

URS
Corporation
Anchorage Alaska

Water Supply Analysis Study Well Fredreka Boring Log & As-Builts



ORILLEO BY: M-W Drilling, Inc. DRILLING METHOD: Air Rotary REFERENCE ELEVATION: CASING: GROUND:	GRAPMC LOG	HYDROGEOLOGIC LMIT	WATER LEVEL	DEPTH (IN FEET)	SAMPLES	AS-BUILT	
					SOL S	42 ft	Track welded cover plate
oist, brown, silty, peaty, fine SAND with bundant basalt boulders.	30				S-	1172711	Steel Casing 10-IN. ID.
asalt BOULDERS; black, dry	William The Willi			10	s-	11 FT:	TO-IN. ID.
BASALT: gray to black, dry					S	- 18 FT	Surface Seal c/8 Grout
				20	S-		
	公约			30	S- S-		Steel Casing 8.00-14. J.D. 8.69-1H. O.D.
		WTED			S-		
BASALT; fractured	N. W.	UNSATURATED		4 0			
ost return of cuttings.	N. S.				П.		
SASALT – drilling action indicated fractured	1 272		<u>-¥</u>	50	IN AT 42		
BASALT - drilling action indicated heavily fractured rock	とは、	ined to Aquifer] T	60	CIRCULATION	60.8 FT —	Blank Casing
	18	Semiconfine Confined Aq	:		LOST CI	64.1 FT _	with Neoprene Packe
ASALT - drilling action Indicated less	· · · · · · · · · · · · · · · · · · ·	Son		70			-8-IN. telescoping 60-slotJohnson Stainless Steel Screen
ractures	がたが			80			Open Bottom
Γotal Depth 85 ΕΕΕξ	- K.					82 FT ——	`
				во		12-IN	I.]

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Cityo f St. Paul Water Supply Analysis Study

Well Fredreka ∥ Boring Log & As-Built s

39,98 TOP OF CASING ELEV: 42.20 -- 0 PITLESS ADAPTER INSTALLED AT +1.5' FILL RED SCORIA STEEL CASING 10 INCH I.D. -10 -LAVA BOULDER LAVA, ROTTEN XX' 3 INCH DIAMETER GALV PIPE WITH 1/2" PVC CONDUIT INSTALLED -20 -SURFACE SEAL AJ PACKER UNSATURATED STEEL CASING 8.00 INCH I.D. 8.69 INCH O.D. - 30 -ENVIROPLUG SEAL BASALT, HARD LAVA, BROKEN BASALT, HARD 40 BASALT, VERY HARD BASALT, HARD 45.15' TOP OF SCREEN S-4 TO CONFINED AQUIFER BASALT, CREVASED 18" PACKER S-5 50 LAVA, BROKEN, VESICULAR GRAVEL PACK S-6 BASALT, HARD, FINE GRAINED RED JACKET MODEL 6D250 4 STAGE, C TRIM 3450 RPM, 60 HZ 10 HP, 480V PUMP TO BR INSTALLED LAVA, POROUS, AND FINES SEMICONFINED S-7 -60 BASALT, CREVASED 66.00' BOTTOM OF SCREEN 67' BOTTOM OF HOLE

DESIGNED: CHECKED: MDB NTS ABF 3 FILE: -

alaska, inc. polarconsult

ENGINEERS . SURVEYORS . ENERGY CONSULTANTS

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DRAWING

FREDREKA 3 AS-BUILT

PROJECT

ST. PAUL WATER AQUIFER

SHEE

TOP OF CASING ELEV: 42.20' PITLESS ADAPTER INSTALLED AT 1' FILL 2 LAVA BOULDERS AND SOIL LAVA LAVA, ROTTEN (BROWN) -10 -LAVA, SOFT LAVA CREVASES LAVA, SOFT SURFACE SEAL AJ PACKER LAVA, ROTTEN (BROWN) -20 STEEL CASING 8.00 INCH I.D. 8.69 INCH O.D. 47' 3 INCH DIAMETER GALV PIPE WITH 1/2" PVC CONDUIT INSTALLED LAVA, LAVA CREVASES AND HARD ROCKS UNSATURATED -30 S-1 ENVIROPLUG SEAL 40 LAVA, MEDIUM HARD BASALT, HARD LAVA, BROKEN GRAVEL PACK AROUND CASING AND SCREEN LAVA, HARD AQUIFER BASALT, VERY HARD (BLACK) FINE GRAINED 50.05' TOP OF SCREEN CONFINED -50 ဥ RED JACKET MODEL 6D250 4 STAGE, C TRIM 3450 RPM, 60 HZ 10 HP, 480V PUMP INSTALLED BASALT, CREVASSED SEMICONFINED -60 -70 70.00' BOTTOM OF SCREEN 70.5' BOTTOM OF HOLE

DATE: 3/11/94

DFSIGNED: AK

DRAWN: DJR

CHECKED: MDD

SCALE: NTS

FILE: ABF4

polarconsult alaska, inc.

ENGINEERS • SURVEYORS • ENERGY CONSULTANTS

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PHONE (907) 258-2420 FAX (907) 258-2419 DRAWING

FREDREKA 4 AS-BUILT

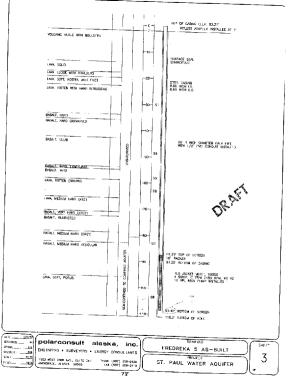
PROJECT

ST. PAUL WATER AQUIFER

SHEET

2

OF



SOUTH WELL DEATH OF WELL 6" CASING 76-102 WATER SURFACE 86-04 BOTTOM OF PUMP (EUREEN) TURBINE CONL TYPE Pump SUB MERGENCE (APPROX.) INTAKE TO BOTTOM OF WELL (APPROX.) SCREEN LOCATION -76"10'2"-WATER -PUMP SCREEN ->

water Supply

15000

Recently three wells have been drilled for a water supply. These wells may be described as: Well No. 1, cased - 8 inch to 35 feet, total depth 79' 6"; Well No. 2, cased - 8 inch and 6 inch, to total depth of 40 feet; Well No. 3, cased - 8 inch to 51 feet, total depth 91 feet.

Well No. 1 did not prove satisfactory and has been abandoned. Well No. 2 apparently has a sufficient supply of water, however, the gasoline driven turbine pump is of insufficient capacity to provide an adequate supply of water to the reservoir seme 2½ miles distance from the well site. Well No. 3 was completed during my inspection of the area and in checking the pumping capacity of the unit it was found that the pump would fill a reservoir with expressmately 175,000 gallons in 26½ hours, establishing a pumping rate of 6,500 gallons per hour.

It is recommended that Well No. 2 be equipped with a gaseline driven turbine pump similar to that utilized by Well No. 3 in order that we may have a standby pumping unit in case of failure of well No. 3. The writer is of the opinion that it will be necessary to construct at least one more 200,000 gallon concrete reservoir to replace the present wood reservoirs being utilized. Asservoir sapacity requirements will again be recomputed them the over-all development plan for St. Paul begins to take concrete form. In any event, it is recommended that the old Gup and Sancer lake water pumping facilities be cut off from the new water supply lines to prevent contamination of the new water supply. The only justification for maintaining the Cup and Saucer lake pumping stations is that it would give some advantage in the case of high pumping capacity needs for fire fighting supply.

The writer was advised that during the winter months the inside of the new concrete water reservoirs were lined with approximate—
ly 32 inches of ice on the side walls. Variance in water levels prevented the forming of exceptionally thick ice on top. It is recommended that additional fill be placed on the outside of these concrete reservoirs in order to retard the forming of ice on the inner walls, as continued freezing of this nature will undoubtedly result in the deterioration of the concrete. Future reservoir construction should give consideration to placing the greater portion of the reservoir below the ground line.