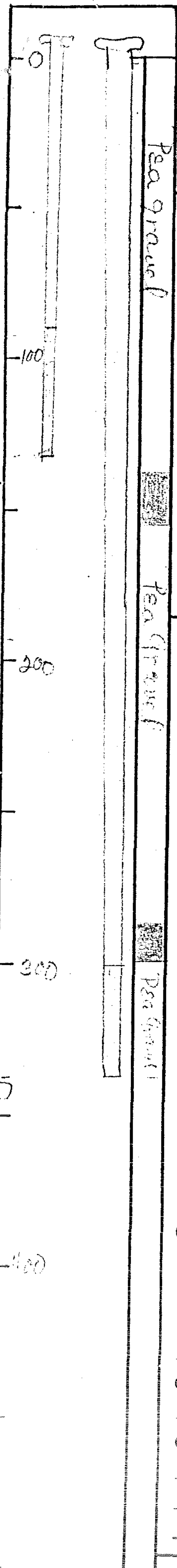
LOCATION Milford Utah
PERSONNEL B. Coy, R. Whitworth
PROJECT NV Water Resources Valley Fill Drilling



GL04776

WELL M D-VF- -0-1

WELL CONSTRUCTION SUMMARY

LOCATION or COORDS: T31S, R13W, Sec5bb Iron County, Utah

ELEVATION: GROUND LEVEL 5060

TOP OF CASING 5062

DRILLING SUMMARY:

TOTAL DEPTH 342 ft

BOREHOLE DIAMETER 9"

DRILLER Russ Mangelsen, Andrew MacPhearsen

RIG Chicago Pneumatic RT-1800

BIT(S) 9" tricone, milltooth

DRILLING FLUID Baroid Quik Gel Bentonite

SURFACE CASING none

CONSTRUCTION TIME LOG:

TASK	START DATE	START TIME	FINISH DATE	FINISH TIME
DRILLING:	11/22/80	0935	11/22/80	1425
GEOPHYS. LOGGING:	11/23/80	0205	11/23/80	0820
CASING:	11/23/80	0930	11/23/80	1145
FILTER PLACEMENT:	11/23/80	1145	11/23/80	1400
CEMENTING:				
DEVELOPMENT:	11/23/80	1430	11/23/80	
OTHER:				

WELL DESIGN:

BASIS: GEOLOGIC LOG ✓ GEOPHYSICAL LOG ✓

CASING STRING(S): C=CASING S=SCREEN

From	To	Type
0	300	C_1
300	342	S_1
0	95	C_2
95	133	S_2

CASING: C1 deep 2½ ID piezometer casing

C2 shallow 2½ ID piezometer casing

C3

C4

SCREEN: S1 deep 2½ ID slotted piezo. scr.

S2 shallow 2½ ID slotted piezo scr.

S3

S4

CENTRALIZERS none

FILTER MATERIAL pea gravel 0-340 ft

CEMENT Surface grout

OTHER Plugs emplaced 280-300 ft, 140-160 ft

WELL DEVELOPMENT

- Surging began w/ muddied water emerging from pipe
- jet was moved up & down through screened intervals in both shallow & deep piezometers
- 300 gal/min

COMMENTS:

- Casing cut 2 ft above grd surface
- Shallow piezometer yielded upon air lift ≈ 30 gal/min
- Static W.L. in shallow piezometer = 28 ft
- No static observed in deep piezometer

M-D-VF- -0-1

PROJECT Mtn Water Resources Valley Fill Drilling FY81

LOCATION Milford Utah

LOGGED BY B. Ardy / R. Whitworth

LOC. or COORDS. T31S, R13W, Sec 5bb Iron County, Utah

GROUND ELEV. 5060 ft

TOTAL DEPTH 342 ft

BOREHOLE DIAM. 9 inches

DRILLER Andrew MacPhearson, Russ Mangelson

RIG Chicago Pneumatic RT-1800

BIT(S) double cone mill tooth

FLUID Bentonite Mud

	START	FINISH
DATE	11/22/80	11/22/80
TIME	0935	1425

GEOPHYS. LOG ✓ YES ___ NO

HOW LEFT cased & developed

DEPTH	PENE. RATE	CIRC RET	CIRC LOSS	AIRLIFT Q (gpm)	MATERIAL	SYMBOL	DESCRIPTION and COMMENTS
0 ft	10 min				Silty clay ~~Clay w/ some gravel~~		Silty clay ~~Clay w/ some gravel~~; (0-10 ft) ( ); (w 10yr 7/3) (d); 45% clay, 35% silt, f to ~~go~~ sd 10% ([illegible] 20% qz, 15% GR, 3% mafics); grl up to [illegible] mm (45% carb, 30% qz, 20% GR, 5% mafics); p.s.; sd-[illegible] to [illegible]; grl-[illegible] to [illegible]; structureless; slightly pl; slightly st; no [illegible]; str HCl rxn
10 ft	10 min				Sand w/ some gravel		Sand w/ some gravel; (10-20 ft) ( ); (w)(d); md to [illegible] sd 80% (45% carb, 20% volc, 20% qr, 15% mafics); grl up to [illegible] (50% carb, 30% volc, 10% qr, 10% mafics); m.s.; sd-subang to subrd; grl-[illegible] to subrd; structureless; n pl; n stky; no [illegible]; str HCl rxn.
20 ft	8 min				Clay sand silt		clay sand silt (20-30 ft) ( ) (w)(d); 25% clay, 45% silt, f to md sd 30% (60% volc, 25% carb, 15% qz); m.s.; sd-subang to subrd; structureless; slightly pl; mod. stky; no [illegible]; [illegible]
30 ft	7 min				Sand silt clay w/ very little gravel		sand silt clay w/ very little gravel (30-40 ft) (w)(d); 25% clay, 30% silt, f-md sd 35% ([illegible]); grl up to [illegible] 10% (60% volc, 40% [illegible]); p.s.; sd-subang to subrd; grl-subang; structureless; mod pl; [illegible]; str HCl rxn.
40 ft	4 min				Sand silt clay w/ v.l. gravel		Sand silt clay w/ very little gravel (40-50 ft) ( ) Same as above
50 ft	3 min				Sand silt clay w/ v.l. gravel		Sand silt clay w/ very little gravel (50-60 ft) ( ) Same as above
60 ft	3 min				Sand silt clay w/ v.l. gravel		Sand silt clay w/ very little gravel (60-70 ft) Same as above
70 ft	4 min				Sand silt [illegible]		Sand silt clay w/ very little gravel (70-80 ft) Same as above
80 ft							

M.-D-V.F-_-0-1

LOC. or COORDS. T31S R13W, Sec 5bb Iron County, Utah
GROUND ELEV. 5060 ft
TOTAL DEPTH 342 ft
BOREHOLE DIAM. 9 inches

DRILLER Andrew MacPhearson
Russ Mangelson
RIG Chicago Pneumatic RT-180
BIT(S) double cone mill tooth
FLUID Bentonite mud

	START	FINISH
DATE	11/22/80	11/22/80
TIME	0935	1425

GEOPHYS. LOG ✓ YES ___ NO
HOW LEFT cased & developed

LOCATION Milford Flat
LOGGED BY B. Cox & R. Whitworth
PROJECT Milford Water Resources Valley Fill Drilling FY/81

DEPTH	PENE. RATE	CIRC RET	CIRC LOSS	AIRLIFT Q (gpm)	MATERIAL	SYMBOL	DESCRIPTION and COMMENTS
80ft–90ft	5 min				Sand silt clay w/ v.l. gravel.		Sand silt clay w/ very little gravel (80-90ft) ( ); 35% clay, [illegible]% silt; f-c ss sd 35% (60% volc, 25% carb, 15% qz); grvl up to 5mm 10% ([illegible]% volc, 40% carb); p.s.; sd-subang to subrnd, grvl-subang to subrnd; [illegible] dense; mod plastic; slightly sticky; weak [illegible] [illegible] HCl [illegible].
90ft–100ft	5 min				Clay silt sand w/ some gravel		Clay silt sand w/ some gravel (90-100ft) (- same as above except - 30 clay, 15 silt, 40 sand, 15 gravel)
100ft–110ft	4 min				Silty sand w/ some gravel		Silty sand w/ some gravel (100-110ft) ( ) (w) ( ); 10% clay, 15% silt; f-c ss sd 65% (50% volc, 35% carb, 10% qz, 5% gr); grvl up to 8mm 15% (50% volc, 30% carb, 15% qz, 5% gr); p.s.; sd-subang to subrnd, grvl-subrnd, [illegible]; [illegible] mod HCl [illegible]
110ft–120ft	3 min				Sand w/ some gravel		Sand w/ some gravel (110-120ft) (-) same as above exception - 5% clay, 10% silt, 65% sand, 20% gravel)
120ft–130ft	3 min				Sand w/ some gravel		Sand w/ some gravel (120-130ft) (-) same as above exception - 5% clay, 5% silt, 65% sand, [illegible]% gravel)
130ft–140ft	3 min				Sand w/ some gravel		Sand w/ some gravel (130-140ft) (same as above exception - [illegible]% clay, [illegible]% silt, 65% sand, [illegible]% gravel)
140ft–150ft	3 min				Sand w/ some gravel		Sand w/ some gravel ([illegible]) same as above exception - 10% clay, 10% silt, [illegible]
150ft–160ft	3 min				[illegible] silt [illegible]		[illegible] sand w/ some gravel (150-160ft) [illegible] 50% sand, 20% gravel

LOC. or COORDS. T31S, R13W, Sec 5bb Iron County, Utah

GROUND ELEV. 5060 ft

TOTAL DEPTH 342 ft

BOREHOLE DIAM. 9 inches

DRILLER Andrew MacPherson, Russ Mangelson

RIG Chicago Pneumatic RT-1800

BIT(S) double cone - mill tooth

FLUID Bentonite mud

	START	FINISH
DATE	11/22/80	11/22/80
TIME	0935	1425

GEOPHYS. LOG ✓ YES ___ NO

HOW LEFT cased

LOCATION Milford, Utah

LOGGED BY R. [illegible]

PROJECT MX Water Resources Valley Fill Drilling FY81

DEPTH	PENE. RATE	CIRC RET	CIRC LOSS	AIRLIFT Q (gpm)	MATERIAL	SYMBOL	DESCRIPTION and COMMENTS
160 ft	3 min				Sand w/ some gravel		Sand w/ some gravel; (160-170 ft) ( ); (w) (d); 5% clay, 15% silt; [illegible] sand 65% (50% [illegible], 35% [illegible], 10% [illegible], 5% [illegible]) gvl up to 5 mm 20% (50% [illegible], 35% [illegible], 10% [illegible], 5% [illegible]); [illegible]
170 ft	4 min				Sand w/ some gravel		Sand w/ some gravel (170-180 ft) ( ) same as above exception 5% clay, 5% silt, 65% sand, 25% gr
180 ft	3 min				Sand w/ some gravel		Sand w/ some gravel (180-190 ft) ( ) same as above
190 ft	3 min				Silt, Clay, Sand w/ some gravel		Silt, clay, sand w/ some gravel (190-200 ft) ( ) same as above exception - 15% clay, 15% silt, 45% sand, 25% gravel
200 ft	3 min				Silt, clay, Sand w/ some gravel		Silt, clay, sand w/ some gravel (200-210 ft) (same as above exception - 10% clay, 15% silt, [illegible], 30% gravel
210 ft	4 min				Sand w/ some gravel		Sand w/ some gravel (210-220 ft) (same as above - 5% clay, 15% silt, 65% [illegible], 20% gvl
220 ft	3 min				Sand w/ some gravel		Sand w/ some gravel (220-230 ft) ( ) same as above
230 ft	4 min				Sand w/ [illegible]		Sand w/ some gravel (230-240 ft) (same as above
240 ft							

LOC. or COORDS. T31S, R13W, Sec 5bb Iron County, Utah	DRILLER Andrew MacPherson, Russ Mangelsen	START DATE 11/22/80 TIME 0935 / FINISH 11/22/80 1425
GROUND ELEV. 5060 ft		
TOTAL DEPTH 342 ft	RIG Chicago Pneumatic RT-1500	GEOPHYS. LOG ✓ YES ___ NO
BOREHOLE DIAM. 9 inches	BIT(S) double cone mill tooth	HOW LEFT cased & developed
	FLUID Bentonite mud	

LOCATION Milford Wash

LOGGED BY Bob Whitworth

PROJECT M7 Water Resources Valley Fill Drilling FY81

DEPTH	PENE. RATE	CIRC RET	CIRC LOSS	AIRLIFT Q (gpm)	MATERIAL	SYMBOL	DESCRIPTION and COMMENTS
240 ft	3 min				Silty sand w/ some gravel		Silty sand w/ some gravel (240-250 ft) ( ); (w)(d); 10% clay, 15% silt, fsd-c s sd 65% (50% xxx, 35% xxx, xxx); gvl up to 1.3 cm [illegible] 50% xxx, 25% xxx, (5% xxx); p.s.; sd-sub [illegible]; gvl-[illegible]; [illegible] less, [illegible], [illegible]
250 ft	4 min				Silty sand w/ some gravel		Silty sand w/ some gravel (250-260 ft) ( ); Same as above. Exception - 5% clay, 10% silt, 60% sand, 25% gravel
260 ft	4 min				Clay silt sand w/ some gravel		Clay silt sand w/ some gravel (260-270 ft) ( ); Same as above exception 15% clay, 15% silt, 45% sand, 25% gravel
270 ft	4 min				Silty sand w/ some gravel		Silty sand w/ some gravel (270-280 ft) ( ); Same as above (
280 ft	3 min				Sand w/ very little gravel		Sand w/ very little gravel (280-290 ft) ( ); Same as above 5% clay, 10% silt, 80% sd, 5% gravel
290 ft	4 min				Sand w/ some gravel		Sand w/ some gravel (290-300 ft) ( ); Same as above 5% clay, 10% silt, 70% sd, 15% gravel
300 ft	5 min				Sand w/ v.l. gravel		Sand w/ v.l. gravel (300-310 ft) ( ); Same as above exception [illegible] clay, [illegible] silt, [illegible]
310 ft	5 min				Clay sand		Clay sand (310-320 ft) [illegible]; Same [illegible] 15% clay, 10% silt, 75% [illegible]
320 ft							

LOCATION Milford Utah

LOGGED BY B. Coy, R. Whitworth

PROJECT MX Water Resources Valley Fill Drilling FY81

LOC. or COORDS. T31S, R13W, Sec 5bb Iron County Utah

GROUND ELEV. 5060 ft

TOTAL DEPTH 342 ft

BOREHOLE DIAM. 9 inches

DRILLER Andrew MacPhearson, Russ Mangelson

RIG Chicago Pneumatic RT-1800

BIT(S) double cone mill tooth

FLUID Bentonite Mud

	START	FINISH
DATE	11/22/80	11/22/80
TIME	0935	1425

GEOPHYS. LOG ✓ YES ___ NO

HOW LEFT cased, developed

DEPTH	PENE. RATE	CIRC RET	CIRC LOSS	AIRLIFT Q (gpm)	MATERIAL	SYMBOL	DESCRIPTION and COMMENTS
320ft							
					clay silt sand		clay silt sand (320-330ft) ( ), [illegible] (w)(d); 15% clay, 15% silt, f to md sd 70% (40% volc, 40% carb, 10% qtz, 10% [illegible] gr) [illegible]; sd - sub ang to sub rnd; [illegible]; N.P.; [illegible]
5 min							
330ft							
4 min					silty clay w/ v.l. gravel		Silty clay w/ v.l. gravel (330-342ft) ( ) [illegible] exception - 10% clay, 15% silt, 40% sand, 5% gravel, gr [illegible] subang
340ft							