Wilson
SURVEY/ENGINEERING

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U.S. EPA REGION 10
OFFICE OF COMPLIANCE AND ENFORCEMENT

March 6, 2009

Ms. Jennifer Parker
Ground Water Unit
U. S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900, OCE-082
Seattle, Washington 98101
Phone: 206–553-1900

Re: Upper Skagit Indian Tribe, Proposed Water Reclamation Facility
Response to February 4, 2009 EPA Comment Letter

Dear Ms. Parker:

In response to the referenced EPA Comment Letter and as we discussed in the February 4, 2009 meeting we offer the following additional information and clarification.

***EPA Comment No. 1***

The proposed water reclamation plant effluent is intended to meet the federal primary drinking water standards (Standards). The water source for the Upper Skagit Indian Tribe (USIT) is Skagit County PUD No.1 Water Supply System (Water System). The Water System is regulated by the Washington State Department of Health (DOH) and monitored to demonstrate compliance with the federal primary drinking water standards. The water quality monitoring requirements for the Water System are attached. There are EPA approved State Waivers for many of the Standards established by sampling records, absence of industrial sources, and related historical experience and information. The Waivers are applicable to every source in the State. The Waivers are issued in recognition that if there is no asbestos pipe in the system then asbestos is not tested, if there are no chemical factories then certain synthetic chemicals are not tested, and if agricultural is not practiced associated herbicides are not tested.

The Proposed Water Reclamation Facility (Facility) will receive solely domestic wastewater and there are no industrial or agricultural wastewater sources for this proposal. Compliance with the Standards will be demonstrated by matching the Skagit PUD Water System monitoring requirements for primary drinking water constituents.

***EPA Comment No. 2***

During the meeting Figure 5, the geological cross-section, was reviewed to clarify the 40 foot vertical and 600 foot horizontal separation (minimum distances) between the point of discharge and the Vashon Advance Outwash aquifer. Also the attached long term monitoring data demonstrates that the aquifer level and the above listed 40 foot and 600 foot separations between the effluent discharge point and the aquifer do not fluctuate seasonally. See attached hydrographs for MW-1, MW-3, and DW-1. Hydrographs for MW-2A and MW-2B are not included because these two monitor wells have remained dry throughout the monitoring period.

The travel time of the effluent to the nearest wells exceeds 1 year as shown by the wellhead protection areas plotted on the October 2008 *Subsurface Injection Evaluation Technical Report, Figure 1*. The wellhead protection area boundaries are heavy bold dashed lines that represent 10 year time of travel for wellhead protection zones. These DOH approved wellhead protection zones illustrate that as the aquifer flows south its horizontal velocity slows down significantly as it approaches the flat terrain adjacent to the Samish River.

***EPA Comment No. 3***

Typically, three down-gradient monitoring wells are sufficient to monitor aquifer water quality. Two additional monitor wells will be installed to supplement the monitoring provided by existing monitor wells MW-1 & MW-3, providing a total of four down-gradient monitoring wells. An up-gradient monitor well is not possible as the aquifer does not exist up-gradient to the discharge as shown on Figure 5 of the Subsurface Injection Evaluation Technical Report.

***EPA Comment No. 4***

A quality assurance plan for sampling and analysis will be established.

***EPA Comment No. 5***

Water treatment and water reclamation plants use continuous monitoring of turbidity and trans-membrane pressure (TMP) differential as the real-time indicators of the treatment effectiveness and membrane integrity. In the event these parameters indicate a water quality problem, the effluent flow will be diverted to the equalization basin which will ultimately overflow into the Burlington WWTP collection system, if problem persists.

***EPA Comment No. 6***

The nature and composition of waste from any third party source will be documented to confirm that it is exempt for regulation as hazardous waste under 40 CFR 261.4.

***EPA Comment No. 7***

Equalization provided by the proposed Facility will reduce peak hourly flow rates so that the existing sewer main capacity is sufficient to carry all projected flow rates.

Please review at your earliest convenience.
Do not hesitate to call if any additional information is needed.

Sincerely,
Wilson Engineering, LLC

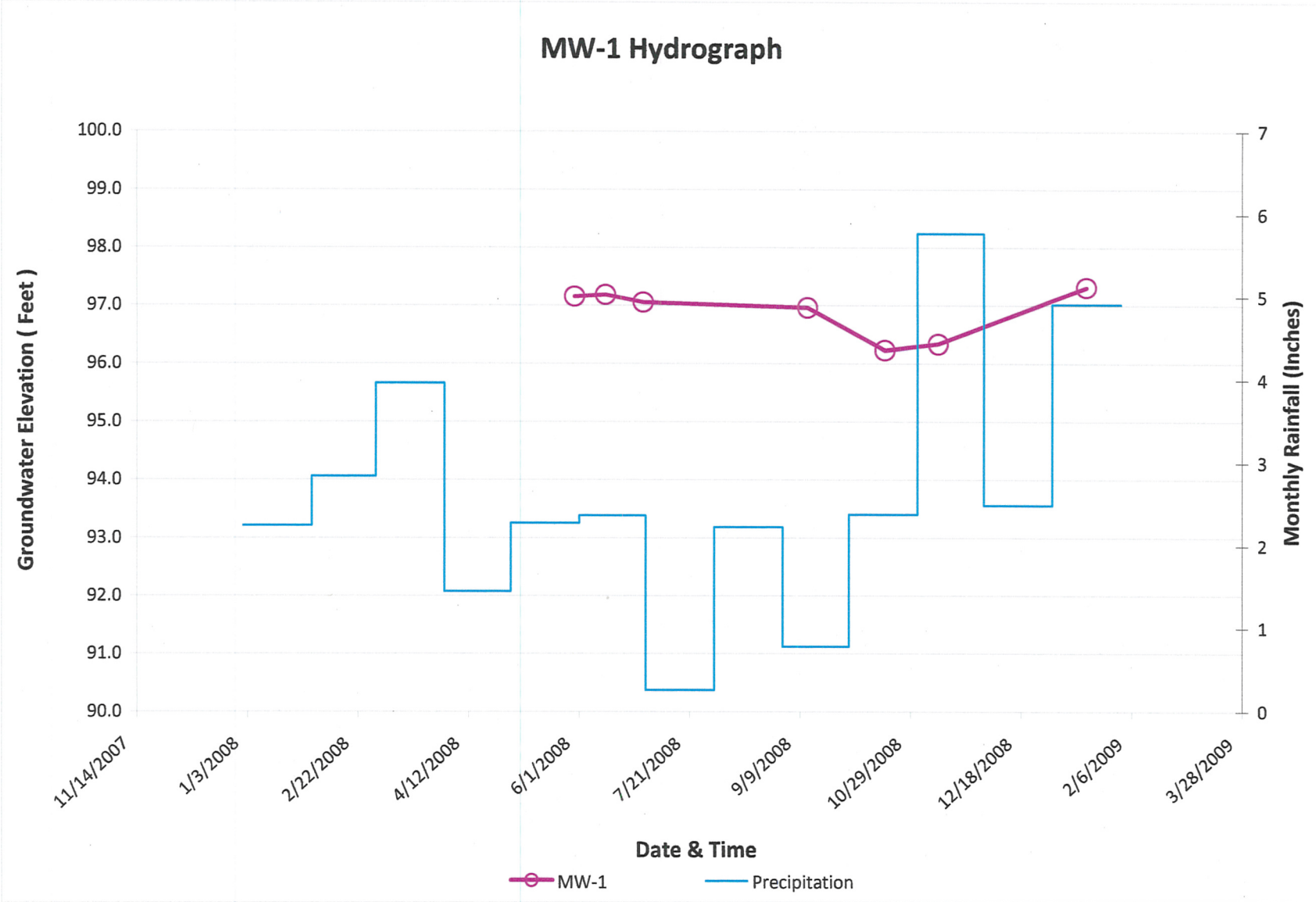
Jeffrey G. Christner

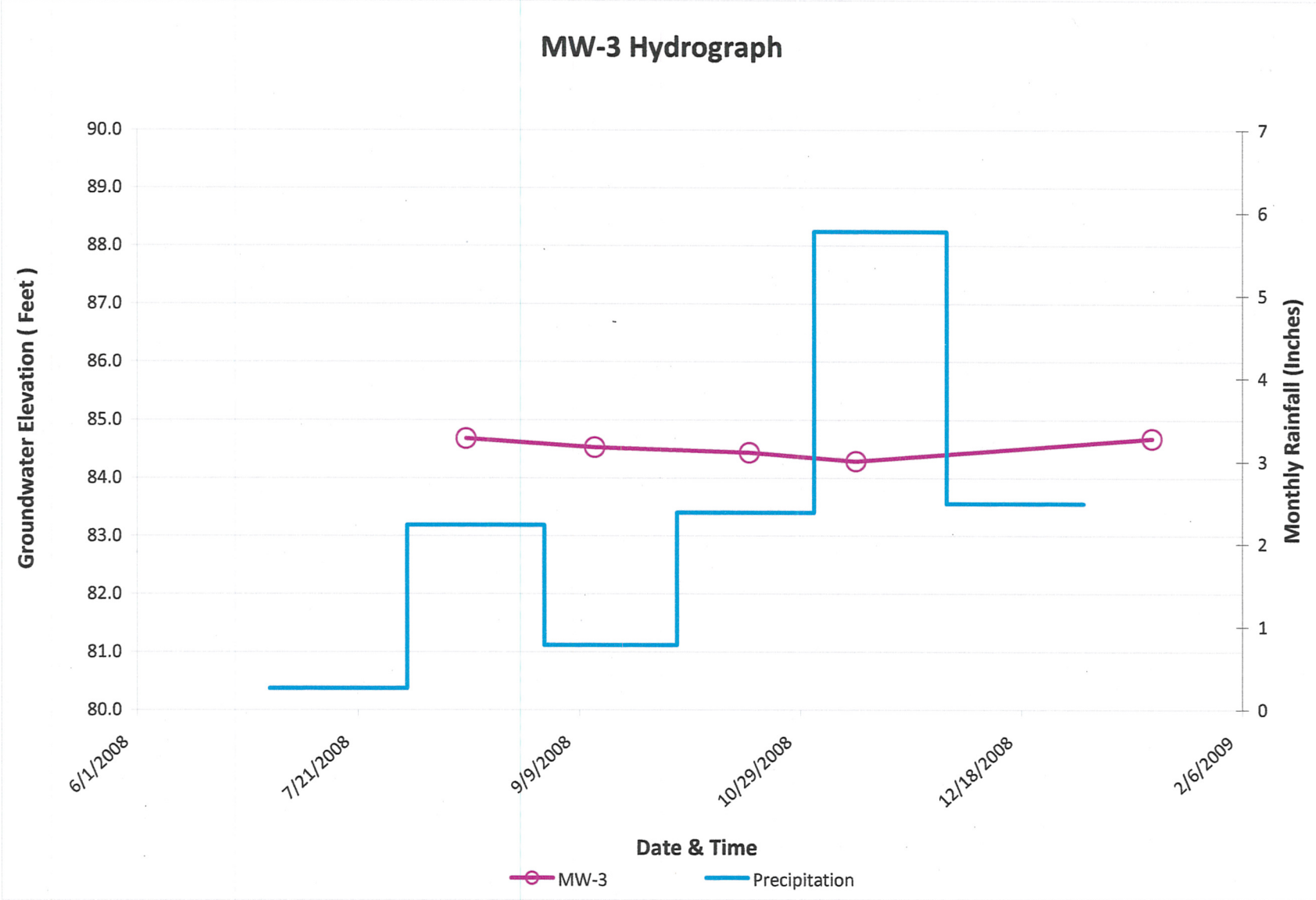
Jeffrey G. Christner, P.E.

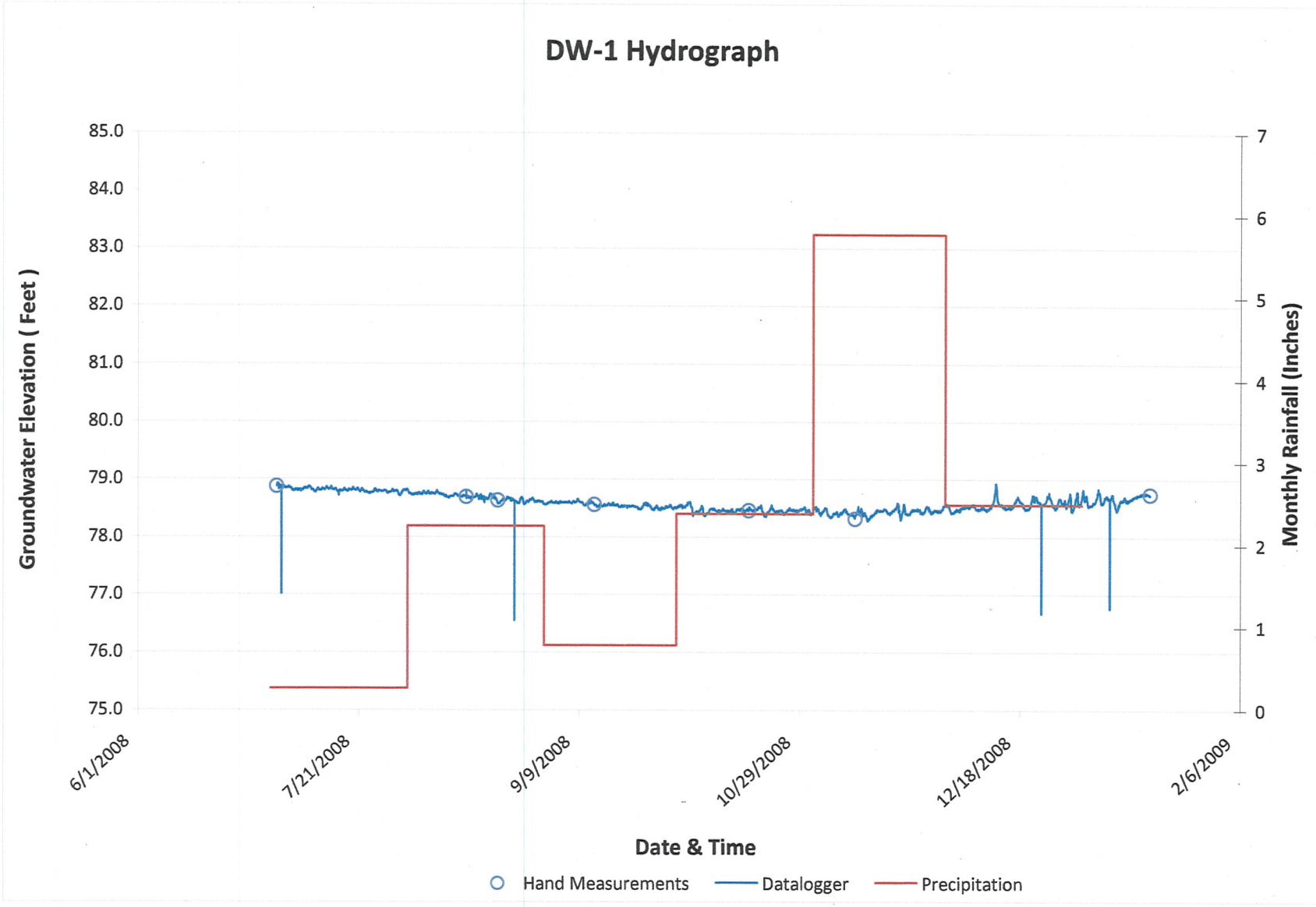
cc: Bob Hayden, Corporate Proj. Manager, Upper Skagit Indian Tribe, 5984 N. Darrk Lane, Bow, WA 98232

Attachments:

- Skagit County PUD No.1 Water Quality Monitoring Report
- MW-1 Hydrograph
- MW-3 Hydrograph
- DW-1 Hydrograph


MW-1 Hydrograph
Groundwater Elevation ( Feet )
100.0
99.0
98.0
97.0
96.0
95.0
94.0
93.0
92.0
91.0
90.0
Monthly Rainfall (Inches)
7
6
5
4
3
2
1
0
11/14/2007
1/3/2008
2/22/2008
4/12/2008
6/1/2008
7/21/2008
9/9/2008
10/29/2008
12/18/2008
2/6/2009
3/28/2009
Date & Time
MW-1
Precipitation


MW-3 Hydrograph
Groundwater Elevation ( Feet )
90.0
89.0
88.0
87.0
86.0
85.0
84.0
83.0
82.0
81.0
80.0
Monthly Rainfall (Inches)
7
6
5
4
3
2
1
0
6/1/2008
7/21/2008
9/9/2008
10/29/2008
12/18/2008
2/6/2009
Date & Time
MW-3
Precipitation


DW-1 Hydrograph
Groundwater Elevation ( Feet )
85.0
84.0
83.0
82.0
81.0
80.0
79.0
78.0
77.0
76.0
75.0
Monthly Rainfall (Inches)
7
6
5
4
3
2
1
0
6/1/2008
7/21/2008
9/9/2008
10/29/2008
12/18/2008
2/6/2009
Date & Time
Hand Measurements
Datalogger
Precipitation

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## FACSIMILE TRANSMITTAL LETTER

TO: Jeff FAX NO.: 733-6100

REPRESENTING:

NAME OF DOCUMENT: - Judy Sya - IOC, VOC & Bacteriological Results

SENT BY: Darlene Holmstrom

DATE: 2-10-09

TOTAL NUMBER OF PAGES INCLUDING THIS PAGE: 5

REMARKS: If you need further info @ anytime, please call & I will help - Thanks, Darlene

Should you have problems with this transmission,
please contact 360 424-7104

EDGE ANALYTICAL LABORATORIES

Burlington WA Corporate Office | 1620 S Walnut St - 98233
800.755.9295 • 360.757.1400 • 360.757 1402fax

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# INORGANIC COMPOUNDS (IOC) REPORT

Client Name: Skagit PUD NO. 1
P O Box 1436
Mount Vernon, WA 98273

Reference Number: 08-08422
Project: Compliance

System Name: SKAGIT COUNTY PUD #1 - JUDY RES
System ID Number: 79500E
DOH Source Number: 01
Multiple Sources:
Sample Type: A - After treatment
Sample Purpose: C - Compliance
Sample Location: Judy Res. Pumpstation
County: Skagit

Sample Number: S01
Lab Number: 04618039
Collect Date: 6/23/2008
Date Received: 6/23/2008
Report Date: 7/2/2008
Sampled By: Darlene
Sampler Phone: 424-7104
Peer Review:

| DOH# | ANALYTES | RESULTS | UNITS | SRL | Trigger | MCL | Analyst | METHOD | COMMENT |
|---|---|---|---|---|---|---|---|---|---|
| | **EPA Regulated** | | | | | | | | |
| 4 | ARSENIC | ND | mg/L | 0.002 | 0.010 | 0.010 | mvp | 200.8 | |
| 5 | BARIUM | ND | mg/L | 0.100 | 2 | 2 | mvp | 200.8 | |
| 6 | CADMIUM | ND | mg/L | 0.002 | 0.005 | 0.005 | mvp | 200.8 | |
| 7 | CHROMIUM | ND | mg/L | 0.010 | 0.1 | 0.1 | mvp | 200.8 | |
| 11 | MERCURY | ND | mg/L | 0.0002 | 0.002 | 0.002 | ccn | 245.1 | |
| 12 | SELENIUM | ND | mg/L | 0.005 | 0.05 | 0.05 | mvp | 200.8 | |
| 110 | BERYLLIUM | ND | mg/L | 0 003 | 0.004 | 0.004 | mvp | 200.8 | |
| 111 | NICKEL | ND | mg/L | 0 040 | 0.1 | 0.1 | mvp | 200.8 | |
| 112 | ANTIMONY | ND | mg/L | 0.005 | 0.006 | 0.006 | mvp | 200.8 | |
| 113 | THALLIUM | ND | mg/L | 0.002 | 0.002 | 0.002 | mvp | 200.8 | |
| 116 | CYANIDE, FREE | ND | mg/L | 0.040 | 0.2 | 0.2 | mak | SM4500-CN F | |
| 19 | FLUORIDE | ND | mg/L | 0 20 | 2 | 4 | bj | 300.0 | |
| 114 | NITRITE-N | ND | mg/L | 0 50 | 5 | 1 | bj | 300.0 | |
| 20 | NITRATE-N | ND | mg/L | 0.50 | 5 | 10 | bj | 300.0 | |
| 161 | TOTAL NITRATE/NITRITE | ND | mg/L | 0.50 | 5 | 10 | bj | 300.0 | |
| | **EPA Regulated (Secondary)** | | | | | | | | |
| 8 | IRON | ND | mg/L | 0.100 | 0.3 | 0.3 | bj | 200.7 | |
| 10 | MANGANESE | ND | mg/L | 0.010 | 0.05 | 0.05 | mvp | 200.8 | |
| 13 | SILVER | ND | mg/L | 0.010 | 0.05 | 0.05 | mvp | 200.8 | |
| 24 | ZINC | ND | mg/L | 0.200 | 5 | 5 | mvp | 200.8 | |
| 21 | CHLORIDE | ND | mg/L | 20 | 250 | 250 | bj | 300.0 | |
| 22 | SULFATE | ND | mg/L | 10 | 250 | 250 | bj | 300.0 | |
| | **State Regulated** | | | | | | | | |
| 17 | TURBIDITY | 0.11 | NTU | 0.05 | 1.0 | 1.0 | ccn | 180.1 | |
| 14 | SODIUM | 8.50 | mg/L | 5.0 | | | bj | 200.7 | |
| 15 | HARDNESS | 17.2 | mg CaCO3/L | 10 | | | bj | 200.7 | |
| 16 | ELECTRICAL CONDUCTIVITY | 81.9 | uS/cm | 10 | 700 | 700 | ccn | SM2510 B | |
| 18 | COLOR | ND | Color Units | 5 | 15 | 15 | ccn | SM2120 B | |
| | **State Unregulated** | | | | | | | | |
| 9 | LEAD | ND | mg/L | 0.002 | | 0.015 | mvp | 200.8 | |
| 23 | COPPER | ND | mg/L | 0.020 | | 1.3 | mvp | 200.8 | |

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).

MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1 3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

Trigger Level: DOH Drinking Water Response level. Systems with compounds detected in excess of this level are required to take additional samples. Contact your regional DOH office.

ND (Not Detected): indicates that the parameter was not detected above the Specified Reporting Limit (SRL).

NA (Not Analyzed): indicates that this parameter was not analyzed.

Comments:

FORM: IOC_ST

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# VOLATILE ORGANIC COMPOUNDS (VOC) REPORT

Client Name: Skagit PUD NO. 1
P O Box 1436
Mount Vernon, WA 98273

Reference Number: 06-15363

Project: Compliance

System Name: SKAGIT COUNTY PUD #1 - JUDY RES
System ID Number: 79500E
DOH Source Number: 01
Multiple Sources:
Sample Type: D - Drinking Water
Sample Purpose: C - Compliance
Sample Location: Judy Reservoir Pumpstation
County: Skagit
Sampled By: Darlene
Sampler Phone:

Field ID:
Lab Number: 04632859
Date Collected: 11/22/2006
Date Extracted: 524_061129
Date Analyzed: 11/29/2006
Report Date: 12/5/2006
Analyst: JH
Supervisor:

**EPA Method 524.2 For State Drinking Water Compliance**

| DOH# | COMPOUNDS | RESULTS | Units | SRL | Trigger | MCL | COMMENT |
|---|---|---|---|---|---|---|---|
| | **EPA/State Regulated** | | | | | | |
| 45 | VINYL CHLORIDE | ND | ug/L | 0.5 | 0.5 | 2 | |
| 46 | 1,1 - DICHLOROETHYLENE | ND | ug/L | 0.5 | 0.5 | 7 | |
| 47 | 1,1,1 - TRICHLOROETHANE | ND | ug/L | 0.5 | 0.5 | 200 | |
| 48 | CARBON TETRACHLORIDE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 49 | BENZENE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 50 | 1,2 - DICHLOROETHANE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 51 | TRICHLOROETHYLENE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 52 | P - DICHLOROBENZENE | ND | ug/L | 0.5 | 0.5 | 75 | |
| 56 | METHYLENE CHLORIDE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 57 | T - 1,2 - DICHLOROETHYLENE | ND | ug/L | 0.5 | 0.5 | 100 | |
| 60 | CIS - 1,2 - DICHLOROETHYLENE | ND | ug/L | 0.5 | 0.5 | 70 | |
| 63 | 1,2 - DICHLOROPROPANE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 66 | TOLUENE | ND | ug/L | 0.5 | 0.5 | 1000 | |
| 67 | 1,1,2 - TRICHLOROETHANE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 68 | TETRACHLOROETHYLENE | ND | ug/L | 0.5 | 0.5 | 5 | |
| 71 | CHLOROBENZENE | ND | ug/L | 0.5 | 0.5 | 100 | |
| 73 | ETHYLBENZENE | ND | ug/L | 0.5 | 0.5 | 700 | |
| 74 | M/P - XYLENE | ND | ug/L | 0.5 | 0.5 | | |
| 75 | O - XYLENE | ND | ug/L | 0.5 | 0.5 | | |
| 76 | STYRENE | ND | ug/L | 0.5 | 0.5 | 100 | |
| 84 | O - DICHLOROBENZENE | ND | ug/L | 0.5 | 0.5 | 600 | |
| 95 | 1,2,4, - TRICHLOROBENZENE | ND | ug/L | 0.5 | 0.5 | 70 | |
| 102 | ETHYLENE DIBROMIDE (EDB) | ND | ug/L | 0.02 | 0.02 | 0.05 | Screening Only / PQL 0.5 ug/L |
| 103 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | ug/L | 0.04 | 0.04 | 0.2 | Screening Only / PQL 0.5 ug/L |
| 160 | TOTAL XYLENES | ND | ug/L | 0.5 | 0.5 | 10000 | |
| | **EPA/State Unregulated** | | | | | | |

A Result of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

FORM: VOC_ST

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Reference Number: 06-15363 Page 2 of 2
Lab Number: 04832859
Report Date: 12/5/2006

# VOLATILE ORGANIC COMPOUNDS (VOC) REPORT

| DOH# | COMPOUNDS | RESULTS | Units | SRL | Trigger | MCL | COMMENT |
|---|---|---|---|---|---|---|---|
| 53 | CHLOROMETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 54 | BROMOMETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 55 | CHLOROETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 58 | 1,1 - DICHLOROETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 59 | 2,2 - DICHLOROPROPANE | ND | ug/L | 0.5 | 0.5 | | |
| 62 | 1,1 - DICHLOROPROPENE | ND | ug/L | 0.5 | 0.5 | | |
| 64 | DIBROMOMETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 65 | CIS - 1,3 - DICHLOROPROPENE | ND | ug/L | 0.5 | 0.5 | | |
| 69 | TRANS- 1,3 - DICHLOROPROPENE | ND | ug/L | 0.5 | 0.5 | | |
| 70 | 1,3 - DICHLOROPROPANE | ND | ug/L | 0.5 | 0.5 | | |
| 72 | 1,1,1,2 - TETRACHLOROETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 78 | BROMOBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 79 | 1,2,3 - TRICHLOROPROPANE | ND | ug/L | 0.5 | 0.5 | | |
| 80 | 1,1,2,2 - TETRACHLOROETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 81 | O - CHLOROTOLUENE | ND | ug/L | 0.5 | 0.5 | | |
| 82 | P - CHLOROTOLUENE | ND | ug/L | 0.5 | 0.5 | | |
| 83 | M - DICHLOROBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 85 | TRICHLOROFLUOROMETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 86 | BROMOCHLOROMETHANE | ND | ug/L | 0.5 | 0.5 | | |
| 87 | ISOPROPYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 88 | N - PROPYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 89 | 1,3,5 - TRIMETHYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 90 | TERT - BUTYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 91 | 1,2,4 - TRIMETHYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 92 | SEC - BUTYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 93 | P - ISOPROPYLTOLUENE | ND | ug/L | 0.5 | 0.5 | | |
| 94 | N - BUTYLBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 96 | NAPHTHALENE | ND | ug/L | 0.5 | 0.5 | | |
| 97 | HEXACHLOROBUTADIENE | ND | ug/L | 0.5 | 0.5 | | |
| 98 | 1,2,3 - TRICHLOROBENZENE | ND | ug/L | 0.5 | 0.5 | | |
| 104 | DICHLORODIFLUOROMETHANE | ND | ug/L | 0.5 | 0.5 | | |
| | **EPA Regulated - Under Trihalomethanes Program** | | | | | | |
| 27 | CHLOROFORM | 21.7 | ug/L | | | | |
| 28 | BROMODICHLOROMETHANE | 2.4 | ug/L | | | | |
| 29 | CHLORODIBROMOMETHANE | ND | ug/L | | | | |
| 30 | BROMOFORM | ND | ug/L | | | | |
| 31 | TOTAL TRIHALOMETHANE | 24.1 | ug/L | 60 | 60 | 80 | |
| | **State Unregulated - Other** | | | | | | |
| 0 | METHYL TERT-BUTYL ETHER | ND | ug/L | | | | |

A Result of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.

Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.

A blank MCL or SAL value indicates a level is not currently established

If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.

Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.

J - Estimated value.

FORM: VOC_ST

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Bellingham WA Microbiology | 805 Orchard Dr Suite 4 - 98225
360.671 0688 • 360.671.1577fax



# Washington State Department of Health
# WATER BACTERIOLOGICAL ANALYSIS

Client Name: Skagit PUD NO. 1
P O Box 1436
Mount Vernon, WA 98273

System Name: SKAGIT COUNTY PUD #1 - JUDY RES
System ID 79500
DOH Source Number: 00 - Distribution Sample (Bacteria)
Sample Type: D - Drinking Water
Sample Purpose: C - Compliance
Sample Location: Bow Hill Rd TS
County: Skagit
Sampled By: Darlene
Sampler Phone: 360-424-7104

Reference Number: 09-01579
Project: Compliance
Repeat Sample Number:
Lab Number: 164-03300
Field ID: 79500
Date Collected: 2/3/09 09:30
Date Received: 2/3/09
Date Analyzed: 2/04/09 11:30
Report Date: 2/4/09
Comment: Cl2: 1.26
Peer Review:

Chlorine Res:

| DOH# | PARAMETER | RESULT | UNITS | Analyst | METHOD | COMMENT |
|---|---|---|---|---|---|---|
| 1 | TOTAL COLIFORM | **Satisfactory, Coliforms Absent** | per 100mL | as | SM9223 B | |
| 3 | E. COLI | **Absent** | per 100mL | | SM9223 B | |

If the sample is unsatisfactory you can get information at the following health department websites or phone numbers:

Island Co: http://www.islandcounty.net/health/Envh/DrinkingWater/index.htm
San Juan Co: http://www.sanjuanco.com/health/ehswater.aspx
Skagit Co: http://www.skagitcounty.net/drinkingwater or 360-336-9380
Snohomish Co: 425-339-5250
Whatcom Co: http://www.co.whatcom.wa.us/health/environmental/drinking_water/index.jsp
WSDOH: http://www.doh.wa.gov/ehp/dw/Programs/coliform.htm

NOTES:

If the result is Unsatisfactory a repeat sample is required for Public Water Systems. Private individuals should investigate the cause of the unsatisfactory result and resample
If E. Coli or Fecal Coliform are present in sample do not drink the water until it is properly treated.

1.26

FORM: cBact

email: holmstrom@skagitpud.org