------------	-------------------	------------------------------	---------------	----------------

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
-----	-------	------------------------------------

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

No orig doc in file? SB

DESCRIPTION OF PROPOSED WORKS

3-12" wells

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:

Started

COMPLETE PROJECT BY THIS DATE:

6 months from P.I.

WATER PUT TO FULL USE BY THIS DATE:

1 yr. from P.I.

REPORT

12" and 10" wells

CHRISTINE O. GREGOIRE
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350-150th Ave. N.E. • Redmond, Washington 98052-5301 • (206) 867-7000

December 14, 1990

Centron Properties Corporation
11808 Northup Way, Suite 310
Bellevue, WA 98005-1922

Gentlemen:

Enclosed is Ground Water Permit No. G1-25102P. Our information indicates you have begun construction of your project. We are enclosing a Notice of Completion of Construction form which must be filed when you have finished the work.

If you cannot complete your project by June 14, 1991, you must contact this office.

Please read the enclosed information sheet as well as both sides of your permit.

Sincerely,

Water Resources
NORTHWEST REGIONAL OFFICE

dw
Enclosure

NOTE: PLEASE ADVISE OF ANY ADDRESS CHANGE



CHRISTINE O. GREGOIRE
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350-150th Ave. N.E. • Redmond, Washington 98052-5301 • (206) 867-7000

May 18, 1990

Centron Properties
3025 - 112th Avenue N.E.
Bellevue, WA 98004

Gentlemen:

While investigating a number of reported surface water and ground water declines in the northwest region, we have noticed some long term regional trends in declining water tables. The cause appears to be due to a combination of drought, pumpage, and erroneous static water level readings. The latter has been of some concern to us and we need to notify major withdrawals of ground water and other users with significant ground water withdrawals of the importance of taking static water level (SWL) measurements which do not reflect pumping water levels or water levels recovering from a recently shut off pump, or of interference from a nearby well or wells in the same well field being pumped while another well is being measured.

Pursuant with the authority vested in the Department of Ecology under RCW 90.03 and RCW 90.44, we are requesting that all major withdrawals of ground water conduct a continuous program of SWL measurements on at least a monthly interval to monitor their system. We also request that before these readings are taken that all wells in a well field be shut off long enough for equilibrium to occur, that is for consecutive measurements to have no change. This data shall be recorded in the purveyors files until such time that it is requested by the Department of Ecology for its periodic review of ground water basins.

If you have any questions concerning this please contact the undersigned at 867-7013 or Roy Bishop at 867-7017.

Sincerely,

A handwritten signature in cursive script that reads "Jerry Liszak".

Jerry Liszak
District Hydrogeologist
Water Resources

JL:dw

9612-M

Affidavit of Publication

State of Washington

DEPARTMENT OF ECOLOGY NOTICE OF APPLICATION TO APPROPRIATE PUBLIC WATERS

TAKE NOTICE:

That Centron Properties Corporation of Bellevue, Washington on September 22, 1987 under Application No. G1-25102 filed for permit to appropriate public waters, subject to existing rights, from Well in the amount of 1125 Gallons Per Minute each year, for Recreational Use — June through October.

The source of the proposed appropriation is located within SW ¼ of SE ¼ of Section 14, Township 22 N., Range 4E W. M., in King County.

Protests or objections to approval of this application must include a detailed statement of the basis for objections: protests must be accompanied by a two dollar (\$2.00) recording fee and filed with the Department of Ecology, at the address shown below, within thirty (30) days from December 15, 1987.

DEPARTMENT OF ECOLOGY, Northwest Regional Office, 4350 — 150th Ave. N. E., Redmond, Washington 98052.

Dates of publication in the Seattle Daily Journal of Commerce, December 8 and 15, 1987.
(9612-M)

STATE OF WASHINGTON KING COUNTY—SS.

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12th day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below

stated period. The annexed notice, a

Notice of Application to Appropriate

Public Waters

was published on December 8, 15, 1987

Subscribed and sworn to before me on

December 15, 1987

Notary Public for the State of Washington,
residing in Seattle.

RECEIVED
DEC 21 1987
DEPT. OF ECOLOGY

12-23-87

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

NOTICE OF APPLICATION TO APPROPRIATE PUBLIC WATERS

TAKE NOTICE:

That CENTRON PROPERTIES CORPORATION
of BELLEVUE, WASHINGTON on SEPTEMBER 22, 1987 under
Application No. G1-25102 filed for permit to appropriate public waters, subject to existing rights,
from WELL
in the amount of 1125 GALLONS PER MINUTE
each year, for RECREATIONAL USE - JUNE THROUGH OCTOBER

The source of the proposed appropriation is located within SW 1/4 SE 1/4

of Section 14, Township 22 N., Range 4E W.M., in KING County.

Protests or objections to approval of this application must include a detailed statement of the basis for objections; protests must be accompanied by a two dollar (\$2.00) recording fee and filed with the Department of Ecology, at the address shown below, within thirty (30) days from

Department of Ecology
Northwest Regional Office
4350 - 150th Ave. N. E.
Redmond, Washington 98052
Regional Office
4350 - 150th Ave. N. E.
Redmond, Washington 98052

(Last date of publication to be entered above by publisher)

NOTICE

DODDS ENGINEERS, INC.
BELLEVUE, WA

PROJECT NO. 78139
REV APRIL 25, 1986

LEGAL DESCRIPTION (SHORT FORM)

THE LAKES -- TOTAL PROPERTY

G125102

Those portions of Sections 14 and 15, Township 22 North, Range 4 East, W.M., and of the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows:

BEGINNING at the south quarter corner of said Section 14; thence S88°59'16"E, along the south line thereof, 1317.07 feet to the south-east corner of the southwest quarter of the southeast quarter thereof; thence N00°52'51"E, along the east line of said subdivision, 1322.30 feet to the northeast corner thereof; thence N89°01'49"W, along the north line of said subdivision, 881.05 feet to an intersection with a line parallel with and 436.2 feet easterly, as measured at right angles, from the north-south centerline of said section 14; thence N00°52'22"E, along said parallel line, 903.78 feet; thence S89°01'31"E 881.18 feet to the east line of the northwest quarter of the southeast quarter of said section 14; thence N00°52'51"E, along said east line, 418.60 feet to the east-west centerline of said section 14; thence N89°04'22"W, along said centerline, 1317.44 feet to the center of said section; thence N00°52'22"E, along the north-south centerline thereof, 587.81 feet, more or less, to the southerly right-of-way margin of S. 228th St.; thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83 feet, as measured at right angles, of the south one-half of said David A. Neely Donation Land Claim No. 37, said 287.83 feet being equal to 310 feet as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151; thence leaving said southerly right-of-way margin and running N89°13'00"W, along said south line, 152.63 feet to the easterly bank of the Green River; thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said section 14; thence leaving said easterly bank and running S89°05'32"E, along said south line, 968.18 feet to the POINT OF BEGINNING.

EXCEPT the south 30 feet thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditors File Nos. 6332263 and 6332264.

RECEIVED
SEP 22 1987

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

78139LE2
THE LAKES-TOTAL ORIGINAL PROPERTY (SHORT FORM)

RECEIVED
SEP 22 1987



DODDS ENGINEERS, INC.
CIVIL ENGINEERING SURVEYING PLANNING

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

October 6, 1986
DEI Project No. 78139

City of Kent
Public Works Department
P.O. Box 310
Kent, WA 98031
ATTN: Don Wickstrom/Terry Ferguson

Re: The Lakes at Kent, Storm Water - Lake System Status

Dear Don:

After our conversation on October 1 regarding the actions we needed to complete prior to your approval of Division 1 of the Lakes plat, I had a subsequent conversation with Pete Gulick regarding the covenants. Pete has spoken with the City attorney and from Pete's comments I get the impression there are some differing opinions as to what our intentions and responsibilities are with respect to the overall stormwater/lake system. Therefore, I think this is perhaps as good a time as any for me to review what we have accomplished and what we intend to do as the project progresses so that we can agree on our objectives.

STORM WATER DETENTION CAPACITY

As you know, the total project will ultimately encompass 240 acres, of which we have planned 28 to 35 acres, more or less, to be lake. The original plan was for most of this lake area (28 acres) to be the main lake and the remainder to be finger or landscaping lakes. The distinction between the two types of lakes is that the main lake system will fluctuate in depth from a normal level of 24 to a maximum design level of 28 while the finger lakes could be at some normal or base level higher than 24 to facilitate waterfalls and circulation by pumping from the main lake to the higher base elevation then allowing the water to cascade back to the main lake. Obviously, if the main lakes were at base level 24, the design would produce a total site storage of $28 \times 4 = 112$ acre-feet. This figure is represented throughout the agreements and ordinances which were made in the initial stages of the project.

The 112 ac-ft. value was not calculated by the simple multiplication above, however. When Collins and Ryder established how much storage was necessary, they presumed that, as I have, the intention of the storage is to accommodate the runoff from the 7-day duration, 100-year return interval storm. The intent of the rule of course is to provide for the circumstance where theoretically no discharge can occur from the site because the Green River or some other receiving facility is shut down to inflows. I think you will agree that the correct approach is not to

Don Wickstrom/Terry Ferguson

page 2

October 6, 1986

select some predetermined volume and ignore the particular site's characteristics, but to use the 8.5" rainfall depth figure (generally accepted as the 7-day, 100-yr storm value) as the input to the system and then decrease or increase the volume as appropriate considering the site conditions. I would submit that most developments which are subject to this storage requirement should be analyzed with the groundwater as a variable, and yet I would surmise that it is never considered.

The Lakes project however, must fall in this category. Because we are using a facility which is cut into the natural soils, we must consider the groundwater and soil characteristics when we calculate the storage ultimately necessary. And, as I will explain in a moment, what we do about controlling the lake level will change the characteristics of the water table. Therefore it is of paramount importance to me that we agree on the way we are to approach developing a solution for the stormwater control problem. I think it is easy to agree on our objective -- to provide a stormwater control system which will not cause damage either to the City or the development under all conditions which we can reasonably anticipate while meeting the intent of the regulations governing our designs. We have the ability at this stage to take one of two different approaches, (1) just provide the 8.5" storage or (2) engineer the system to meet the objective stated above. In what follows I wish to make a case for the engineered approach. I intend to do this by going back over what we have learned so far and what we intend to do in the near future to nail down the few unknowns left. If I am not mistaken, the process should produce the answers we need with no wasted expense, and a system we can all have confidence in.

STUDIES CONDUCTED/DATA AVAILABLE

We have recognized from the beginning of this project that none of us could predict with any certainty how the lake system would function because there were too many variables which either we could not calculate or model accurately. The most significant of these variables are:

1. The variable level of the Green River as it affects:
 - a. Groundwater levels
 - b. Discharge of the lake to the river
 - c. Flood elevations
2. Soil characteristics.
3. Probable rainfall depths/storm intensities/durations/etc.
4. P-channel existence/timing/function/characteristics/etc.
5. Lake construction methods as they effect infiltration.

In an attempt to pare this list down to a manageable number we had a comprehensive soil testing program run on the site, a groundwater expert (Todd) study the probable groundwater levels, recorded groundwater and river levels for the last several years, collected records of the daily river flows for the last 25 years (ever since the river has been controlled -- these records are attached), collected daily precipitation values at Sea-Tac for the periods where the river flows were significant for the same period (also attached) and retained Harlan Glenn for his

Don Wickstrom/Terry Ferguson
Page 3
October 6, 1986

expertise in constructing lakes similar to ours. The City has now been provided with copies of all this information, so I won't go over those details here.

WHAT WE KNOW NOW

As part of the Division 1 plat we have excavated between 12 to 14 acres of the lake system (main and finger lakes) depending on the elevation at which the area is measured. The lake was divided into 4 sections, the north and south main lakes being separated by the test lake and the entry finger lakes at the extreme south margin of the project. The only lake which had complete bottom lining and edge treatment was the test lake, the others had portions of this work done and in the case of the north main lake, no edge or bottom treatment was installed. We have monitored these lakes since the winter of 1984. The conclusions we can make based on the reports and data above and the results of the monitoring are as follows:

1. With or without the bottom treatment, the level of the lake will fall to elevation 20 or below in the summer. Since we do not count on the lake sealing itself and since we do not think a sealing treatment or liner would be effective when the groundwater table would potentially be above 24 in the winter, we conclude that we will have to install a well near the east end of the project where the project road will ultimately connect to 64th. Ave. So. to maintain the lake level at 24. This work is scheduled for next year. We intend to estimate the size of the flow needed and will adjust accordingly to adapt to actual conditions. We can still only very roughly estimate the rate of water loss since it is a function of evaporation, wind conditions, ground infiltration, bottom condition of the lake, etc. Until the first lake (14 ac.±) is completely constructed and the well is operating, we will have to feel our way with the estimates we have now which look like about 500gpm peak.
2. Groundwater levels in the winter cause the water to rise above the 24 elevation in the lake. The rate at which this rise occurs is, among other factors beyond our control, a function of the level of the water in the river. We know from Todd's report that the total rainfall will effect the ultimate level this groundwater will attain, and also presumably its lowest level in any given year. Our records are not complete enough to find a quantitative correlation between these two factors however. Since we know how to approach the "lake level too low problem", our only concern relating to the groundwater levels now is how to approach the "groundwater too high problem" -- ie will groundwater occupy stormwater storage space and to what extent. I'll explain what we intend to do about that in the next section.
3. As long as we protect the lakes from winter runoff created on exposed soils, the water quality aspects seem to take care of themselves. We will monitor the quality beginning this winter after

Don Wickstrom/Terry Ferguson
Page 4
October 6, 1986

the lake construction is finished and the lakes have refilled themselves. Glenn is producing a section of his report which will address the quality issues and outline the steps necessary to be taken by the entity charged with the maintenance of the system.

WHERE WE ARE NOW/CURRENT PROPOSALS

As you can readily see from the discussion above, we are not yet in a position where we can accurately answer how much storage we will need. We know that we will never have to pump water from the lake to any discharge point during the summer months which extend from June to October. This fact becomes obvious from the rainfall data and the river stage data enclosed and from our experience over the last two summers with the groundwater levels acting in a manner consistent with Todd's predictions. Based on the same data and observations, we know that we have to provide a method of maintaining the level of the lakes at elevation 24 in the winter-time since the groundwater inflow causes the watertable to exceed that level.

Our initial approach to solving this problem some years ago when Collins and Ryder were handling this aspect of the project was to propose an "overflow pumping station." The original proposal was for only a pump, and it was sized based on what I subsequently found to be incomprehensible criteria when Glenn and I again considered the problem at the beginning of this year. It was partially because we were all laboring under the impression that some type of pump was essential to this overflow system that it has taken us this long to propose a realistic first step solution to maintain the lake level. Glenn's report was rewritten several times because we first used the criteria you suggested in February and when we put the rainfall data, the river stage data and the pumping data together, there were virtually no scenarios when the pump would ever need to be operated. What we discovered this data did tend to show was that a gravity outfall system to the Green River would have been an adequate discharge/overflow mechanism in every case. To help you see this and to save you the effort of going through the same drudgery we have, I have compiled Table 1 which is a record of every occasion where the Green River has attained a stage above elevation 24 (3800+cfs) for 2 or more days since the beginning of the operation of Howard Hansen Dam, a period of about 25 years. The supporting data for this table is in the reports mentioned above and in the attached enclosures. I did not include every instance where the River exceeded this stage because it seemed obvious that occasionally the Corps dumps flows into the river in May or June which are not associated with any rainfall/flooding conditions and because there is virtually no probability that we would get 6 to 8 inches of rain in a single 24 hour period when a gravity discharge may be shut down. Some of the rainfall data is missing during the early sixties (the weather bureau did not have it available), but it would not appear to be consequential when you look at the occasions which are significant.

The following conclusions can be drawn from this table about the functioning of the River and its correlation with rainfall.

1. The river rises above the 24 stage during the winter months usually after the onset of a significant rainfall event of an inch or more. The lag between the event as recorded at Sea-Tac and the river rising at Auburn is at least a day, and more often two. That would put the river's response to the event at the lakes between at least two, and usually three days. Whether the response is caused by natural runoff from the event directly to the river or the operation of the Howard Hansen Dam I can only speculate. But I strongly suspect that it is a variable combination of the two. This phenomena is significant in that it shows that the gravity system would have time to discharge the rainfall collected in the lakes prior to the gravity discharge being shut down. What that in turn means is that the lake system will be at its lowest level thereby providing the maximum storage capacity in the system just prior to the gravity shutdown.
2. There were only six cases where the total rainfall exceeded 4 inches after the river went above elevation 24, only 2 cases where it exceeded 6 inches and one case where it hit 8 inches in the entire 25-years. This at first glance would appear to substantiate the criteria for 8.5" of storage. But if you look more carefully at the distribution of the rain over that period and consider that as the rain occurs, the lake rises and therefore the "shutoff" stage for gravity discharge rises as well -- up to 5800 cfs-- then it becomes clear that the total 8 inch rainfall would never have all been in the lake at one time.

TABLE 1.
(Periods of flow above 3800 cfs (elev 24) in Green River as measured at Auburn, Oct '60-Sept '85)

DATE(S)	DURATION (DAYS)	TOTAL RAINFALL (INCHES)	PRECIPITATION IN PREVIOUS 2 DAYS	DATE(S)	DURATION (DAYS)	TOTAL RAINFALL (INCHES)	PRECIPITATION IN PREVIOUS 2 DAYS
1- 6/ 1- 7-61	2	MISSING	MISSING	1-16/ 1-17-61	2	MISSING	MISSING
2- 6/ 2- 8-61	3	"	"	2-20/ 3- 2-61	11	"	"
12-24/12-26-61	3	"	"	1- 1/ 1- 5-62	5	"	"
1- 8/ 1-10-62	3	"	"	4- 8/ 4-12-62	5	"	"
5-12/ 5-14-62	3	"	"	11-20/11-22-62	3	"	"
11-26/11-27-62	6	"	"	12-30/ 1- 4-63	2	"	"
2- 3/ 2- 5-63	3	"	"	4-13/ 4-16-63	4	"	"
1- 2/ 1- 3-64	2	"	"	1-25/ 1-26-64	2	"	"
5-21/ 5-22-64	2	"	"	6-17/ 6-18-64	2	"	"
12- 1/12- 4-64	4	0.14	2.18	12-23/12-24-64	2	0.26	1.96
1-27/ 2- 6-65	11	3.08	MISSING	2-17/ 2-20-65	4	0.05	0.02
3-23/ 3-24-65	2	0.05	MISSING	4-20/ 4-21-65	2	0.48	0.02
5- 6/ 5- 8-66	3	0.76	0.00	12-13/12-15-66	3	1.42	2.15
12-17/12-21-66	5	0.81	0.95	1-12/ 1-21-67	10	3.64	0.62
1-28/ 1-30-67	3	0.53	1.84	12-25/12-29-67	5	0.46	0.31
1-20/ 1-23-68	4	0.87	1.63	2-19/ 2-25-68	7	1.71	2.08
12- 4/12- 5-68	2	0.12	2.00	1- 5/ 1- 9-69	5	1.73	0.57
5- 9/ 5-11-69	3	0.00	0.00	1-19/ 1-27-70	9	3.87	1.23
2-17/ 2-18-70	2	0.32	0.59	1- 9/ 1-11-71	3	0.61	0.65
1-19/ 1-21-71	3	0.36	0.01	1-24/ 1-28-71	5	1.26	0.05
1-30/ 2- 2-71	4	0.08	0.00	2-11/ 2-16-71	6	1.35	0.69
5- 4/ 5- 5-71	2	0.09	MISSING	5-12/ 5-13-71	2	0.26	0.00
11- 4/11- 5-71	2	MISSING	MISSING	12- 9/12-10-71	2	0.24	1.64
1-20/ 1-24-72	5	3.61	1.48	2-13/ 2-20-72	8	2.03	0.66
3-28/ 3-23-72	25*	8.02*	2.57	5-14/ 5-15-72	2	0.07	0.00
12-21/12-30-72	9	4.74	0.78	1-14/ 1-16-73	3	0.77	2.00
12-16/12-18-73	3	0.81	1.63	1-15/ 1-19-74	5	2.40	1.95
1-24/ 2- 5-74	12	3.01	0.14	3-17/ 1-18-74	2	0.06	0.00
6- 4/ 6- 8-74	5	0.63	0.46	6-12/ 6-15-74	4	0.00	0.00
12-20/12-23-74	4	0.75	0.46	1-14/ 1-26-75	13	1.80	2.47
3- 2/ 3- 4-74	3	0.26	1.20	5-11/ 5-16-75	6	0.01	0.30
10-30/11- 3-75	5	0.64	1.81	11-25/11-28-75	4	0.57	0.15
12- 1/12-13-75	13	4.21	0.46	12-27/12-31-75	5	0.35	2.00
1-15/ 1-21-76	7	0.49	1.37	1-27/ 1-28-76	2	0.25	0.70
11-26/12-17-76	22*	6.50*	1.48	2- 7/ 2- 8-79	2	0.23	0.95
2-12/ 2-13-77	2	0.80	1.03	3- 6/ 3- 8-79	3	0.03	1.06
12-15/12-20-79	6	4.72	2.99	2-28/ 2-29-80	2	0.32	1.10
11-09/11-10-80	2	0.17	0.84	12-16/12-17-80	2	0.00	0.01
12-23/12-31-80	9	4.35	0.81	2-13/ 2-21-81	9	2.86	1.15
1-16/ 1-17-82	2	0.82	0.58	1-24/ 1-28-82	5	0.99	1.64
2- 2/ 2- 3-82	2	0.24	0.43	2-14/ 2-23-82	10	3.72	1.95
3-11/ 3-12-82	2	0.24	0.53	4-12/ 4- 5-82	2	0.39	1.66
1- 5/ 1-12-83	8	2.61	1.76	11-16/11-17-83	2	0.78	1.06
1- 4/ 1- 7-84	4	0.25	1.23	1-24/ 1-29-84	6	1.42	0.40
4- 2/ 4- 4-85	3	MISSING	MISSING				

* Indicates major event

October 6, 1986

In fact, the last 9 or 10 days of the total 25 days the river was above elevation 24 were at flows less than 5800 cfs and almost one inch of the 8 inches total fell during that period. Consider also there were several days during the other 15 days in that period where the river almost receded to the 24 foot stage. When you look at Glenn's outflow curve for the gravity system, it becomes obvious that a considerable portion of the storage would have also been evacuated during those periods. So a closer look at all the data would tend to cast great doubt that we ever would have needed the 8.5" storage. This is not to say that a circumstance might not arise in the future which would require more storage than in the past, but it seems conclusive that the past 25 years have experienced some fairly severe conditions and that amount of storage never would have been used in the Lakes system with a gravity outfall.

3. Occasions in the data occur where there has been no rain before or after the river rises to levels corresponding to flows of 4000-6000 cfs both during the winter and the spring. The only explanation for this is that the Corps must, for whatever reason, consider it necessary to dump water from the Dam. These periods run between 2 to 6 days and present no hazard to the Lakes development.

Based on all of the above reports, data, conclusions, etc., our current status is as follows:

A. We have provided storage in the Lakes for the first Plat (Division 1) of at least 12" (as opposed to the 8.5" required) between the 24 to 28 contours and probably more like 18" to 20 " if you extend the maximum storage elevation to 30 (one foot below the lowest building finished floor). Considering that the average annual rainfall is 35" more or less, and that the Todd report and our observations show the groundwater to flow to the river, one can only conclude that the current plat meets or exceeds the City's standards for stormwater control. Until we install the gravity outfall, the groundwater flow is the system's outlet.

B. Plans have been submitted for the gravity outflow system and the calculations to support the system's capacity are in Glenn's report. I think there may be some slight modifications to the plans submitted as I discussed with you the other day, but the plans are certainly adequate to figure a bond amount. I don't believe that this outflow system was ever a requirement of the plat, but we are not opposed to acknowledging the future need for the system and bonding it now as long as the process does not hold up the recording of the plat.

C. We believe that the lake, as it will be expanded in the next few months, will also have more than adequate capacity for the next phase of the development, at least that portion now proposed as "Island Park Apartments".

Don Wickstrom/Terry Ferguson

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October 6, 1986

WHERE WE GO FROM HERE

The next two actions I think we need to take are obvious. First we have to complete the plans for the gravity outflow system and begin to route them to the appropriate agencies for approval. I think at the least we need to go through shoreline management, the Corps of Engineers, King County, and perhaps others. That process could easily take the next six to eight months. I would approach this on the assumption that you agree that the case has not been made that a pumped discharge to the Green River is essential. Bear in mind that we always have the option to install a pump which would discharge to the P-channel system (or provide for one) or to the Green River at some future stage of lake construction. What will probably determine this is the reaction of the lake level to groundwater fluctuations determined after the gravity discharge is installed -- and this is the second action. Since the installation of a gravity outfall which maintains the lake level at 24 will have a substantial and quantitatively unpredictable effect on the groundwater levels within the project, we must first install the outfall. What we need to test to be able to accurately determine the storage required and therefore the necessity for pumping is the infiltration rate into the lakes at various river stages and lake stages. Once we can draw these rating curves, and the outflow curves from the gravity system, we will be in a position to finally make an assessment of the total lake area needed, total storage volume, pump(s) needed, if any, location of outfalls (pumped or otherwise), and whether another gravity outfall might be needed at the north end of the lake.

To get to a point where we can make those decisions based on real data instead of guesses, I suggest we do the following.

1. Complete the current Lake construction and accurately determine the final area/volume vs depth characteristics. This is programmed for the next several months.
2. Complete, approve and install the gravity outfall system. I presume the construction will occur next summer after the groundwater table has fallen below elevation 22.
3. Design and install the groundwater refresh well and pump system. This will also require governmental approval (DOE water withdrawal permit). This action will also be completed by the end of next summer. We will use this system to refill the lakes after the gravity system has been installed.
4. Run tests during the winter of 87-88 to establish a rating curve for the gravity outfall system. I can see these tests taking the form of:
 - a. River low flow, shutoff gravity outflow, fill lake to 28 elev and determine rate of infiltration as the lake returns to elevation 24.

Don Wickstrom/Terry Ferguson

Page 8

October 6, 1986

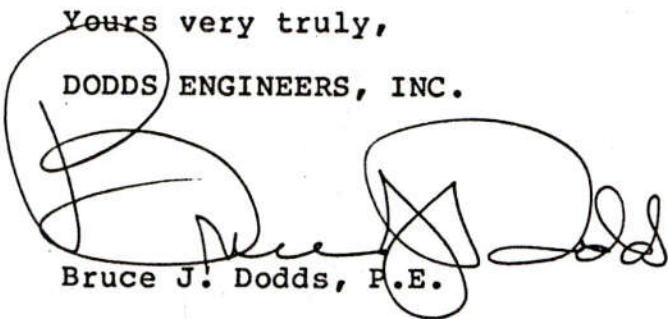
- b. River low flow, fill lake to 28 with gravity outflow shut, and establish a rating curve for gravity outflow at decreasing head by opening gravity outflow.
- c. River low flow, shutoff gravity outflow and determine rate of groundwater inflow to lake, i.e. rate of rise in lake level where surrounding groundwater table is above elevation 24.
- d. River high flow (above elev 24), same as (c).

With that information we should be able to route storms and groundwater through the lake system using realistic characteristics. At that time we can make a final determination on total area/volume necessary, pump(s) and their capacity, and additional gravity outflows and the receiving bodies of these discharges. To make these decisions prior to having this data would be to base the decisions on pure guesses. It would be foolish to do this when we are able to acquire the data over time and the interim systems will be ultimately essential and necessary to the overall project and, in all probability, adequate since they will be serving less than the total project.

I trust this gives you a better picture of the direction we intend to take with this project. If you agree that this is the most reasonable approach, then I presume that we agree that all that should have been done regarding the stormwater system on Division 1 of the plat has been completed. If you wish to discuss this further, please call.

Yours very truly,

DODDS ENGINEERS, INC.



Bruce J. Dodds, P.E.

cc: James Summers
Pork Fischer
Gary Keeley
Pete Gulick
John Phillips
Harlan Glenn w/encl.

TRANSMITTAL

TO Department of Ecology DATE 06/11/98 JOB NO. 94133
3190 - 160th Avenue SE ATTN: Buck Smith
Bellevue, WA 98008-5452 REF: The Lakes @ Kent
Water Right G1-25102P

MAIL ☒ DELIVER ☐ PICKUP ☐
TRANSMITTED FOR: YOUR USE ☒ PER REQUEST ☒ INFORMATION ONLY ☐
ACTION REQUIRED: PROCESSING ☒ REPLY ☐ RETURN ☐ NONE ☐

QUANTITY	DATED	DESCRIPTION
----------	-------	-------------

1		Check for \$5.00 to D.O.E.
1		Check for \$9.00 to King County Auditor

COMMENTS

Per our conversation, please complete processing. Certificate should be mailed to Tim Ambre,
Kappes Miller Management agent for: The Lakes at Kent Community Organization
P O Box 759
Kirkland, WA 98093-0759

RECEIVED
JUN 15 1998
NWRO-WR
DEPT OF ECOLOGY

CC:

BY:

Bruce A. Dodds, P.E., L.S.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

February 28, 1995

County Auditor
King County Recording Dept.
500 4th Avenue Room 311
Seattle, WA 98104

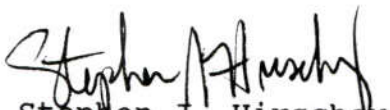
Dear Sir or Madam:

Enclosed is Certificate of Water Right No. G1-25102 C and a check in the amount of \$8.00 to cover the cost of recording.

After recording, please forward to:

Lakes at Kent Community Organization
12737 Bel-Red Road #200
Bellevue, WA 98005

Sincerely,


Stephen J. Hirschey
Section Supervisor
Water Resources

SJH:cw
Enclosures

cc: Lakes at Kent, Tim Ambre

DO NOT FILM



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

MEMORANDUM TO FILE

Date: 3/2/94	By: PAT	Page of	File# 6125102
Program/Activity:			
Subject: C.C.			
Attendance/with: TIM ABB AMBRE Phone #:			

NOTES : TIM IS HANDLING THIS PROPERTY & WILL TRY TO GET CC, PERMIT PROVISOS, ETC. DONE SO CERT CAN ISSUE - TALKED VIA PHONE ABOUT WHAT NEEDED DOING - SENT PACKET OF STUFF.

DO NOT FILM

FOLLOW-UP ACTION:



February 3, 1995

DEPARTMENT OF ECOLOGY
Northwest Regional Office
Water Resources
Attention: Dorothy Glenn
3190 160th Avenue Southeast
Bellevue, Washington 98008-5452

DO NOT FILM

RE: Affidavit for Proof of Appropriation of Water #G1-25102P

Dear Ms. Glenn,

Please help us get the water rights permit certificate issued in the correct name of the Lakes at Kent Community Organization rather than Centron Properties Corporation.

The Centron was the developer of the property who built and created the Lakes at Kent back in 1987. The lakes existed in 1987 and Centron drilled the wells. Enclosed are copies of the recorded Declaration, Bylaws, certificate of Incorporation, Agreement Concerning Undeveloped Property, and a quit claim deed that were prepared and recorded by Centron to establish the Lakes at Kent. These documents show that Centron conveyed their interests over to the Lakes at Kent Community Organization.

The developer, Centron, declared bankruptcy several years ago and is no longer in business. They owed millions of dollars to suppliers, contractors, and to the state of Washington. Due to the bankruptcy, the records at Kappes Miller Management are incomplete.

If you need additional assistance or background information, please contact me at (206) 646-2776 extension 208, or Pat Locke in your Department at (206) 649-7077.

Sincerely,

Tim Ambre

KAPPES MILLER MANAGEMENT
Managing Agent for the Lakes at Kent Community Organization

Enclosures

WHEN RECORDED, RETURN TO:

Peter V. Gulick
200 Cascade Building
855 - 106th Avenue N.E.
Bellevue, WA 98004

DO NOT FILM

RECD F
CASHSL

5.00

40731 2
- 445.00

KING COUNTY
NO EXCISE TAX
FEB 6 1987
E0925315

QUIT CLAIM DEED

The Grantor, CENTRON PROPERTIES CORPORATION, which acquired title as Arrow Development Corporation, a Washington corporation, in consideration of One Dollar and other considerations in hand paid conveys and quit claims unto The Lakes At Kent Community Organization, a nonprofit Washington corporation, the following described real property situate in King County, Washington, together with any interest therein which the Grantor may hereafter acquire:

Tracts "L-1" and "L-2" and Tract "A," The Lakes At Kent Division No. 1, according to the plat recorded at Volume 136 of Plats, page 41 to 45 records of King County, Washington.

Tracts "L-1" and "L-2" are hereby identified as a part of the lake system as referred to in the Declaration of Covenants for The Lakes At Kent, as recorded under King County Recording No. 8702041181. Grantor reserves the right to enter onto any part of the described real property in order to operate facilities and improvements located thereon, to make additional improvements thereto and to maintain, repair, reconstruct and replace any facilities and improvements now or hereafter located thereon, provided that any improvements made to the property shall not interfere with or be inconsistent

RECEIVED THIS DAY
FEB 4 11 57 AM '87
KING COUNTY
RECORDS

8702060781

with the provisions of and interest of the above mentioned Declaration of Covenants for The Lakes At Kent.

DATED: January 19, 1987.

CENTRON PROPERTIES CORPORATION

By [Signature]
Chairman of the Board

STATE OF WASHINGTON
COUNTY OF KING

I certify that I know or have satisfactory evidence that JAMES W. SUMMERS signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the Chairman of the Board of CENTRON PROPERTIES CORPORATION to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: January 19, 1987.

[Signature]
Notary Public
My appointment expires: 9-1-88



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

July 28, 1993

Mr. John Aduckus
c/o Kappes Miller Management
PO Box 759
Kirkland, WA 98083-0759

DO NOT FILM

Dear Mr. Aduckus:

Subject: Ground Water Permit G1-25102P

Per our phone conversation today, I am enclosing a copy of the water right permit, the letter of July 30, 1992 explaining what needs to be done, and the necessary forms and information bulletins.

Updating last year's letter, a \$10.00 back extension fee is needed to bring the permit into good standing through December 14, 1993.

Please call me at (206) 649-7093 if you have any questions.

Sincerely,

Pat Locke
Water Resources

PL:pl
Enclosures



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

July 30, 1992

Mr. John Aduckus
1 Lake Bellevue Drive, Suite 200
Bellevue, Washington 98005

DO NOT FILM

Dear Mr. Aduckus:

Re: Ground water permit G1-25102P, Centron Properties

We understand you are the manager for The Lakes development in Kent.

A water right permit was issued to Centron Properties in December 1990 for 3 wells to augment lake levels within the complex. A copy of the permit is enclosed.

In order to obtain the certificate of water right, two items need to be completed:

First: The enclosed Construction Notice form must be completed showing that construction of the project is complete.

Second: The enclosed Proof of Appropriation form must be completed, notarized, and returned to this office along with two separate certificate recording fees-\$5.00 payable to Department of Ecology and \$8.00 payable to the King County Auditor.

As the permit was to be finalized by December 14, 1991 a \$5.00 back extension fee is needed to bring the permit into good standing up through December 14, 1992.

Sincerely,

A handwritten signature in cursive script, appearing to read "Janet Jorg".

Janet Jorg
Water Resources

JJ
Enclosures

CHRISTINE O. GREGOIRE
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

July 29, 1991

Centron Properties Corporation
11808 Northup Way, Suite 310
Bellevue, WA 98005-1922

Re: Water Permit No. G1-25102P

DO NOT FILM

Dear Sir or Madam:

In reviewing your permit, we find you have not submitted the completion of construction notice.

If the work has been completed on this project, please complete the enclosed form. If not, you must request an extension of one year. Please submit the statutory extension fee of \$5.00 payable to the Department of Ecology.

By statute, projects under permit must be pursued with diligence, and good cause for granting an extension must be shown. A report of progress made during the past year must be included with your request for extension.

Sincerely,

Water Resources
Northwest Regional Office

WR:dg
Enclosure



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

October 3, 1991

CERTIFIED MAIL

DO NOT FILM

Centron Properties Corporation
11808 Northup Way, Suite 310
Bellevue, WA 98005-1922

Re: Water Permit No. G1-25102P

Dear Sir or Madam:

In reviewing your permit, we find you have not responded to our letter of July 29, 1991 requesting the completion of construction notice.

If the work has been completed on this project, please complete the enclosed form. If not, you must request an extension of one year. Please submit the statutory fee of \$5.00 payable to the Department of Ecology.

By statute, projects under permit must be pursued with diligence, and good cause for granting an extension must be shown. A report of progress made during the past year must be included with your request for extension.

If you do not submit the enclosed form or show sufficient cause for an extension within sixty (60) days from receipt of this letter, an order of cancellation will be issued.

Sincerely,

Water Resources
NORTHWEST REGIONAL OFFICE

WR:dg
Enclosure

PS Form 3800, June 1990

Sent to	
Centron Properties Corp.	
Street & No.	11808 Northup Way Suite 310
P.O., State & ZIP Code	Bellevue, WA 98005-1922
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	10/2/91

Certified Mail Receipt
 No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also want to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Centron Properties Corporation
 11808 Northup Way, Suite 310
 Bellevue, WA 98005-1922

4a. Article Number

P 796 788 762

4b. Service Type

- | | |
|---|--|
| <input type="checkbox"/> Registered | <input type="checkbox"/> Insured |
| <input checked="" type="checkbox"/> Certified | <input type="checkbox"/> COD |
| <input type="checkbox"/> Express Mail | <input checked="" type="checkbox"/> Return Receipt for Merchandise |

7. Date of Delivery

10-9-91

5. Signature (Addressee)

J. Rispoli

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

DO NOT FILM

WHEN RECORDED RETURN TO:

Peter V. Gulick, P.S.
200 Cascade Building
888 - 106th Avenue, N.E.
Bellevue, WA 98004

89/03/31

#1240 B

RECD F 11.00

CASHSL

***11.00

55

AGREEMENT CONCERNING
UNDEVELOPED PROPERTY

CENTRON PROPERTIES CORPORATION, a Washington corporation (herein called Centron) was the owner of the real property situated in King County, Washington known as The Lakes and generally described on the Master Plan dated April 3, 1987 (herein referred to as the Entire Proposed Development). Centron was the owner of the real property located in King County, Washington commonly known as The Lakes, a portion which has been developed and sold (including the Island Park at the Lakes parcels referred to below). The remainder of The Lakes that is still owned by Centron is described on Exhibit A attached hereto and incorporated herein (the "Undeveloped Property") and is subject to the covenants contained herein.

This Agreement Concerning Undeveloped Property consists of certain covenants made by Centron solely and exclusively for the benefit of property located in King County, Washington commonly known as the Island Park at the Lakes and more particularly described in Exhibit B attached hereto and incorporated herein ("Island Park"). No real property other than Island Park is intended or shall be deemed to be benefited hereby, nor shall the owner of any such real property have any rights, direct, indirect, or derivative, hereunder.

Incident to the development of the Lakes project, Centron has organized THE LAKES AT KENT COMMUNITY ORGANIZATION, a Washington nonprofit corporation (herein referred to as the Community Organization). Centron has conveyed certain properties and rights to the Community Organization for the benefit of the portions of the Entire Proposed Development that have been developed and that will be developed. In addition, Centron has subjected the currently developed portions of the Entire Proposed Development to certain Declaration Of Covenants For The Lakes At Kent as recorded under King County Recording No. 8702041181 and Declaration Of Covenants And Easements For The Lakes For Short Plat Division No. 2, as recorded under King County Recording No. 8706041594 and the Agreement Concerning Assessments, as recorded under King County Recording No. 8712311322 (these instruments herein referred to as the Declaration). Centron has reserved the

8903311240

STW 17593-B

right to subject additional lands within the Entire Proposed Development to the Declaration and has provided for the maintenance of properties by the Community Organization and a method of assessment of dues and charges against properties made subject to the Declaration to pay for the costs of operation, the maintenance, repair and improvement of those properties. In order to facilitate the foregoing objectives and obligations, Centron agrees as follows:

1. Centron shall use its best efforts to minimize water run-off from future construction within the Entire Proposed Development into the existing manmade lakes.
2. Any improvements which Centron conveys to the Community Organization shall be substantially completed at time of such conveyance. In addition, Centron warrants to the Community Organization that such improvements (or any improvements or work undertaken by Centron on property owned by the Community Organization) will be free of workmanship and materials defects for a period of one (1) year following such conveyance (or, in the case of improvements or work by Centron on property owned by the Community Organization for a period of one (1) year following the substantial completion of such work). If written notice of any such defects is given Centron within thirty (30) days following the discovery within such one (1) year period of such defect then Centron shall immediately commence and diligently prosecute the repair of said defects.
3. Within (a) thirty (30) days of the date hereof, Centron shall at its sole cost and expense apply for and obtain a water permit from the City of Kent, and (b) within ninety (90) days from the date hereof Centron shall at its sole cost and expense connect with the City of Kent water system (including without limitation obtaining any necessary easements in connection therewith). Such water permit and connection shall permit the Community Organization to purchase water from the City of Kent in an amount sufficient to produce a flow of 110 gallons per minute (the "Required Flow Capacity") for use in maintaining Tracts L-1* and L-3** (the "Existing Lakes") at the 24-foot design level through the period of May through September.
4. Centron shall at its sole cost and expense promptly commence and diligently prosecute the reopening and testing of the original existing well (the "Original Well") which was drilled pursuant to Application to

*as shown on the Lakes at Kent Division No. 1

**as shown on the Lakes Short Plat Division No. 2

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Appropriate Public Waters No. G1-25102 dated September 22, 1987. Centron shall conduct water quality tests on the water from such well (including without limitation tests for all pollutants) at least as extensive as the tests conducted by Golder Associates on the most recent well on the Undeveloped Property (the "Required Tests"). If the Original Well is, in Centron's judgment, of sufficient capacity and water quality, Centron shall use its best efforts to complete the permit and certification procedure of the State of Washington.

5. If the Original Existing Well does not produce the Required Flow Capacity or water quality, Centron shall at its sole cost and expense drill additional wells and conduct the Required Tests on the water therefrom (up to a maximum of two additional wells) until there exist well(s) producing water of suitable quality at the Required Flow Capacity. Centron shall at its sole cost and expense apply for and use its best efforts to obtain permits and certificates for such wells in accordance with the procedures of the State of Washington.
6. Water from all wells drilled pursuant to Paragraphs 4 and 5 above or any other wells drilled on the Undeveloped Property, up to the Required Flow Capacity, shall first be used to maintain the Existing Lakes at the 24-foot design level, and any conveyance of such wells to the Community Organization shall so provide.
7. Centron shall, as soon as reasonably practical after completion of each well referred to in Paragraphs 4 and 5 above (including the issuance of permits and certificates), but in no event later than one hundred twenty (120) days after the date of such completion (a) complete a transmission line from such well to the Existing Lakes and a pump at the well, both sufficient to transmit the water generated by the well to the Existing Lakes, (b) either (i) provide a perpetual easement for the benefit of the Community Organization covering such well and transmission line or (ii) provide a surveyed property description for such well and transmission line and (c) convey the easement rights or deed interest covering such well and transmission line to the Community Organization. Within one hundred twenty (120) days after the date hereof, Centron shall provide a perpetual easement or convey the outflow pipe for the Existing Lakes to the Community Organization, as provided in the preceding sentence. Centron shall not convey the easement rights or deed interest as "Limited Use Facilities" (as defined in the Declaration).

8903311240

8. Centron shall design and maintain lakes to be built in the future in the Undeveloped Property in such a manner that a water level at the 24-foot design elevation is maintained, and shall be maintained, in the existing lakes. Centron shall use its best efforts to so design and maintain such future lakes so that (a) any water costs to the Community Organization from the City of Kent are minimized, and (b) their design level can be maintained from a dependable source of water.
9. If a lake outflow pump is required, Centron will, at its sole costs and expense, install the same.
10. Nothing contained herein is intended to amend, nor shall be deemed to amend, the Declaration.
11. The Undeveloped property shall be released from and no longer be subject to individual covenants contained herein immediately upon the complete performance of each covenant.
12. Portions of the Undeveloped Property upon which all improvements have been substantially completed and which are sold to third-party, independent purchasers by deed or transfer of partnership interests shall be released from, shall not be subject to, and shall be conveyed free and clear of, this Agreement and the covenants contained herein.
13. Any remaining Undeveloped Property shall be released from and no longer be subject to this Agreement upon completion of The Lakes project in accordance with the Master Plan dated April 3, 1987 approved by the City of Kent.
14. Any release under Paragraphs 11 through 13 above (a "Release") shall be deemed to have occurred and shall be effective automatically upon satisfaction of the conditions to such Release set forth in said Paragraphs; provided, that Centron shall have the right, without in any manner limiting the timing or effectiveness of a Release, to file of record a written instrument evidencing such Release at any time following full satisfaction of all conditions to such Release, in form and content acceptable to Centron in its discretion, and the then-owner of Island Park shall be obligated, at Centron's request, to execute any such instrument in proper form for recording.
15. Notwithstanding anything in Paragraphs 11 through 14 above to the contrary, the personal obligation of Centron to perform the covenants contained herein shall

not be terminated upon or otherwise affected by the release of any or all of the Undeveloped Property from this Agreement.

CENTRON PROPERTIES CORPORATION,
A Washington Corporation

By: William C. Summers
William C. Summers, its President

By: Paul K. Summers
Paul K. Summers, its Secretary

DATED: MARCH 31, 1989

STATE OF WASHINGTON
COUNTY OF KING

I certify that I know or have satisfactory evidence that WILLIAM C. SUMMERS and ~~PAUL K. SUMMERS~~ signed this instrument, on oath stated that they were authorized to execute the instrument and acknowledged it as the President ~~and Secretary, respectively~~, of Centron Properties Corporation, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: March 30th, 1989

L. Ann Maxwell
Notary Public for State of Washington
Residing in Seattle
My appointment expires: 4/17/90

8903311240

EXHIBIT A

Those portions of Sections 14 and 15, Township 22 North, Range 4 East, W.M., and of the David A. Neely Donation Land Claim No. 37, all in King County, Washington, described as follows:

Beginning at the south quarter corner of said Section 14;
 thence south $88^{\circ}59'16''$ east, along the south line thereof, 1,317.07 feet to the southeast corner of the southwest quarter of the southeast quarter thereof;
 thence north $00^{\circ}52'51''$ east, along the east line of said subdivision, 1,322.30 feet to the northeast corner thereof;
 thence north $89^{\circ}01'49''$ west, along the north line of said subdivision, 881.05 feet to an intersection with a line parallel with and 436.2 feet easterly, as measured at right angles, from the north-south centerline of said Section 14;
 thence north $00^{\circ}52'22''$ east, along said parallel line, 903.78 feet;
 thence south $89^{\circ}01'31''$ east 881.18 feet to the east line of the northwest quarter of the southeast quarter of said Section 14;
 thence north $00^{\circ}52'51''$ east, along said east line, 418.60 feet to the east-west centerline of said Section 14;
 thence north $89^{\circ}04'22''$ west, along said centerline, 1,317.44 feet to the center of said section;
 thence north $00^{\circ}52'22''$ east, along the north-south centerline thereof, 587.81 feet, more or less, to the southerly right-of-way margin of South 228th Street;
 thence generally westerly, along said margin and the southerly right-of-way margin of Russell Road to the south line of the north 287.83 feet, as measured at right angles, of the south one-half of said David A. Neely Donation Land Claim No. 37, said 287.83 feet being equal to 310 feet as measured along the east side of road as described in deed recorded under King County Auditor's File No. 4017151;
 thence leaving said southerly right-of-way margin and running north $89^{\circ}13'00''$ west, along said south line, 152.63 feet to the easterly bank of the Green River;
 thence generally southerly and southeasterly, along said easterly bank to a point on the south line of said Section 14;
 thence leaving said easterly bank and running south $89^{\circ}05'32''$ east, along said south line, 968.18 feet to the point of beginning;
 EXCEPT the south 30 feet thereof as conveyed to the City of Kent for street purposes by deeds recorded April 12, 1968, under King County Auditor's File No. 6332263 and 6332264;
 AND EXCEPT any and all portions thereof conveyed by Centron Properties Corporation, its successors and/or assigns, to any third party prior to the date of the instrument to which this legal description is attached.

EXHIBIT B

All that real property situated in the county of King,
state of Washington, and described as follows:

Lots 1 and 2, The Lakes Short Plat, Division Number 2, City of Kent
Short Plat Number SP-86-13 recorded under King County Recording
Number 8706041575, being a portion of the south half of Section 14,
Township 22 North, Range 4 East, W.M., in King County, Washington,
and of the David A. Neely Donation Land Claim No. 37, all in King
County, Washington;

TOGETHER WITH an easement for ingress, egress and utilities for the
benefit of Lot 1, The Lakes Short Plat Division No. 2, which
easement is over, across and under the following described portion
of Tract "L-3":

A strip of land 30.00 feet in width having 15.00 feet on each side
of the following described centerline:

Beginning at a point on the north line of Tract "L-3" of said short
plat which is south 89° 04' 02" east 98.89 feet from the northwest
corner of said Tract "L-3";
thence south 11° 30' 00" east 47.54 feet, more or less, to the
north line of Lot 1 of said short plat and the terminus of the
herein described centerline;

The sidelines of said easement are extended northerly and southerly
to the north line of said Tract "L-3" and the north line of said Lot
1, respectively, as disclosed by Quit Claim Deed recorded under
recording Number 8706041595;

AND TOGETHER WITH the 30 foot access easement across Lot 2 and Tract
"L-3" of the Short Plat for Lakeside Boulevard East to Lot 1 of the
Short Plat is hereby declared to be a private nonexclusive easement
for the purpose of ingress, egress and utilities for the benefit of
Lot 1 of the Short Plat.

As disclosed by Declaration of Covenants and easements recorded
under Recording Number 8706041594;

AND

Lot 5, The Lakes at Kent, Division 1, according to the plat thereof
recorded in Volume 136 of Plats, pages 41 through 45, inclusive, in
King County, Washington.

8903311240

RECEIPT

170725

WASHINGTON STATE

DEPARTMENT OF ECOLOGY

11-8, 1990

RECEIVED FROM

Primus Development Corp.

Bellevue

Twenty and no/100

DOLLARS

20.00

FUND:

General

Rec. Rev.

Basic Data

Other

Cash

SOURCE:

Water Code

Publications

Adjudications

Refunds

Check

Per. and Lic.

Investments

Registration

Other

M.O.

Permit Fee

GT 25/02

CK# 1623

By

J. M. Perkins

DO NOT FILM

Thank You

Christine O. Gregoire

ANDREA BEATTY RINKER
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Avenue N.E. • Redmond, Washington 98052-5301 • (206) 867-7000

May 23, 1990

Resend 8/14/90

Centron Properties Corp.,
3025 112th Ave., N.E.
Bellevue, Wa. 98004

DO NOT FILM

Re: Ground Water Application No. G1-25102

Your application has been approved and a permit will be issued in accordance with the enclosed Report of Examination upon payment of the statutory fee of \$ 20.00. Please make your check payable to the Department of Ecology.

This Letter and enclosed Report of Examination constitute our determination and order. Chapter 43.21B RCW provides that any person who feels aggrieved by such an order may submit an appeal to the Pollution Control Hearings Board of Washington, 4224 - 6th Ave., Bldg. 2, Rowsix, Olympia, WA 98504, with a copy to the director of the Department of Ecology, Mail Stop PV-11, Olympia, WA 98504, within 30 days of receipt of this order. Procedures for requesting a hearing may be obtained from this department.

Please send your permit fee within 30 days.

Sincerely,

A handwritten signature in red ink, appearing to read "Anita Isaac".

Resource Management
NORTHWEST REGIONAL OFFICE

Enclosure

COMPLETE THIS FORM ONLY IF THIS APPLICATION INCLUDES IRRIGATION
AS A USE.

RECEIVED
SEP 22 1987
DODDS ENGINEERS, INC.
JOB NO. _____

In order to implement the provisions of Initiative Measure Number 59, the Family Farm Water Act which was passed by the voters on November 3, 1977, we must ask the following questions:

Does the total number of acres in which you have controlling interest in the State of Washington exceed 2000 acres for the following three categories:

1. Lands that are being irrigated under water rights acquired after December 8, 1977.
2. Lands that may be irrigated under applications now on file with the Department of Ecology.
3. Lands that may be irrigated under this application.

YES

☐

NO

☒

DO NOT FILM

Please sign and return

Dan L. J. J. J.

(signature of landowner)

9/23/87

(date)

RECEIVED
SEP 22 1987
DEPARTMENT OF ECOLOGY
NORTHWEST REGION



DODDS ENGINEERS, INC.
CIVIL ENGINEERING SURVEYING PLANNING

September 14, 1987
DEI Project No. 78139

C425102

Mr. Jim Gaffron
Centron
Box C90001
Bellevue, Washington 98009

Re: Water Rights Permit, The Lakes

Dear Jim:

Enclosed please find a partially completed application form for the subject permit and the attachments which should be included with that permit. Note that I have filled in certain information in green, left other boxes marked in yellow for you to complete, and one box marked in orange for the well driller to complete. When you have completed this application and it has been signed, please return it to me with the application fee and I will see that it is delivered to the Department of Ecology across the street.

Please call if you have any questions.

Yours very truly,

DODDS ENGINEERS, INC.

DO NOT FILM

Bruce J. Dodds, P.E.

BJD/jct
Enclosure

RECEIVED
SEP 22 1987

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

ANDREA BEATTY RINIKER
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Avenue N.E. • Redmond, Washington 98052-5301 • (206) 885-1900

November 25, 1987

Centron Properties Corporation
3025 112th Ave., N.E.
Bellevue, Washington 98004

DO NOT FILM

RE: Water Application No. G1-25102

Your application for the appropriation of water has been assigned the above-referenced number. Please refer to this number in future correspondence.

Enclosed is a notice of your application which must be published once a week for two consecutive weeks in a qualified legal newspaper of general circulation in King County. A list of these newspapers in your county is enclosed.

Please read the notice carefully to make sure it is correct. Should you find an error, please return the notice to your office for correction.

You should contact a newspaper regarding publication of your notice as soon as possible. When you receive the affidavit of publication from the newspaper, please forward it promptly to us. This will shorten the time for further processing of your application.

Sincerely,

SB/

Resource Management

Enclosure

ECY 040-1-6
Rev. 5/85

RECEIPT

WASHINGTON STATE DEPARTMENT OF ECOLOGY

154999

10-28, 1987

RECEIVED FROM

Dodds Engineers, Inc.
Ten dollars and no/100

Belleve

DOLLARS

10.00

FUND:

General ☒

Rec. Rev. ☐

Basic Data ☐

Other ☐

Cash ☐

SOURCE:

Water Code ☒

Publications ☐

Adjudications ☐

Refunds ☐

Check ☒

Per. and Lic. ☐

Investments ☐

Registration ☐

Other ☐

M.O. ☐

By

Marlene Thyle

G125102

Thank You

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-14Q2
Map ID	14Q2
North	145697.025
East	1287625.712
Owner	Centron Properties / Island Park
Address	6200 S 236th St
Well Depth	501
Surf. Elev.	35
Screen Int.	477-501
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY
WL Ft BGS	2
Use³	PIU
Source of Info	ECY
Notes	Drilled in 1988
Operable?	Likely
Accessible	Yes
Well Type	Group D
Loc Quality⁴	A
Old Inventory #	
Completion Elevation	-466
Water Level Elevation	33

WATER WELL REPORT

STATE OF WASHINGTON

Water Right Permit No. _____

Start Card No. 003550

(1) OWNER: Name Centron Properties Corp., Island Park Address approx 6200 South 236th Kent

(2) LOCATION OF WELL: County King SU & SE & Sec 14 T. 22 N. R. 4E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 6200 South 236th Kent

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐
☐ DeWater ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6-8 inches.
Drilled 501 feet. Depth of completed well 501 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 8 " Diam. from 0 ft. to 270 ft.
Welded ☒ 6 " Diam. from 0 ft. to 484 ft.
Liner installed ☐
Threaded ☐ Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson

Type stainless steel Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.

Material used in seal puddling clay - cement

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 2 ft. below top of well Date 9-2-88

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap. valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? _____

Yield: 30 gal./min. with 125 ft. drawdown after 2 hrs.

" " " " " "

" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time Water Level Time Water Level Time Water Level

Date of test _____

Boiler test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Surface	0	3
Brown sandy clay	3	10
Gray sand - fine	10	30
Gray silty sand - fine	30	60
Gray silty sand some gravel	60	68
Black gray fine sand silt	68	110
Gray silty fine sand	110	130
Gray clay	130	182
Gray silty sand - fine	182	270
Gray clay	270	380
Gray silt	380	400
Gray sand	400	445
Gray clay	445	475
Gray sand - gravel	475	497
Gray handpacked gravel - clay	497	501

Screen Assembly 24'		
Riser - 15 packer	477	484
10 slot	484	489
20 slot	489	494
40 slot	494	499
Tail piece	499	501

Work started 12-28, 19. Completed 9-2, 19 88

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Johnson Drilling Co., Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 19415 108th Ave SE Renton

(Signed) Brad Johnson License No. 0273 (WELL DRILLER)

Contractor's Registration No. JOHNSON02075M Date 7-2, 19 88

(USE ADDITIONAL SHEETS IF NECESSARY)

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-15A1
Map ID	15A1
North	149747.149
East	1283938.315
Owner	OR-WA Railroad
Address	22300 Russell Rd
Well Depth	N/A
Surf. Elev.	35
Screen Int.	N/A
Log?	N
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY WR, KCA
WL Ft BGS	N/A
Use³	NIU
Source of Info	KCA
Notes	On public water supply
Operable?	Unlikely
Accessible	Yes
Well Type	Group D
Loc Quality⁴	A
Old Inventory #	
Completion Elevation	N/A
Water Level Elevation	N/A

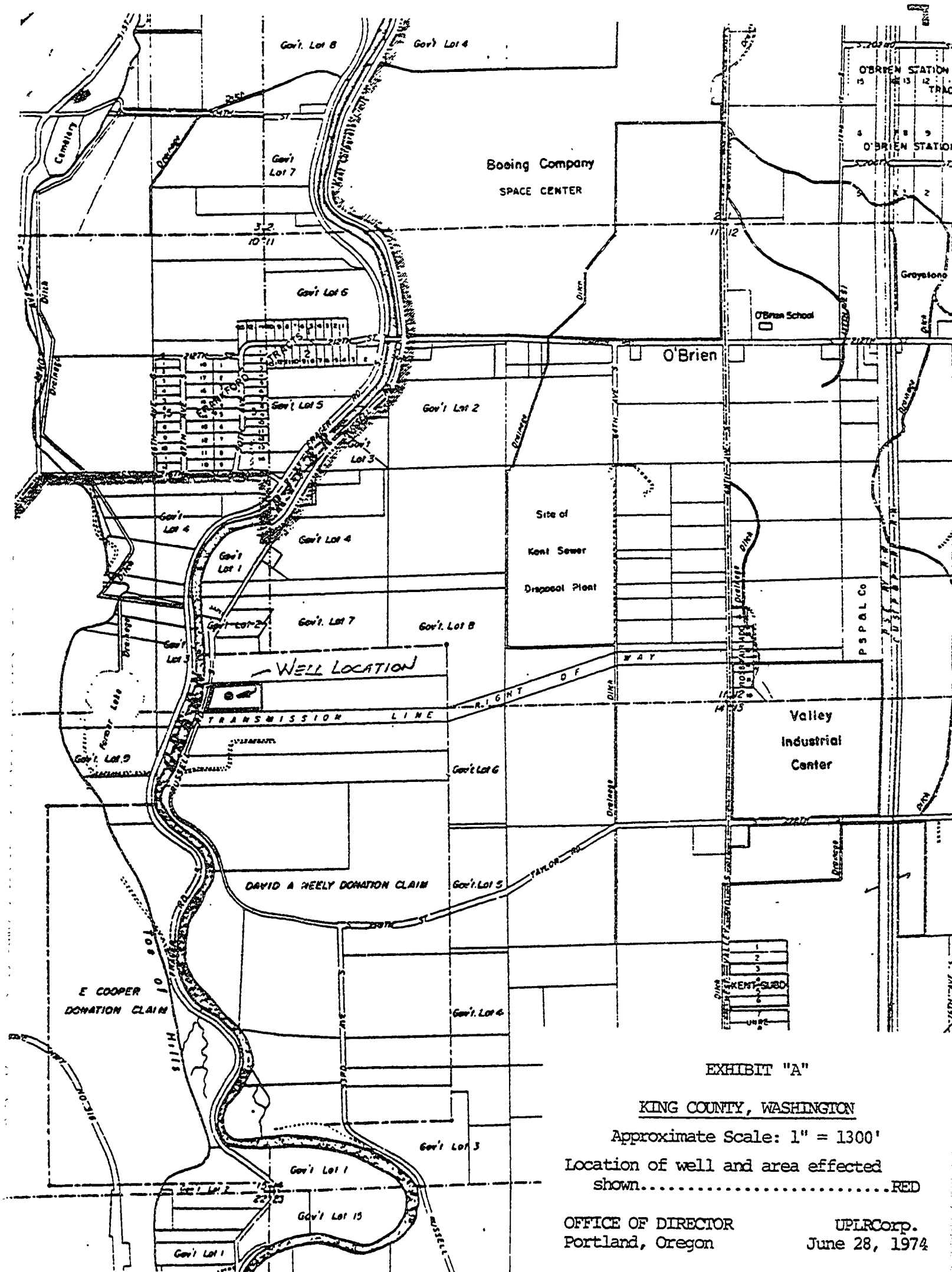


EXHIBIT "A"

KING COUNTY, WASHINGTON

Approximate Scale: 1" = 1300'

Location of well and area effected shown.....RED

OFFICE OF DIRECTOR
Portland, Oregon

UPLRCorp.
June 28, 1974



STATE OF WASHINGTON
DEPARTMENT OF WATER RESOURCES
DIVISION OF WATER MANAGEMENT

KING COUNTY,
WASHINGTON

WATER RIGHT CLAIM

OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY & its Lessee
UNION PACIFIC RAILROAD COMPANY
UNION PACIFIC LAND RESOURCES CORPORATION

1. NAME _____

ADDRESS 921 SW Washington

Portland, Oregon ZIP CODE 97205

2. SOURCE FROM WHICH THE RIGHT TO TAKE AND MAKE USE OF WATER IS CLAIMED: Ground Water
(SURFACE OR GROUND WATER)

W.R.I.A. 99
(LEAVE BLANK)

A. IF GROUND WATER, THE SOURCE IS Well

B. IF SURFACE WATER, THE SOURCE IS N/A

3. THE QUANTITIES OF WATER AND TIMES OF USE CLAIMED:

A. QUANTITY OF WATER CLAIMED Less than 5000 gal/day PRESENTLY USED Less than 5000 gal/day
(CUBIC FEET PER SECOND OR GALLONS PER MINUTE)

B. ANNUAL QUANTITY CLAIMED See A above PRESENTLY USED See A above
(ACRE FEET PER YEAR)

C. IF FOR IRRIGATION, ACRES CLAIMED N/A PRESENTLY IRRIGATED N/A

D. TIME(S) DURING EACH YEAR WHEN WATER IS USED: Year around

4. DATE OF FIRST PUTTING WATER TO USE: _____ MONTH _____ YEAR _____

5. LOCATION OF THE POINT(S) OF DIVERSION/WITHDRAWAL: 510 FEET West AND
200 FEET North FROM THE SE CORNER OF SECTION 10

BEING WITHIN SE 1/4 OF SECTION 10 T. 22 N. 4 R. 4 (E. 1/4) W.M.

IF THIS IS WITHIN THE LIMITS OF A RECORDED PLATTED PROPERTY, LOT _____ BLOCK _____ OF

(GIVE NAME OF PLAT OR ADDITION)

6. LEGAL DESCRIPTION OF LANDS ON WHICH THE WATER IS USED: See Exhibit "A" attached hereto
and by this reference made a part hereof.

King COUNTY, Washington

7. PURPOSE(S) FOR WHICH WATER IS USED: Domestic purposes

8. THE LEGAL DOCTRINE(S) UPON WHICH THE RIGHT OF CLAIM IS BASED: Appropriation

THE FILING OF A STATEMENT OF CLAIM DOES NOT CONSTITUTE AN ADJUDICATION OF ANY CLAIM TO THE RIGHT TO USE OF WATERS AS BETWEEN THE WATER USE CLAIMANT AND THE STATE OR AS BETWEEN ONE OR MORE WATER USE CLAIMANTS AND ANOTHER OR OTHERS. THIS ACKNOWLEDGEMENT CONSTITUTES RECEIPT FOR THE FILING FEE.

DATE RETURNED _____ REGISTRY NUMBER _____

MAR 21 1974

THIS HAS BEEN ASSIGNED
WATER RIGHT CLAIM REGISTRY NO. _____

John B. Jeff

I HEREBY SWEAR THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

X [Signature] DIRECTOR, UPLRCorp.
GENERAL MANAGER

DATE 6-28-74 CWR&N UPLRCorp.

IF CLAIM FILED BY DESIGNATED REPRESENTATIVE, PRINT OR TYPE FULL NAME AND MAILING ADDRESS OF AGENT BELOW.

921 SW Washington

Portland, Oregon 97205

☐ ADDITIONAL INFORMATION RELATING TO WATER QUALITY AND/OR WELL CONSTRUCTION IS AVAILABLE.

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-15E1
Map ID	15E1
North	148047.789
East	1279463.544
Owner	Davidson
Address	22811 Military Rd S
Well Depth	24
Surf. Elev.	401
Screen Int.	N/A
Log?	N
Likely Aquifer ¹	UOA
Aquifer Basis	Completion elev.
Source(s)²	Imap, WSB 28
WL Ft BGS	N/A
Use³	NIU
Source of Info	KCA
Notes	On public water supply
Operable?	Likely
Accessible	Yes
Well Type	Group D
Loc Quality⁴	P
Old Inventory #	x
Completion Elevation	N/A
Water Level Elevation	N/A

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horse- power		
15E1	T. 22 N., R. 4 E - Contd. W. J. Davidson	401	Dg	24	30	19.58	8-24-62	C	1	Irr	

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-15H1
Map ID	15H1
North	147750.994
East	1283544.963
Owner	City of Kent
Address	228th and Frager Rd
Well Depth	55
Surf. Elev.	50
Screen Int.	25 - 55
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY
WL Ft BGS	24
Use³	PIU
Source of Info	KCA
Notes	Possibly for roadway construction
Operable?	Unknown
Accessible	Yes
Well Type	Monitoring?
Loc Quality⁴	P
Old Inventory #	
Completion Elevation	-5
Water Level Elevation	N/A

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-15J1
Map ID	15J1
North	147020.570
East	1283730.187
Owner	Mysterious well
Address	Russell Woods Park
Well Depth	354.3
Surf. Elev.	37
Screen Int.	N/A
Log?	N
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	SPU
WL Ft BGS	
Use³	
Source of Info	SPU
Notes	
Operable?	
Accessible	
Well Type	
Loc Quality⁴	
Old Inventory #	
Completion Elevation	-317
Water Level Elevation	37+

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-15M1
Map ID	15M1
North	146847.608
East	1280366.569
Owner	Shaw
Address	23056 Military Rd S
Well Depth	68
Surf. Elev.	320
Screen Int.	N/A
Log?	N
Likely Aquifer ¹	LOA
Aquifer Basis	Completion elev.
Source(s)²	Imap, WSB 28
WL Ft BGS	54
Use³	NIU
Source of Info	KCA
Notes	On landfill property
Operable?	No
Accessible	Yes
Well Type	Group D
Loc Quality⁴	P
Old Inventory #	x
Completion Elevation	252
Water Level Elevation	N/A

Groundwater Well Data - Details

Enter a Well ID: *Example: GrpA_01001_01*

The search returns detailed info about the well, including all the water level and water quality sampling data for the searched well.

Download data:

View Well location in:-- [Groundwater Well Viewer](#)

Well Detail

Well ID	S_472347122172401
Location Name	SHAW
Well Type	Well
Well Depth (ft)	68
Surface Elevation (ft)	320
X Coord (WAN-SPF)	1279649.875
Y Coord (WAN-SPF)	148006.40625
Has Water Level Data?	No
Has Water Quality Data?	No
Local Number	22N/04E-15M01
Ecology Well Tag	Unknown
Parcel Number	
GWMA Code	South King County
Basin	Lower Green River - West
CARA Area	None
City	SeaTac

Water Level Sampling Data

No water level sampling data exists for the searched well.

Water Quality Sampling Data

No water quality sampling data exists for the searched well.

Updated: November 6, 2018

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horse- power		
15M1	T. 22 N., R. 4 E - Contd. L. Shaw	320	Dr	68	6	54.64	8-24-62	J	--	D	

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-15P1
Map ID	15P1
North	145519.822
East	1280828.890
Owner	Pet Haven
Address	23646 Military Rd S
Well Depth	17
Surf. Elev.	315
Screen Int.	17
Log?	Y
Likely Aquifer ¹	UOA
Aquifer Basis	Completion elev.
Source(s)²	ECY, ECY WR
WL Ft BGS	15
Use³	NIU
Source of Info	ECY, KCA
Notes	Decommissioned
Operable?	Decom
Accessible	No
Well Type	Group D Irrigation
Loc Quality⁴	P
Old Inventory #	
Completion Elevation	298
Water Level Elevation	2



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
WATER RIGHT CLAIMS REGISTRATION

WATER RIGHT CLAIM

RECEIVED
DEPT. OF ECOLOGY
JUN 27 1974
CASH 1147

1. NAME Merrill D. Marlatt, President (Pet Haven Cemetery, Inc.)

ADDRESS P.O. Box 1147

Kent, Washington

ZIP
CODE 98031

PHONE NO. TR8-7292

2. SOURCE FROM WHICH THE RIGHT TO TAKE AND MAKE USE OF WATER IS CLAIMED: GROUND WATER
(SURFACE OR GROUND WATER)

W.R.I.A. 09

(LEAVE BLANK)

A. IF GROUND WATER, THE SOURCE IS A WELL

B. IF SURFACE WATER, THE SOURCE IS _____

3. THE QUANTITIES OF WATER AND TIMES OF USE CLAIMED:

A. QUANTITY OF WATER CLAIMED 100 PRESENTLY USED 100
(GALLONS PER MINUTE)

B. ANNUAL QUANTITY CLAIMED 5 PRESENTLY USED 2
(ACRE FEET PER YEAR)

C. IF FOR IRRIGATION, ACRES CLAIMED 2 1/2 PRESENTLY IRRIGATED 1 1/2

D. TIME(S) DURING EACH YEAR WHEN WATER IS USED: MAY to OCTOBER

4. DATE OF FIRST PUTTING WATER TO USE: MONTH MAY YEAR 1952

5. LOCATION OF THE POINT(S) OF DIVERSION/WITHDRAWAL: 170 FEET South AND 330
FEET East FROM THE N.W. CORNER OF SECTION 15
BEING WITHIN 1/4 SW of SE 1/4 W OF SECTION 15, T. 22 N., R. 4 E.W.M. (E. OR W.) W.M.

IF THIS IS WITHIN THE LIMITS OF A RECORDED PLATTED PROPERTY, LOT _____ BLOCK _____ OF

(GIVE NAME OF PLAT OR ADDITION)

6. LEGAL DESCRIPTION OF LANDS ON WHICH THE WATER IS USED: The North 330 Feet of the
West 660 feet of the S. E. quarter of the Southwest quarter of Section Fifteen (15)
Township Twenty Two (22) North, Range Four (4) E. W. M. Except Roads.

COUNTY King

7. PURPOSE(S) FOR WHICH WATER IS USED: Irrigation of lawn and shrubs

8. THE LEGAL DOCTRINE(S) UPON WHICH THE RIGHT OF CLAIM IS BASED: appropriation

DO NOT USE THIS SPACE

THE FILING OF A STATEMENT OF CLAIM DOES NOT CONSTITUTE AN ADJUDICATION OF ANY CLAIM TO THE RIGHT TO USE OF WATERS AS BETWEEN THE WATER USE CLAIMANT AND THE STATE OR AS BETWEEN ONE OR MORE WATER USE CLAIMANTS AND ANOTHER OR OTHERS. THIS ACKNOWLEDGEMENT CONSTITUTES RECEIPT FOR THE FILING FEE.

DATE RETURNED THIS HAS BEEN ASSIGNED
WATER RIGHT CLAIM REGISTRY NO.

MAR 4 1974 134616

DIRECTOR, DEPARTMENT OF ECOLOGY

I HEREBY SWEAR THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF

Merrill D. Marlatt

DATE June 24 - 1974
IF CLAIM FILED BY DESIGNATED REPRESENTATIVE PRINT OR TYPE
FULL NAME AND MAILING ADDRESS OF AGENT BELOW

☐ ADDITIONAL INFORMATION RELATING TO WATER QUALITY AND/OR WELL CONSTRUCTION IS AVAILABLE

A FEE OF \$2.00 MUST ACCOMPANY THIS WATER RIGHT CLAIM

RETURN ALL THREE COPIES WITH CARBONS INTACT, ALONG WITH YOUR FEE TO
DEPARTMENT OF ECOLOGY
WATER RIGHT CLAIMS REGISTRATION
OLYMPIA, WASHINGTON 98504

ORIGINAL DWR

DAILY LEDGER

DATE	FILE #	MONEY RECEIVED		NAME	ACCEPTED	RETURNED	REG. #
		YES	NO				
6-24-74 ^{OK}	134616			A. Antilla			120046
	134617			C. Moss Jr.			157137
	134618			P. Nicholson			119864
	134619			E. Angela			119861
	134620			"			119862
	134621			"			119863
	134622			Sho-Dak Franch, Inc.			120067
	134623			J. Sivarone			119898
	134624			"			119899
	134625			"			119900
	134626			"			119901
	134627			"			119902
	134628			"			119903
	134629			"			119904
	134630			"			119905
	134631			"			119906
	134632			"			119907
	134633			"			119908
	134634			H. McKinney			119897
	134635			Waspide Copper Co.			120088
	134636			"			120089
	134637			"			120090
	134638			R. Fineman			119896
	134639			N. Burnett			119895
	134640			M. Spalding			120080
	134641			"			120081
	134642			"			120082
	134643			"			120083
	134644			"			120084
	134645			"			120085
	134646			"			120086
	134647			"			120087
	134648			C. Chartrand			120079
	134649			H. Hill			119893
	134650			"			119894
	134651			J. Gilbert			119889
	134652			"			119890
	134653			"			119891
	134654			"			119892

08437

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

ENTERED

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. A22480UNIQUE WELL I.D. # 0Water Right Permit No. 22-4E-15P(1) OWNER: Name Nellie Marlatt Address 26322 97th Ave S., Kent, WA 98031(2) LOCATION OF WELL: County King SE 1/4 SW 1/4 Sec 15 T. 22 N. R. 4E W.M.(2a) STREET ADDRESS OF WELL (or nearest address) 23646 Military Rd. S., Kent(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐
☐ Irrigation ☐ Test Well ☐ Other ☒
☐ DeWater(4) TYPE OF WORK: Owner's number of well (if more than one) _____
Abandoned ☒ New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐(5) DIMENSIONS: Diameter of well 40 inches.
Drilled ☒ feet. Depth of completed well 17 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: _____ ft. to _____ ft.
Welded ☐ _____ ft. to _____ ft.
Liner installed ☐ _____ ft. to _____ ft.
Threaded ☐ _____ ft. to _____ ft.Perforations: Yes ☐ No ☒
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.Gravel packed: Yes ☐ No ☐ Size of gravel _____
Gravel placed from _____ ft. to _____ ft.Surface seal: Yes ☐ No ☒ To what depth? _____ ft.
Material used in seal _____
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? _____ Depth of strata _____
Method of sealing strata off _____(7) PUMP: Manufacturer's Name _____
Type: _____ H.P.(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 9 ft. below top of well Date 6-26-97
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " " " "
" " " " " "Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)
Time Water Level Time Water Level Time Water LevelDate of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
We abandoned a old existing 17' deep 40" diameter well. Well had a steel plate welded 3' below ground across diameter of well. Rocks had been filled from plate to the surface. A track hoe excavated rocks and plate also surface steel piping. We excavated bottom of hole to native material at 17' well was chlorinated - clean washed sand to 7' cement to 1 1/2' below grade. Native material to surface for possible regrade.		

RECEIVED

JUL 03 1997

DEPT OF ECOLOGY

Work Started 6-26 19. Completed 6-26 19 97

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Johnson Drilling Co., Inc 98055
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 19415 108th Ave SE, Renton, WA
(Signed) Ben Johnson License No. 0233
(WELL DRILLER)Contractor's Registration No. JOHNSDC2072 Date 6-26 19 97

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-22A1
Map ID	22A1
North	143998.344
East	1282671.250
Owner	Unknown
Address	4331 S 239th Pl
Well Depth	220
Surf. Elev.	220
Screen Int.	N/A
Log?	N
Likely Aquifer ¹	GA
Aquifer Basis	Completion elev.
Source(s)²	Imap, KCA
WL Ft BGS	N/A
Use³	NIU
Source of Info	KCA
Notes	On public water supply
Operable?	Unlikely
Accessible	No
Well Type	Group D
Loc Quality⁴	I
Old Inventory #	
Completion Elevation	0
Water Level Elevation	N/A

Groundwater Well Data - Details

Enter a Well ID: *Example: GrpA_01001_01*

The search returns detailed info about the well, including all the water level and water quality sampling data for the searched well.

Download data:

View Well location in:-- [Groundwater Well Viewer](#)

Well Detail

Well ID	S_472308122163901
Location Name	
Well Type	Well
Well Depth (ft)	220
Surface Elevation (ft)	220
X Coord (WAN-SPF)	1282671.25
Y Coord (WAN-SPF)	143998.34375
Has Water Level Data?	No
Has Water Quality Data?	No
Local Number	22N/04E-22A01
Ecology Well Tag	Unknown
Parcel Number	
GWMA Code	South King County
Basin	Lower Green River - West
CARA Area	None
City	Kent

Water Level Sampling Data

No water level sampling data exists for the searched well.

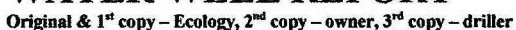
Water Quality Sampling Data

No water quality sampling data exists for the searched well.

Updated: November 6, 2018

Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-22A2
Map ID	22A2
North	143740.919
East	1283743.306
Owner	Stearns
Address	24519 Frager Rd S
Well Depth	65
Surf. Elev.	40
Screen Int.	55 - 60
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	ECY, Imap, KCA
WL Ft BGS	13
Use³	PIU
Source of Info	KCA
Notes	New well, on private water supply, site vacant
Operable?	New well
Accessible	Yes
Well Type	Group D
Loc Quality⁴	A
Old Inventory #	
Completion Elevation	-25
Water Level Elevation	27

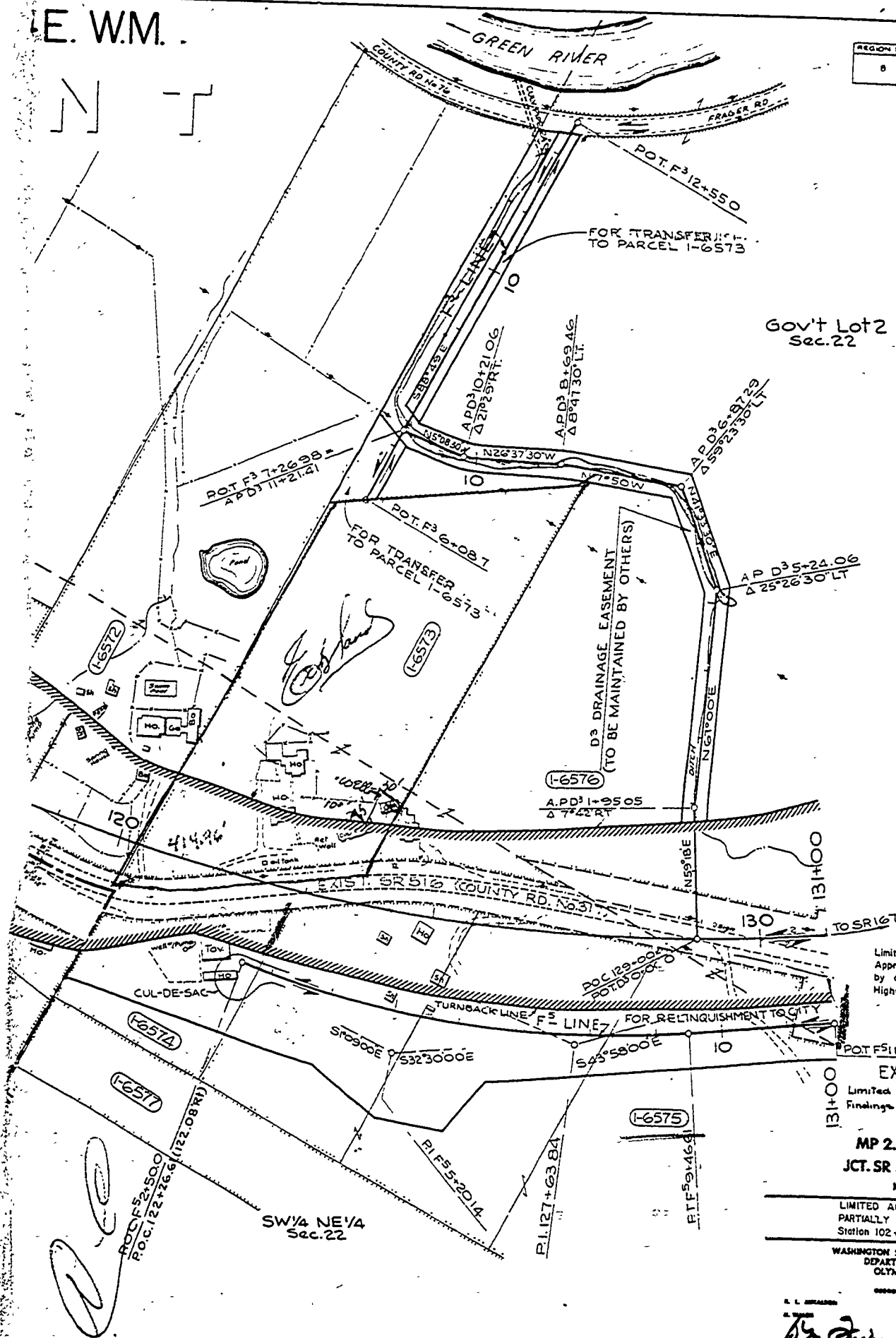


Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-22H1
Map ID	22H1
North	142791.264
East	1283049.768
Owner	Eckland
Address	24421 Frager Rd S
Well Depth	N/A
Surf. Elev.	75
Screen Int.	N/A
Log?	N
Likely Aquifer ¹	GA
Aquifer Basis	Wellhead elev.
Source(s)²	ECY WR, KCA
WL Ft BGS	N/A
Use³	IU
Source of Info	KCA
Notes	On private water supply
Operable?	Yes
Accessible	Yes
Well Type	Group D
Loc Quality⁴	P
Old Inventory #	
Completion Elevation	N/A
Water Level Elevation	N/A

E. W.M.

REGION NO.	STATE	FED AID PROJECT NO.	SHEET NO.
8	WASH.		



Limited Access Features Tentatively
Approved Aug. 15, 1968
by authority of Washington State
Highway Commission

EXHIBIT A
Limited Access Established By Commission
Findings And Order Issued Nov. 18, 1968.
SR 516
MP 2.21 TO MP 4.83
JCT. SR 5 TO JCT. SR 167
KING COUNTY

LIMITED ACCESS PLAN
PARTIALLY CONTROLLED
Station 102+00 to Station 131+00

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

E. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND
J. L. SUTHERLAND



DATE FORWARDED
JUN 15 1968

DATE Aug 15, 1968

SHEET 3 OF 11 SHEETS
Designated for Limited Access Control by
Commission Resolution No. 1897, October 23, 1967

RIGHT OF WAY LIMITS
ARE APPROXIMATE ONLY
AND SUBJECT TO CHANGE

DESCRIPTION: All that part of the following described Tract "X" lying Westerly of a line described as follows:

Begin at a point 120 feet distant Easterly, when measured radially from the Center Line Survey of SR 516, Jct. SR 5 to Jct. SR 167 at Highway Engineer's Station 120+00; thence Southerly 240 feet, more or less, to a point 110 feet distant Easterly, when measured radially from said Center Line at Highway Engineer's Station 122+50; thence Southeasterly 240 feet, more or less, to a point 130 feet distant Easterly, when measured radially from said Center Line at Highway Engineer's Station 125+00 and the end of this line description.

TRACT "X"

That portion of government lot 2, and the southwest quarter of the northeast quarter of section 22, township 22 north, range 3 east, W.M., in King County, Washington, described as follows:

Beginning at a point on the north line of said government lot 2, which is north $89^{\circ}10'03''$ west 639.33 feet from the intersection of said line with the westerly margin of County Road No. 76; thence continuing north $89^{\circ}10'03''$ west 639.33 feet to the easterly margin of Kent-Des Moines Road No. 317; thence southeasterly along said road margin to the south line of the north half of the north half of the southwest quarter of the northeast quarter of said section 22; thence south $89^{\circ}12'32''$ east 648.21 feet; thence north $31^{\circ}14'40''$ west 394.54 feet to the point of beginning.

The lands being herein condemned contain an area of 0.86 acre, more or less, the specific details concerning all of which may be found within that certain map of definite location now of record and on file in the Office of the Director of Highways at Olympia, Washington, bearing date of approval May 8, 1969, revised September 4, 1969; and the center line of which is also of record in Volume 4 of Highway Plats, page 181, under Auditor's File No 6647481, records of King County, State of Washington

TOGETHER WITH all rights of ingress and egress, if any (including all existing future or potential easements of access, light, view and air) to, from and between said SR 516, and the remainder of said Tract "X". EXCEPT THAT there shall be reasonable access to Existing County Road No. 76 (Frager Road, via the F3 Line Survey of said SR 516.)

TOGETHER WITH the right to enter upon the respondents remaining lands, where necessary, to remove improvements located wholly or partially upon the right of way.

SR 516, Jct. SR 5 to Jct. SR 167.

4-29-71



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
WATER RIGHT CLAIMS REGISTRATION

WATER RIGHT CLAIM

RECEIVED
DEPARTMENT OF ECOLOGY

MAY 374096631

CASH ☒ OTHER ☐ NONE ☐

1. NAME Charles Eckland and Fern G. Eckland

ADDRESS 26306 135th S.E.

Kent, Wash.

ZIP
CODE 98031

2. SOURCE FROM WHICH THE RIGHT TO TAKE AND MAKE USE OF WATER IS CLAIMED: Ground water
(SURFACE OR GROUND WATER)

W.R.I.A. 09

(LEAVE BLANK)

A. IF GROUND WATER, THE SOURCE IS a well

B. IF SURFACE WATER, THE SOURCE IS _____

3. THE QUANTITIES OF WATER AND TIMES OF USE CLAIMED:

A. QUANTITY OF WATER CLAIMED 10 gpm PRESENTLY USED 10 gpm
(CUBIC FEET PER SECOND OR GALLONS PER MINUTE)

B. ANNUAL QUANTITY CLAIMED 1 acre ft. PRESENTLY USED 1 acre ft.
(ACRE FEET PER YEAR)

C. IF FOR IRRIGATION, ACRES CLAIMED _____ PRESENTLY IRRIGATED _____

D. TIME(S) DURING EACH YEAR WHEN WATER IS USED: continuously

4. DATE OF FIRST PUTTING WATER TO USE: MONTH _____ YEAR before 1945

5. LOCATION OF THE POINT(S) OF DIVERSION/WITHDRAWAL: _____ FEET _____ AND _____

FEET _____ FROM THE _____ CORNER OF SECTION _____

BEING WITHIN SW $\frac{1}{4}$ OF NE $\frac{1}{4}$ OF SECTION 22 T. 22 N., R. 4 E. (~~E $\frac{1}{2}$~~) W.M.

IF THIS IS WITHIN THE LIMITS OF A RECORDED PLATTED PROPERTY, LOT _____ BLOCK _____ OF _____

(GIVE NAME OF PLAT OR ADDITION)

6. LEGAL DESCRIPTION OF LANDS ON WHICH THE WATER IS USED: _____

Legal and map included

COUNTY King

7. PURPOSE(S) FOR WHICH WATER IS USED: household only

8. THE LEGAL DOCTRINE(S) UPON WHICH THE RIGHT OF CLAIM IS BASED: appropriation

DO NOT USE THIS SPACE

THE FILING OF A STATEMENT OF CLAIM DOES NOT CONSTITUTE AN ADJUDICATION OF ANY CLAIM TO THE RIGHT TO USE OF WATERS AS BETWEEN THE WATER USE CLAIMANT AND THE STATE OR AS BETWEEN ONE OR MORE WATER USE CLAIMANTS AND ANOTHER OR OTHERS; THIS ACKNOWLEDGEMENT CONSTITUTES RECEIPT FOR THE FILING FEE.

DATE RETURNED THIS HAS BEEN ASSIGNED OCT 7 1974 086211
WATER RIGHT CLAIM REGISTRY NO.

I HEREBY SWEAR THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Charles Eckland

DATE May 2, 1974

IF CLAIM FILED BY DESIGNATED REPRESENTATIVE, PRINT OR TYPE FULL NAME AND MAILING ADDRESS OF AGENT BELOW.

DIRECTOR, DEPARTMENT OF ECOLOGY

☒ ADDITIONAL INFORMATION RELATING TO WATER QUALITY AND/OR WELL CONSTRUCTION IS AVAILABLE.

A FEE OF \$2.00 MUST ACCOMPANY THIS WATER RIGHT CLAIM.

ORIGINAL DWR

RETURN ALL THREE COPIES WITH CARBONS INTACT, ALONG WITH YOUR FEE TO:
DEPARTMENT OF ECOLOGY
WATER RIGHT CLAIMS REGISTRATION
OLYMPIA, WASHINGTON 98504

King County Department of Assessments

Fair, Equitable, and Understandable Property Valuations

You're In: [Assessor](#) >> [Look up Property Info](#) >> [eReal Property](#)

Department of Assessments

500 Fourth Avenue, Suite ADM-AS-0708, Seattle, WA 98104

Office Hours:
Mon - Fri
8:30 a.m. to
4:30 p.m.

TEL: 206-296-7300
FAX: 206-296-5107
TTY: 206-296-7888

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- [Map This Property](#)
- [Glossary of Terms](#)
- [Area Report](#)
- [Print Property Detail](#)

ADVERTISEMENT

PARCEL DATA

Parcel	222204-9037	Jurisdiction	KENT
Name	ECKLAND CRAIG	Levy Code	1457
Site Address	24421 FRAGER RD S 98032	Property Type	R
Residential Area	027-010 (SW Appraisal District)	Plat Block / Building Number	
Property Name		Plat Lot / Unit Number	
		Quarter-Section-Township-Range	NE-22-22-4

Legal Description

BEG ON N LN GL 2 N 89-10-03 W 639.33 FT FR W LN CO RD # 76 TH N 89-10-03 W 639.33 FT TO ELY MGN KENT-DES MOINES RD TH SELY ALG SD ELY MGN TO S LN OF N 1/2 OF SW 1/4 OF NE 1/4 TH S 89-12-32 E ALG SD S LN & S LN PROD 648.21 FT TH N 31-14-40 W 394.54 FT TO BEG LESS ST HWY POR TAXABLE

PLat Block:

Plat Lot:

LAND DATA

Highest & Best Use As If Vacant	SINGLE FAMILY
Highest & Best Use As Improved	PRESENT USE
Present Use	Single Family(Res Use/Zone)
Land SqFt	174,240
Acres	4.00

Percentage Unusable	
Unbuildable	NO
Restrictive Size Shape	NO
Zoning	SR-1
Water	PRIVATE
Sewer/Septic	PRIVATE
Road Access	PRIVATE
Parking	ADEQUATE
Street Surface	PAVED

Views

Rainier	
Territorial	
Olympics	
Cascades	
Seattle Skyline	
Puget Sound	
Lake Washington	
Lake Sammamish	
Lake/River/Creek	
Other View	

Designations

Historic Site	
Current Use	(none)
Nbr Bldg Sites	
Adjacent to Golf Fairway	NO
Adjacent to Greenbelt	NO
Other Designation	NO
Deed Restrictions	NO
Development Rights Purchased	NO
Easements	NO
Native Growth Protection Easement	NO
DNR Lease	NO

Waterfront

Waterfront Location	
Waterfront Footage	0
Lot Depth Factor	0
Waterfront Bank	
Tide/Shore	
Waterfront Restricted Access	
Waterfront Access Rights	NO
Poor Quality	NO
Proximity Influence	NO

Nuisances

Topography	
Traffic Noise	
Airport Noise	
Power Lines	NO
Other Nuisances	NO

Problems

Water Problems	NO
Transportation Concurrence	NO
Other Problems	NO

Environmental

Environmental	YES
---------------	-----

Environmental Type	Information Source	Delineation study	Percentage Affected
HundredYrFloodPlain	JURISDICTION	N	0
Wetland	JURISDICTION	N	0

BUILDING

Building Number	1
Year Built	1931
Year Renovated	0
Stories	1
Living Units	1



Click the camera to see more pictures.

Picture of Building 1



Floor plan of Building 1



Reference Links:

- [King County Tax Links](#)
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- [Washington State Department of Revenue](#) (External link)
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Grade	5 Fair
Grade Variant	0
Condition	Average
Basement Grade	
1st Floor	980
1/2 Floor	0
2nd Floor	0
Upper Floor	0
Finished Basement	0
Total Finished Area	980
Total Basement	460
Basement Garage	0
Unfinished 1/2	0
Unfinished Full	0
AGLA	980
Attached Garage	0
Bedrooms	2
Full Baths	1
3/4 Baths	0
1/2 Baths	0
Heat Source	Oil
Heat System	Forced Air
Deck Area SqFt	0
Open Porch SqFt	110
Enclosed Porch SqFt	0
Brick/Stone	0
Fireplace Single Story	0
Fireplace Multi Story	0
Fireplace Free Standing	0
Fireplace Additional	0
AddnlCost	0
Obsolescence	0
Net Condition	0
Percentage Complete	0
Daylight Basement	
View Utilization	

TAX ROLL HISTORY

Account	Valued Year	Tax Year	Omit Year	Levy Code	Appraised Land Value (\$)	Appraised Imps Value (\$)	Appraised Total Value (\$)	New Dollars (\$)	Taxable Land Value (\$)	Taxable Imps Value (\$)	Taxable Total Value (\$)	Tax Value Reason
222204903702	2018	2019		1457	211,000	88,000	299,000	0	211,000	88,000	299,000	
222204903702	2017	2018		1457	201,000	96,000	297,000	0	201,000	96,000	297,000	
222204903702	2016	2017		1457	183,000	62,000	245,000	0	183,000	62,000	245,000	
222204903702	2015	2016		1457	170,000	54,000	224,000	0	170,000	54,000	224,000	
222204903702	2014	2015		1457	161,000	48,000	209,000	0	161,000	48,000	209,000	
222204903702	2013	2014		1457	147,000	24,000	171,000	0	147,000	24,000	171,000	
222204903702	2012	2013		1457	139,000	69,000	208,000	0	139,000	69,000	208,000	
222204903702	2011	2012		1457	151,000	74,000	225,000	0	151,000	74,000	225,000	
222204903702	2010	2011		1457	166,000	80,000	246,000	0	166,000	80,000	246,000	
222204903702	2009	2010		1457	166,000	89,000	255,000	0	166,000	89,000	255,000	
222204903702	2008	2009		1457	84,000	133,000	217,000	0	84,000	133,000	217,000	
222204903702	2007	2008		1459	80,000	131,000	211,000	0	80,000	131,000	211,000	
222204903702	2006	2007		1459	72,000	97,000	169,000	0	72,000	97,000	169,000	
222204903702	2005	2006		1459	67,000	80,000	147,000	0	67,000	80,000	147,000	
222204903702	2004	2005		1459	63,000	74,000	137,000	0	63,000	74,000	137,000	
222204903702	2003	2004		1459	63,000	60,000	123,000	0	63,000	60,000	123,000	
222204903702	2002	2003		1459	63,000	57,000	120,000	0	63,000	57,000	120,000	
222204903702	2001	2002		1459	30,000	33,000	63,000	0	30,000	33,000	63,000	
222204903702	2000	2001		1459	30,000	29,000	59,000	29,000	30,000	29,000	59,000	
222204903702	1999	2000		1459	30,000	0	30,000	0	30,000	0	30,000	
222204903702	1998	1999		1459	30,000	0	30,000	0	30,000	0	30,000	
222204903702	1997	1998		1459	0	0	0	0	30,000	0	30,000	
222204903702	1996	1997		1459	0	0	0	0	29,500	43,900	73,400	
222204903702	1994	1995		1459	0	0	0	0	29,500	43,900	73,400	
222204903702	1992	1993		1459	0	0	0	0	44,300	25,100	69,400	
222204903702	1990	1991		1459	0	0	0	0	36,300	20,600	56,900	
222204903702	1988	1989		1459	0	0	0	0	21,600	16,700	38,300	
222204903702	1986	1987		1459	0	0	0	0	21,600	16,900	38,500	
222204903702	1984	1985		1459	0	0	0	0	20,000	21,700	41,700	
222204903702	1982	1983		1459	0	0	0	0	20,000	24,700	44,700	

SALES HISTORY

Excise Number	Recording Number	Document Date	Sale Price	Seller Name	Buyer Name	Instrument	Sale Reason
1753917	20000519000339	3/3/2000	\$0.00	BEALS DIANNE J	ECKLAND CRAIG	Quit Claim Deed	Estate Settlement

1389680	199408101690	7/29/1994	\$0.00	ECKLAND FERN	ECKLAND FERN	Quit Claim Deed	Other
-------------------------	------------------------------	-----------	--------	-----------------	-----------------	--------------------	-------

REVIEW HISTORY

PERMIT HISTORY

Permit Number	Permit Description	Type	Issue Date	Permit Value	Issuing Jurisdiction	Reviewed Date
CRAL- 2003096	Structural repair: dry rot beam/trusses & decking as a result of reroof permit	Remodel	8/25/2000	\$3,000	KENT	4/8/2002

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Kent Highlands Well Inventory

Well ID (T/R/S QQ)	22N-04E-23D1
Map ID	23D1
North	144154.031
East	1284879.200
Owner	Unknown (Orphan)
Address	24202 Frager Rd S
Well Depth	NA
Surf. Elev.	33
Screen Int.	N/A
Log?	Y
Likely Aquifer ¹	RAA
Aquifer Basis	Location
Source(s)²	Imap, ECY, KCA
WL Ft BGS	N/A
Use³	NIU
Source of Info	KCA
Notes	On public water supply, site is vacant
Operable?	Unlikely
Accessible	No
Well Type	Group D
Loc Quality⁴	I
Old Inventory #	
Completion Elevation	N/A
Water Level Elevation	N/A

Town Kent, Wash. ✓
 Company Jeff Orphan Home
 Farm
 Authority N. C. Jannsen
 Elevation
 Collector W. Warren
 Confidential No
 Date 3-21-36

Map No.

No.

R. 4 E. W.

T.

Sec.

22

23

N.

(?)

No.	STRATA	Thickness		Depth	
		Feet	In.	Feet	In.
	Alluvium				
1.	Silt and sand	20		20	
2.	Sand and silt and little gravel	15		35	
3.	Silt, sand and wood	5		40	
4.	---	1		41	
	1200 gpm for 12 hrs-- (3-26-36)				

County

KING

Index No. K4825

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Department of Assessments

500 Fourth Avenue, Suite ADM-AS-0708, Seattle, WA 98104

Office Hours:
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4:30 p.m.

TEL: 206-296-7300
FAX: 206-296-5107
TTY: 206-296-7888

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PARCEL DATA

Parcel	232204-9092	Jurisdiction	KENT
Name	KING COUNTY-WLRD RFMS	Levy Code	1526
Site Address	FRAGER RD S	Property Type	C
Geo Area	70-60	Plat Block / Building Number	
Spec Area		Plat Lot / Unit Number	
Property Name	VACANT SFR AGRICULTURAL LAND	Quarter-Section-Township-Range	NW-23-22-4

Legal Description

E 425 FT OF W 625 FT OF N 250 FT OF GOVT LOT 15 IN NW QTR STR 23-22-04 EXC W 225 FT OF N 50 FT THEREOF AND EXC S 100 FT OF E 125 FT THEREOF; ALSO THE E 200 FT OF W 625 FT OF S 150 FT OF GOVT LOT 3 IN SW QTR STR 14-22-04

Plat Block:

Plat Lot:

LAND DATA

Highest & Best Use As If Vacant	AGRICULTURAL	Percentage Unusable	
Highest & Best Use As Improved	(unknown)	Unbuildable	NO
Present Use	Vacant(Industrial)	Restrictive Size Shape	NO
Land SqFt	112,502	Zoning	SR-1
Acres	2.58	Water	WATER DISTRICT
		Sewer/Septic	PRIVATE
		Road Access	PUBLIC
		Parking	ADEQUATE
		Street Surface	

Views

Rainier	
Territorial	
Olympics	
Cascades	
Seattle Skyline	
Puget Sound	
Lake Washington	
Lake Sammamish	
Lake/River/Creek	
Other View	

Waterfront

Waterfront Location	
Waterfront Footage	0
Lot Depth Factor	0
Waterfront Bank	
Tide/Shore	
Waterfront Restricted Access	
Waterfront Access Rights	NO
Poor Quality	NO
Proximity Influence	NO

Designations

Historic Site	
Current Use	(none)
Nbr Bldg Sites	
Adjacent to Golf Fairway	NO
Adjacent to Greenbelt	NO
Other Designation	NO
Deed Restrictions	NO
Development Rights Purchased	
Easements	NO
Native Growth Protection Easement	NO
DNR Lease	NO

Nuisances

Topography	
Traffic Noise	
Airport Noise	
Power Lines	NO
Other Nuisances	NO

Problems

Water Problems	NO
Transportation Concurrency	NO
Other Problems	NO

Environmental

Environmental	NO
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BUILDING

TAX ROLL HISTORY

Reference Links:

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This is a government owned parcel.

Change to state law (RCW 84. 40.045 and 84.40.175) by the 2013 Legislature eliminated revaluation of government owned parcels.

SALES HISTORY

REVIEW HISTORY

Tax Year	Review Number	Review Type	Appealed Value	Hearing Date	Settlement Value	Decision	Status
2016	R245050	Review - Destruct	\$0	1/1/1900	\$0		Active

PERMIT HISTORY

Permit Number	Permit Description	Type	Issue Date	Permit Value	Issuing Jurisdiction	Reviewed Date
CDEM-2143690	DEMO AND REMOVE ALL BUILDINGS FROM PROPERTY; INCLUDING A 21:600 SQ FT WAREHOUSE AND HOOP HOUSES.NO SEPA REQUIRED - AGRICULTURAL BUILDINGS UNDER 30,000 SQ FT.	Demolition	10/22/2014	\$0	KENT	4/4/2017

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Groundwater Well Data - Details

Enter a Well ID:

Example: GrpA_01001_01

The search returns detailed info about the well, including all the water level and water quality sampling data for the searched well.

Download data: **View Well location in:–** [Groundwater Well Viewer](#)

Well Detail

Well ID	N_472310122160701
Location Name	Not Given
Well Type	Well
Well Depth (ft)	
Surface Elevation (ft)	33
X Coord (WAN-SPF)	1284879.25
Y Coord (WAN-SPF)	144154.03125
Has Water Level Data?	No
Has Water Quality Data?	No
Local Number	22N/04E-23D01
Ecology Well Tag	Unknown
Parcel Number	
GWMA Code	South King County
Basin	Lower Green River - West
CARA Area	None
City	Kent

Water Level Sampling Data

No water level sampling data exists for the searched well.

Water Quality Sampling Data

No water quality sampling data exists for the searched well.

Updated: October 7, 2010