

STATE OF ALASKA 24963 DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND & WATER Alaska Hydrologic Survey

WATER WELL LOG Revised 08/18/2016

Drilling Start	ed:/		eted: <u>4 / 10 / 1999</u> Pump Install://						
City/Borough	Subdivision	Block	Lot Property Owner Name & Address						
Lower Kuskokwim REAA			CITY OF BETHEL ,						
Well location: Latitude 60.		•	Longitude -161.776317						
Meridian S Towns	ship <u>008N</u> Range <u>071\</u>	V Section	n <u>08</u> , <u>SW</u> <u>1/4 of <u>SE</u> <u>1/4 of <u>NW</u> <u>1/4 of <u>NE</u> <u>1/4</u></u></u></u>						
BOREHOLE DATA: (from g Suggest T.M. Hanna's hydrog https://my.ngwa.org/NC Prod	eologic classification s uct?id=a185000000BYub D	<u>3AAD</u> epth	Drilling method: ☐Air rotary, ☐Cable tool, ☐Other ☐Well use: ☐Public supply, ☐Domestic, ☐Reinjection, ☐Hydrofracking ☐Commercial, ☐Observation/Monitoring, ☐Test/Exploratory, ☐Cooling, ☐Irrigation/Agriculture, ☐Grounding, ☐Recharge/Aquifer Storage,						
	<u>From</u>	<u>To</u>	1 <u> </u>						
			☐ Heating, ☐ Geothermal Exploration, ☐ Other						
			Fluids used: ft Casing stickup: ft						
			Casing type: inches						
			Casing type inches Casing thickness inches						
			Liner type: Depth: ft Diameter:inches						
			Note: CASE TO 437.4 FT, SCREEN TO 491 FT. FROZEN OVER 400 FT						
			Well intake opening type: ☐ Open end, ☐ Open hole, ☐ Other screened						
			Screen type:, Screen mesh size:						
			Screen start: ft, Screen stop: ft, Perforated ☐Yes ■ No						
			Perforation description: Perf from: ft, Perf						
			to:ft, Perf from: ft, Perf to: ft						
			Gravel packed ☐Yes						
			Note:						
			Static water (from top of casing): 125 ft on/ Artesian well						
			Pumping level & yield: feet after hours at 390 gpm						
			Method of testing:						
			Development method: Duration:						
			Recovery rate: gpm Grout type: Volume						
			Depth: Fromft, Toft						
Include description or sketch of	well location (include roa	nd names,							
buildings, etc.):	,		Final pump intake depth: ft Model:						
			Pump size: hp Brand name: Was well disinfected upon completion? Yes No						
			Method of disinfection:						
			Was water quality tested? Yes No						
			Mater drality baseness tested.						
			Water quality parameters tested: Well driller name: WAYNE WESTBERG						
			Company name: M-W DRILLING						
			Mailing address: PO BOX 110378						
		^	City: ANCHORAGE State: AK Zip: 99511						
		North	Phone number: (907) 945 - 3287						
AS 41.08.020(b)(4) and AAC 1 copy of the well log be submitted	ed to the Department of I	Natural	Driller's signature:						
Resources within 45 days of v be submitted using the online v		s may	Date:/						
available at:	- , - ,		Anchorage Municipal Code 15.55.060(I) and North Pole Ordinance 13.32.030(D) require that a copy of this well log be submitted to the Development Services Department/City within 30 days of well completion.						
https://dnr.alaska.gov/we	elts/		•						
OR email electronic well logs t	0		City Permit Number: Date of Issue:/						
dnr.water.reports@alask	a.gov		Parcel Identification Number:						

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

DRILLING LOG

Well Owner CITY OF B	Use of WellPUBLIC
Location (address of:	Fownship, Range, Section, if known; or distance main road
	S WATER TREATMENT FACILITY, WELL #2
GPS LOCATION:	60 DEGREES 48.097 N, 161 DEGREES 46.553 W, BETHEL, ALASKA
Size of casing 8" Depth	of Hole 492 feet Cased to 437.44 feet
	(#boxe) (below) land surface. Finish of well (check one) open end ();
Screen (X); Perf	forated ().
` •	SERVICE 30465, 0.10" SLOT: 439.38' TO 490.96'
Well pumping test at 390 of drawdown from stati	gallons per (hour) (minute) for 24 hours with 43.5 ft. ic level.
Date of completion 10 APRI	IL 1999
	WELL LOG
Depth in feet from	
ground surface	Give details of formations penetrated, size of material, color and hardness
0 TO 2	CASING STICK UP
2 TO 7	SAND: FINE/PUTTY
7 TO 12	BEACK SAND: ORGANICS, FINE
12 TO 27	GREY SAND: CLAYEY, BLACK STREAKS, STRINGY
27 TO 42	AS ABOVE: ICE LENSES
42 TO 385	STAT: GREY, FINE SANDY, DRILL CUTTINGS ARE LIKE A
ТО	SANDY MORTAR MIX; ICE CRYSTALS ON STEM
385 TO 430	BROWN GREY SAND: SIBTY, ICE LENSES AND CRYSTALS
430 TO 492	SAND: FINER RELATIVELY CLEAN, WATERBEARING
ТО	
ТО	NOTE: COULD NOT TELL EXACTLY WHERE PERMAFROST ENDED
ТО	IF THAT WAS ABOVE 430'.
то	10 St.
то	Mayre Hung
то	
	Certified Contractor

NWWA Certified Contractor No's. 814 & 9

2-STATE

Client: ALASKA MECHANICAL, INC GENERAL Owner: CITY OF BETHEL Engineer: C.R.W. City: BETHEL County: State: AK Contact: MIKE RABE Phone: 562-3252	No.: 98-1 'n: BETHET Trish	L HIS W		
GENERAL Owner: CITY OF BETHEL Engineer: C.R.W. City: BETHEL County: State: AK Contact: MIKE RABE Phone: 562-3252 Well Used for: PUBLIC	::Tnsh	np: Aı		
Owner: CITY OF BETHEL Engineer: C.R.W. City: BETHEL County: State: AK Contact: MIKE RABE Phone: 562-3252 Well Used for: PUBLIC	ell No.:			
City: BETHEL County: State: AK Contact: MIKE RABE Phone: 562-3252 Well Used for: PUBLIC We	ell No.:			
	depths below		sina	
CONSTRUCTION	200110 201011		_	
Drill Method: CABLETCOL Aquifer Type: SAND TD: 492* Type Screen: SS "V" WTRE Gravel Pack (Y/N): N Other: NATURAL GS Drill Fluid Type: WATER Developed by: SIRGEBLOCK Chemicals Used: NONE	2'			·
MATERIALS		$i \mid i \mid i$!
Surface Csg OD: 12.75 Depth: 77.19 Matt: STEEL Seal: FROZEN	' -77.19' ace Csg			- ·
ORIGINAL TEST DATA				,
Static Level: 17' Pumping Level: 56' Drawdown: 43.5' GPM: 390 Duration: 24 HOURS Recovery: 15 MINUTES Specific Capacity: 9 Sand Content: NONE Turbidity: CLEAR Other:	•			
PUMP & MOTOR 213.	<u> </u>			
Type: SUB GPM: 400 TDH: 250 PSI (dis): — Pump Pump Mfg: GRUNDFOS Model No.: 38S400-4 Serial No.: 98-08-37A IN. Bowl OD: 6" Stgs: HD/Stg: Pump Eff: 428 Column OD: 472-70 TA/240' Shaft: Wire Size: 439	np Set - TAKE 8.67' 9.38' Screen		1	Polario
Recent repair history/treatment/test data:	" - 380'		∄i	
10 ¹	-492' ehole Diam			0,000 ***
DD: Specific Capacity: Duration: 490	0.96¹ om Screen			
Form WRP 0182 (ev. 10/98 AS BUILT NOTE: 1) 10" CASING LOST IN HOLE(99.75') FROM 380' - 280.25'	porehole <u>4</u>	192'		

M-W DRILLING, INC.

TEST PUMP REPORT

	AND BILL S.						SIEF	P DD TEST	
Owner CITY (OF BETHEL	Address							
Well location BE	THELEHTS WIF, WELL#2	303	or	ATION	N 100°	48.12	٩	W 1610 46.59	}
Well Information:	Ttl. DepthDepth of Cisting	_Screen	From_	то					
	Casing SizeScreen Diem	_Screen :	Slot						
Pump Information:	Casing SizeScreen Diem intake Depth 210' Pump Size & Model	40HP	C-1	6200884	-9835		acxx	XXXXX ELECTRI	<u>C</u>
	Dischig Pipe: 6"	_Orifice	Size:_	<u>4''</u>			, Rema	arks:	
	Static Water Level 15.70	_ Av. Dis	charge.				GPM.	Mex. Drawdown	
Pump On:	Time 1840 Det 4/8/99	_Off;	-	Time_20	06		D_	4/8/99	

AMP 49									· · · · · · · · · · · · · · · · ·		
TIME	ELAPSED	WATER LEVEL	PIEZO- TUBE	FLOW GPM	MEMARKS	TIME	ELAPSED TIME	WATER	ア(ミズウ・ てい会長	FLOW GPM	HEMARKS
1840		52.20	8.5"	182	LOWER VAIVE						· · · · · · · · · · · · · · · · · · ·
1400	20 MIN	52.15)							
1902	2 MIN	54.02	20.5"	290	+ VALUE ADJUST						
1903		54.05		}							
1408	5010	52.05	20.5"	290	WATER TEMP 34.0						
1920	12 MIN	52.40	37"	390		<u> </u>					
1927	7 11 11	55,20'		<u> </u>			<u> </u>				ļ
1435		54.00'				ļ		 _			
2000	25 10	57.00'	37"	390		ļ		ļ		<u> </u>	<u> </u>
	6 ~11~				SHUT DOWN PUMP			ļ			<u> </u>
2007		20.00				<u> </u>					
2008		23.00					ļ			·	
2009		22.00'									
2010		21.50									
2011		21.10		ļ							
2012		20.90			· · · · · · · · · · · · · · · · · · ·						
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M-W DRILLING, INC.

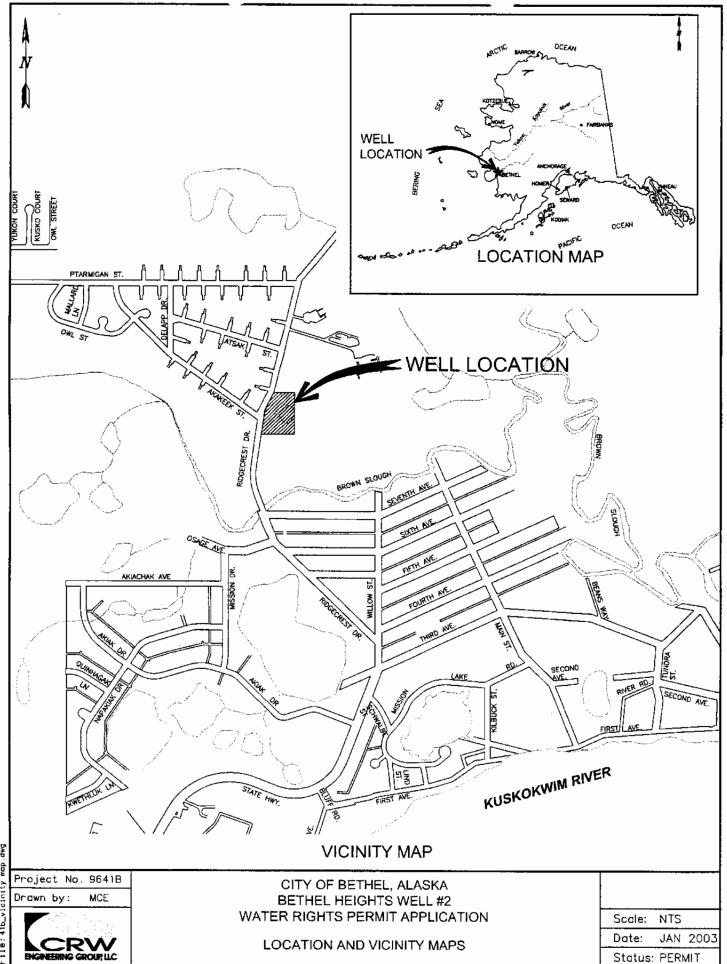
AN MEUH INC

TEST PUMP REPORT

GARY F. AND BILL S.		
Owner CITY OF BETHEL	_ Address	
Well location BETHEL HTS WIF WELL #2		
Well Information: Til. Depth 492 Depth of Casing 437	44 44 439.8 To 490.96	
Casing Size 811 Screen Dlam 8T	Screen Stor 0.010" SLOT	
Pump information: Intake Depth 2101 Pump Size & Model	40HP SUBMERSTBLE	AIF LINE DEPTH ELECTRIC
Dischg.Pipe: 61	Orlfice Size: 411	Ramarks:
Static Water Level 12.5'	Av. Discharge 390	GPM, Max. Drawdown
Pump On: Time 0837 Date 4-9-99	_off: Time 0900	Date 4-10-99

WELL INSIDE PUMPHOUSE IN USE AT 320 GPM

ELAPSED WATER PIEZO- FLOW SLAPSED WATER PIEZO- FLOW											
TIME	ELAPSED TIME	LEVEL	PIEZO- TUBE	FLOW GPM	PEMARKS	TIME	TIME	LEVEL	TUBE	FLOW GPM	REMARKS
0837		12.50			START UP	0901	المريما	29.30			RELOVERY
0839	2: 410	59.00	ر ما	385	+ VALVE ACTUST	0902		24-10			
0840		59.05	פ"ר 3	390	LOW TIDE	0403		23.30			
0841		59.05		Ţ		0904		22.20			
08-12		59.10				0405		21.80			
0843	7 .	59.20	34"	400		0410	5 MIN.	ישורי			
084 B	5 MIN	63.20'	37"	390	NOTICE ADJUST	0915	SMIN	15.70			
0953		61.70									
0858		61.90"									
20 00		61.60	37+"		PIEZO FLEX: 37'-37.5"						
8000		61.30									
8195	\	61.15									
0923	10712	43.ZO									
0933		.63.25									
0943		63.23				[]					
O9 53		63.20									
1003		رع.20	7							$\neg \neg$	
1013		63.20									
1043	30 000	63.20°									· · · · · · · · · · · · · · · · · · ·
1113		6-1-10							-		
1143		56,90'	7 1								
1213)	54.70	/						-		
1243		ζ 14.00 '	/								
1343	60 mm	55.30"	7								
ાનવ 3		56.40									
1543	1	57.00									
1643		56.45									
1743		55.10								-	
1843		56.55									
1943		56.10	/								
2043	· · · · · · · · · · · · · · · · · · ·	56,15	/								
2143		56.15	1			-					
2243		56-10	1	· · ·							
2343	1	56.10									
0043	1	56.10									· · · · · · · · · · · · · · · · · · ·
0143		54.05	-	 					——— —		
0243	1	56.10			PIEZOTJBE FROZE						
0343	1	51.10'	7		PUT HEAT NEXT TO IT						
0443	1	56.10									
0543		54.15				 					
0643		56.15									
0743		56.15									
0843		56.15	37"	390							
	17~12	56.15			SHUT DOWN PUMP						



le: 4th vicinity man