

M-W DRILLING, Inc.

98-140

P.O. Box 110378 • 10330 Old Seward Highway
(907) 349-8535
ANCHORAGE, ALASKA 99511

DRILLING LOGWell Owner BETHEL, CITY OF Use of Well PUBLIC

Location (address of: Township, Range, Section, if known; or distance main road _____)

CITY SUBDIVISION WATER TREATMENT FACILITY, WELL NO. 1BETHEL, AKSize of casing 10" Depth of Hole 500 feet Cased to 450.69 feetStatic water level 10 ft. ~~(above)~~ (below) land surface. Finish of well (check one) open end ();Screen (☒); Perforated ().Describe screen or perforation 10" TELESCOPING, 304SS: 0.010" SLOT, 496.21' TO 457.22', 8" BLANKWell pumping test at AND K PACKER 451.22' TO 441.19' gallons per (hour) (minute) for _____ hours with _____ ft. of drawdown from static level.

AS BUILT NOTES: 1) 43' OF 14" SURFACE CASING.

2) 14" HOLE DRILLED TO 385'

3) ANNULUS GROUTED WITH BENTONITE CHIPS

Date of completion 18 AUGUST 1999**WELL LOG**

| Depth in feet from ground surface | Give details of formations penetrated, size of material, color and hardness |
|-----------------------------------|---|
| <u>0 TO 2</u> | <u>CASING STICK UP</u> |
| <u>2 TO 26</u> | <u>SAND: BROWN, SILTY, FROZEN</u> |
| <u>26 TO 43</u> | <u>A/A: GREY</u> |
| <u>43 TO 177</u> | <u>SILT: GREY, SANDY - FINE, SOME WOOD PIECES</u> |
| <u>177 TO 190</u> | <u>BROWN ORGANICS: SANDY, FROZEN, ICE LENSES</u> |
| <u>190 TO 287</u> | <u>GREY SANDY SILT: ICE LENSES</u> |
| <u>287 TO 297</u> | <u>SILT: GREY, BROWN STREAKS</u> |
| <u>297 TO 377</u> | <u>GREY SILTY SAND</u> |
| <u>377 TO 387</u> | <u>ICE LENSES</u> |
| <u>387 TO 412</u> | <u>GREY SILTY SAND, FROZEN</u> |
| <u>412 TO 426</u> | <u>A/A: SOFTER, UNFROZEN 1?</u> |
| <u>426 TO 440</u> | <u>GREY SAND: VERY FINE, SLIGHTLY SILTY, SMALL GRAVEL STREAKS, WET</u> |
| <u>440 TO 495</u> | <u>WATER SAND: GREY, SLIGHTLY SILTY</u> |
| <u>495 TO 500</u> | <u>CLAY</u> |
| <u>TO</u> | |

24962

588-71

LAS 24337

M-W DRILLING, INC.**Well History Profile/Equipment Inventory**Client: Alaska Mechanical, Inc.Date: 09 Dec 1999Job No.: 99-143Loc'n: City Sub Wtr Trtmt FacSec: Tnshp: Rng: **GENERAL**

Owner: Bethel Water Utility Engineer: CRW
 City: Bethel County: State: Alaska
 Contact: Phone:
 Well Used for: Class A Public
 Date Drilled: Oct/Nov 99 Date in Service:

Well No.: One

All depths below top of casing

CONSTRUCTION

Drill Method: Cabletool Aquifer Type: Sand TD: 500 feet
 Type Screen: "V" Wire Gravel Pack (Y/N): N Other: Natural
 Drill Fluid Type: Water Developed by: Surgeblock
 Chemicals Used: None

MATERIALS

Surface Csg OD: 14" Depth: 45 Matl: A53 stl Seal: Bentonite
 Pump Csg OD: Depth: Matl: Seal:
 Prod Csg OD: 10 3/4" Depth: 450.69 Matl: A53 Seal: Bentonite
 Screen OD: 9.5" Slot: 0.010" Matl: Stainless Gravel Pack Size: N/A
 Packers/Plugs: Fig K @ 441'

ORIGINAL TEST DATA

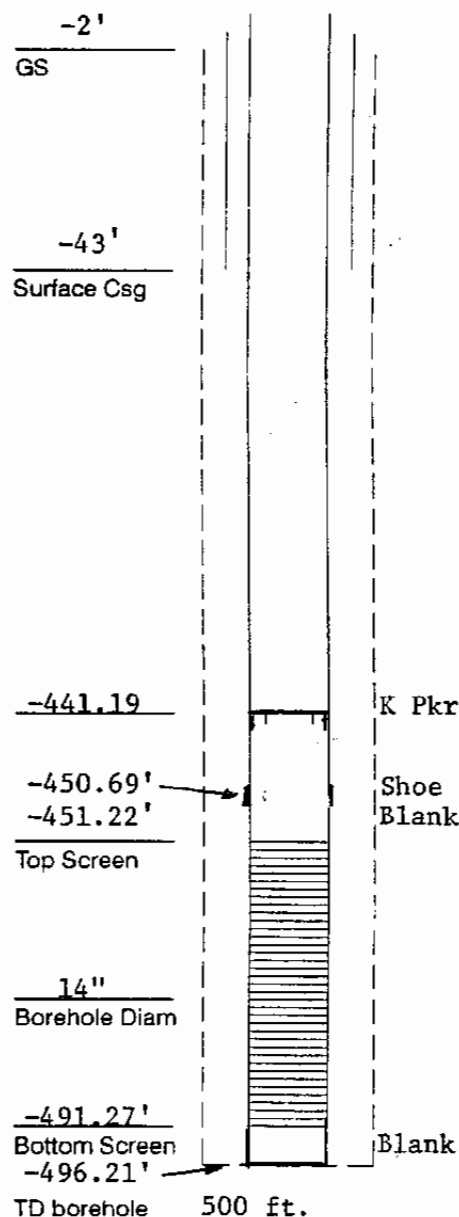
Static Level: 25.4' Pumping Level: 71.4' Drawdown: 46'
 GPM: 410 Duration: 24 hrs Recovery: 1 hr
 Specific Capacity: 8.9 GPM/Ft Sand Content: 0
 Turbidity: Other:

PUMP & MOTOR

Type: GPM: TDH: PSI (dis):
 Pump Mfg: Model No.: Serial No.:
 Bowl OD: Stgs: HD/Stg: Pump Eff:
 Column OD: Tube: Shaft: Wire Size:
 Motor Mfg: HP: RPM: Volt:
 Amps: (Lock) (Full Load) SF: PF: Eff:

Recent repair history/treatment/test data:

Date last serviced: Reason:
 SWL: PWL: GPM: PSI:
 DD: Specific Capacity: Duration:
 Last treated: How:
 Results:



Probably under to LAS 24338

Probably same as before

M-W DRILLING INC - TEST PUMP REPORT

Job No. 99-143

Sheet 1 of 2
Date: 30 Nov 99

Conducted by: M-W Drilling, Inc. - Bill Sommerville & Dick Phillips
 Owner: City of Bethel Address: Bethel, Alaska
 Well Location: In building at City Subdivision Water Treatment Facility - Well No. 1
 Well Information: Ttl. depth Depth of casing Screen from To
 Casing size Screen Diam Screen slot
 Remarks See Well log & Profile for above info; flowmeter used
 Pump Information: Intake depth 89' Pump size 30 HP Sub Air line depth Electric
 Static water level 25.4' Av. discharge 410 GPM, max. drawdown 48'
 Pump on: Time 1545 hrs Date 11-05-99 Pump off Time 1600 hrs Date 11-06-99

| TIME | WATER LEVEL | PIEZO-TUBE | FLOW GPM | REMARKS | TIME | WATER LEVEL | PIEZO-TUBE | FLOW GPM | REMARKS |
|------|-------------|------------|----------|---------|------|-------------|------------|----------|---------------|
| 1545 | 25.7 | | 425 | Startup | 1820 | 71.35 | | 410 | |
| 46 | 67.5 | | | | 50 | 71.3 | | | |
| 47 | 72.1 | | | | 1920 | 71.4 | | | |
| 48 | 72.8 | | | | 50 | 71.4 | | | |
| 49 | 73.6 | | 400 | | 2050 | 71.85 | | | |
| 50 | 71.5 | | | | 2150 | 71.95 | | | |
| 5555 | 72.1 | | | | 2250 | 71.8 | | 415 | |
| 1600 | 72.55 | | | | 2350 | 73.5 | | | |
| 05 | 71.4 | | | | 2450 | 73.7 | | | |
| 10 | 71.45 | | | | 0150 | 73.7 | | | |
| 15 | 71.45 | | | | 0250 | " | | | |
| 20 | 71.5 | | | | 0350 | " | | | |
| 30 | 71.75 | | | | 0450 | 71.25 | | 410 | Adjusted down |
| 40 | " | | | | 0550 | 71.2 | | | |
| 50 | " | | | | 0650 | 71.00 | | 405 | |
| 1700 | " | | | | 0750 | 70.95 | | 410 | |
| 10 | 71.9 | | 410 | | 0850 | " | | | |
| 20 | 72.05 | | | | 0950 | 70.7 | | | |
| 50 | 71.25 | | 400 | | 1050 | " | | | |

M-W DRILLING INC - TEST PUMP REF RT

Job No. 99-143

Sheet 2 of 2Date: 30 Nov 99Conducted by: M-W Drilling, Inc.Owner: City of Bethel Address: Well Location: City Subdiv WTF - Well No. 1Well Information: Ttl. depth Depth of casing Screen from To Casing size Screen Diam Screen slot Remarks See sheet no. 1Pump Information: Intake depth Pump size Air line depth Static water level Av. discharge GPM, max. drawdown Pump on: Time Date Pump off Time Date

| TIME | WATER LEVEL | PIEZO- TUBE | FLOW GPM | REMARKS | TIME | WATER LEVEL | PIEZO- TUBE | FLOW GPM | REMARKS |
|------|----------------|----------------|-------------|----------|------|----------------|----------------|-------------|---------|
| 1150 | 70.8 | | 415 | | 1614 | 28.0 | | | |
| 1250 | 70.9 | | | | 15 | 28. | | | |
| 1350 | " | | | | 16 | 27.9 | | | |
| 1450 | 70.95 | | | | 17 | 27.8 | | | |
| 1550 | 71.3 | | | | 18 | " | | | |
| 1600 | 71.3 | | | Shutdown | 19 | 27.7 | | | |
| 1601 | 32.6 | | 9 | Recovery | 20 | 27.6 | | | |
| 02 | 30. | | | | 21 | " | | | |
| 03 | 29.7 | | | | 22 | " | | | |
| 04 | " | | | | 23 | 27.5 | | | |
| 05 | 29.6 | | | | 24 | 27.4 | | | |
| 06 | 29.4 | | | | 25 | " | | | |
| 07 | 29.1 | | | | 26 | " | | | |
| 08 | 29.9 | | | | 27 | 27.3 | | | |
| 09 | 28.8 | | | | 28 | " | | | |
| 10 | 28.6 | | | | 29 | " | | | |
| 11 | 28.4 | | | | 30 | " | | | |
| 12 | 28.3 | | | | 40 | 27.0 | | | |
| 13 | 28.1 | | | | 50 | 26.8 | | | |

1700 26.8

