WHITE—DIVISION OF WATER RESOURCES
CANARY—CLIENT'S COPY
PINK—WELL DRILLER'S COPY

PRINT OR TYPE ONLY
DO NOT WRITE ON BACK

STATE OF NEVADA
DIVISION OF WATER RESOURCES

WELL DRILLER'S REPORT

Please complete this form in its entirety in accordance with NRS 534.170 and NAC 534.340

OFFICE USE ONLY
Log No. 90418
Permit No.
Basin 110C

NOTICE OF INTENT NO. 46325

1. OWNER US ARMY CORP OF ENGRS
MAILING ADDRESS 1325 J Street
Sacramento, CA 95814

ADDRESS AT WELL LOCATION
HAWTHORNE ARMY DEPOT
Hawthorne, Nevada

2. LOCATION NW ¼ NE ¼ Sec. 26 T. 8 N/S R. 30 E Mineral County

PERMIT NO. (Issued by Water Resources) Parcel No. Subdivision Name

3. WORK PERFORMED
☒ New Well ☐ Replace ☐ Recondition
☐ Deepen ☐ Abandon ☐ Other

4. PROPOSED USE
☐ Domestic ☐ Irrigation ☐ Test
☐ Municipal/Industrial ☒ Monitor ☐ Stock

5. WELL TYPE
☐ Cable ☐ Rotary ☐ RVC
☐ Air ☒ Other H.S.A.

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
SILTY SAND YELLOW		0	70	
SANDY SILT YELLOW		70	90	
SILTY SAND YELLOWISH		90	120	
SILTY CLAY LT BRN		120	~~150~~ 155	

Date started 8/13/02, 19
Date completed 8/23/02, 19

7. WELL TEST DATA
TEST METHOD: ☐ Bailer ☐ Pump ☐ Air Lift

	G.P.M.	Draw Down (Feet Below Static)	Time (Hours)

8. WELL CONSTRUCTION
Depth Drilled 155 Feet Depth Cased 150 Feet

HOLE DIAMETER (BIT SIZE)

		From	To
8 Inches		0 Feet	~~150~~ Feet
Inches		Feet	155 Feet
Inches		Feet	Feet

CASING SCHEDULE

Size O.D. (Inches)	Weight/Ft. (Pounds)	Wall Thickness (Inches)	From (Feet)	To (Feet)
2		sch. 40	0	~~150~~
				150

Perforations:
Type perforation machined slot
Size perforation .010
From 135 feet to 150 feet
From feet to feet
From feet to feet
From feet to feet
From feet to feet

Surface Seal: ☒ Yes ☐ No
Depth of Seal 0-12
Placement Method: ☐ Pumped ☒ Poured

Seal Type:
☒ Neat Cement
☐ Cement Grout
☐ Concrete Grout

Gravel Packed: ☒ Yes ☐ No
From 135 feet to 150 feet

9. WATER LEVEL
Static water level feet below land surface
Artesian flow G.P.M. P.S.I.
Water temperature °F Quality

10. DRILLER'S CERTIFICATION
This well was drilled under my supervision and the report is true to the best of my knowledge.
Name (Contractor) Cascade Drilling, Inc.
Address (Contractor) 3632 Omec Circle
Rancho Cordova, CA 95742
Nevada contractor's license number issued by the State Contractor's Board C23 51207
Nevada driller's license number issued by the Division of Water Resources, the on-site driller M-1908
Signed (By driller performing actual drilling on site or contractor)
Date 10-9-02

(Rev. 3-91)

USE ADDITIONAL SHEETS IF NECESSARY

(O)-627

FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SCALE:

CLIENT: USACE

LOCATION: Hawthorne, NV

PROJECT NAME: HWAD

JOB NUMBER: 00929.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): ~~HSA~~ DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: CME 95 rig

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT ~~SPOON~~ CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): ~~PID~~ FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE ~~DIRT~~ ~~DRY~~ WET OTHER

BORING NUMBER: IRPMW37A

SHEET 1 OF 8

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.13.02	DATE 08.13.02

WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/f), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	SOIL SAMPLING: BLOWS/6" INTERVAL	SOIL SAMPLING: INTERVAL SAMPLED	SOIL SAMPLING: RECOVERY	SOIL SAMPLING: ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INTIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE, INTERVAL: DESCRIPTION
		SS						0	0	SW	0-10 Silty Sand w/ gravel, yellow-yellowish orange, SW (15, ~~50~~, 35), nonplastic, no-low dry strength, no dilatancy, no toughness, subangular, dry, no odor, homogeneous, weak cementation, high-med perm well graded fine sands
								5			
								10	0.3		10-20 silty sand, yellow-yellowish orange, SW (5, 65, 30), nonplastic, ~~non~~ subangular, dry, no odor, homogeneous, weak cementation, high-med perm, well graded fine sands
			60 x 6								
								15			
								20			

Neat Cement Grout

2" SCH40 PVC Blank

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

A

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FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SEE pg 1 of 8

SCALE:

CLIENT	USACE
LOCATION	HWAD, NV
PROJECT NAME	HWAD
JOB NUMBER	00729.002
DRILLING CONTRACTOR	Cascade
RIG TYPE (CIRCLE ONE) / OTHER	HSA DP MUD ARCH NONE
DRILLING METHOD, FLUID USED	HSA
SOIL SAMPLING METHOD (CIRCLE ONE) / OTHER	SPLIT SPOON CC ACETATE NONE
MONITORING INSTRUMENT (CIRCLE ONE) / OTHER	PID FID LEL RAD NONE
SURFACE CONDITIONS (CIRCLE ONE) / OTHER	ASPHALT CONCRETE DIRT DRY WET

BORING NUMBER: IRPMW37A

SHEET 2 OF 8

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.13.02	DATE 08.13.02
WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/l), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	BLOWS/6" INTERVAL	INTERVAL SAMPLED	RECOVERY	ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INITIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE: INTERVAL: DESCRIPTION
		SS						20	.01	ML	20-30 Sandy Silt, yellow-lt brown, ML (10, 25, 65), no plasticity, no-low dry strength, no dilatancy, dry, no odor, high-med perm, homogeneous
Neat Cement Grout	2" SCH 40 Blank PVC		60					30	1.3	SM	30-40 Silty Sand, yellow-lt brown, SM (15, 45, 40), no plasticity, no-low dry strength, no dilatancy, dry, no odor, med-poorly graded, subangular, fine sand, high-med perm
								40			

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

A _____ D _____

E _____

F _____

FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SCALE:

SEE pg 1 of 8

CLIENT: USACE

LOCATION: Hawthorne, NV

PROJECT NAME: HWAD

JOB NUMBER: 00729.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): HSA DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: HSA

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT SPOON CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): PID FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE DIRT DRY WET OTHER

BORING NUMBER: IRPmw37A

SHEET 3 OF 8

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.13.02	DATE 08.13.02

WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/l), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	SOIL SAMPLING: BLOWS/6" INTERVAL	SOIL SAMPLING: INTERVAL SAMPLED	SOIL SAMPLING: RECOVERY	SOIL SAMPLING: ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INITIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE: INTERVAL: DESCRIPTION
		SS									
Neat Cement Grout	2" SCH 40 Blank PVC		60 X X					40	0.3	mL	40-50 Same as 20-30
											50-70 ~~Sandy Silt~~ Silty sand, (15, 35, 50) yellow lt brown, SM no plasticity, ~~no~~ low dry strength, no dilatancy, no toughness, dry, no odor, homogeneous subangular, fine sand, med perm.
								5			
			22 50 X					50	6.0	SM	
								5			
								60			

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

A _____ D _____

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FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SCALE:

SEE pg 1 of 8

CLIENT: USACE

LOCATION: Hawthorne, Nv

PROJECT NAME: HWAD

JOB NUMBER: 00729.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): HSA DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: HSA

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT SPOON CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): PID FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE DIRT DRY WET OTHER

BORING NUMBER: IRPmw37A

SHEET 4 OF 8

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.13.02	DATE 08.13.02

WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/f), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	SOIL SAMPLING: BLOWS/6" INTERVAL	SOIL SAMPLING: INTERVAL SAMPLED	SOIL SAMPLING: RECOVERY	SOIL SAMPLING: ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INITIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE: INTERVAL: DESCRIPTION
			70 X X					60	25	Sm	60-70 Same as 50-60 except for small, pea-sized rust colored laminated
								5			
											70-80 silty sand, lt-med brown, Sm (5,35,60), no plasticity, no-low dry strength, no dilatancy, no toughness, dry, no odor, homogeneous, high-med perm, weak cementation, subangular, fine sand
			50 X					70	10	Sm	
								5			
Neat Cement Grout	2" SCH 40 Blank PVC							80			

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

A _____ D _____

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FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SCALE:

SEE pg 1 of 8

CLIENT: USACE

LOCATION: Hawthorne, NV

PROJECT NAME: HWAD

JOB NUMBER: 00729.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): HSA (X) DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: HSA

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT SPOON (X) CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): PID (X) FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE DIRT (X) DRY (X) WET OTHER

BORING NUMBER: IRPMW37A

SHEET 5 OF 8

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.13.02	DATE 08.13.02

WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/f), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	SOIL SAMPLING: BLOWS/6" INTERVAL	SOIL SAMPLING: INTERVAL SAMPLED	SOIL SAMPLING: RECOVERY	SOIL SAMPLING: ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INTIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE: INTERVAL: DESCRIPTION
Neat Cement grout	2" SCH 40 Blank PVC	50	30 ~~30~~ x					80	3.0	~~MH~~ ML	80-90 sandy silt, med brown, ~~MH~~ ML (15, 35, 50), low plasticity, low-med dry strength, no dilatancy, low toughness, dry, no odor, homogeneous, med perm. weak cementation
								5			
			35 50 x					90	2.8	ML	90-100 clayey silt (med brown, ML (5, 15, 80), no-low plasticity, low dry strength, no dilatancy, med toughness, dry, no odor, homogeneous, low-med perm
								5			
								100			

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

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FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SCALE:

SEE pg 1 of 8

CLIENT: USACE

LOCATION: Hawthorne, NV

PROJECT NAME: HWAD

JOB NUMBER: 00729.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): HSA DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: HSA

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT SPOON CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): PID FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE DIRT DRY WET OTHER

BORING NUMBER: IRPmw37A

SHEET 1 OF 2

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.31.02	DATE 08.13.02

WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/f), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	BLOWS/6" INTERVAL	INTERVAL SAMPLED	RECOVERY	ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INITIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE: INTERVAL: DESCRIPTION
Neat Cement Grout	2" SCH40 Blank PVC		40 50 X					100	0.0	ML	100-110 Same as 90-100 except laminated fine sand layers (<5%)
								5			110-120 silty clay, med-dk brown, CL (5, 20, 75), med plasticity, med dry strength, med toughness, dry, no odor, homogeneous, soft, low perm
			33 50 X					110	0.0	CL	
								5			
								120			

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

A _____ D _____

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FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING

N W E S

SCALE:

SEE pg 1 of 2

CLIENT: USACE

LOCATION: Hawthorne, Nv

PROJECT NAME: HWAD

JOB NUMBER: 00729.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): HSA (X) DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: HSA

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT SPOON (X) CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): PID (X) FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE DIRT (X) DRY WET OTHER

BORING NUMBER: IRPmw37A

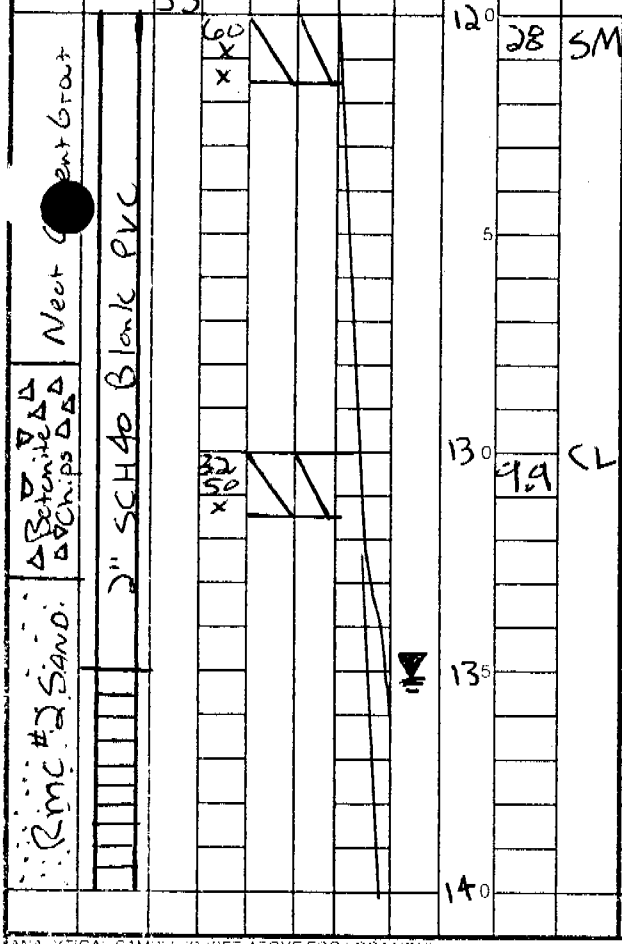
SHEET 7 OF 8

DRILLING	
START	FINISH
TIME 0825	TIME 1200
DATE 08.13.02	DATE 08.13.02

WELL CONSTRUCTION	
START	FINISH
TIME 1300	TIME 1715
DATE 08.13.02	DATE 08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/f), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION



ANNULUS	CASING	SAMPLER USED	BLOWS/6"	INTERVAL SAMPLED	RECOVERY	ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INTIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL	SAMPLE TYPE: INTERVAL: DESCRIPTION
		SS						12			
			60 X X						28	SM	120-130 Silty sand, dk-med brown, SM (5,60,35), no-low plasticity, low-med dry strength, med toughness, dry, no odor, hard, homogeneous, mod cementation, subangular, fine sand
								5			
											130-140 Same as 110-120'
			32 50 X					13	9.9	CL	
							▼	13.5			
								14			

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

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FORSGREN ASSOCIATES/BROWN AND CALDWELL

BOREHOLE/WELL LOG

LOCATION OF BORING: SEE pg 1 of 8 SCALE:

CLIENT: USACE

LOCATION: Hawthorne, NV

PROJECT NAME: HWAD

JOB NUMBER: 00729.002

DRILLING CONTRACTOR: Cascade

RIG TYPE (CIRCLE ONE): HSA (X) DP MUD ARCH NONE OTHER

DRILLING METHOD, FLUID USED: HSA

SOIL SAMPLING METHOD (CIRCLE ONE): SPLIT SPOON (X) CC ACETATE NONE OTHER

MONITORING INSTRUMENT (CIRCLE ONE): PID (X) FID LEL RAD NONE OTHER

SURFACE CONDITIONS (CIRCLE ONE): ASPHALT CONCRETE DIRT (X) DRY (X) WET OTHER

BORING NUMBER: IRPMW37A

SHEET 8 OF 8

DRILLING	START	FINISH
TIME	0825	1200
DATE	08.13.02	08.13.02

WELL CONSTRUCTION	START	FINISH
TIME	1300	1715
DATE	08.13.02	08.13.02

FINE GRAINED AND ORGANIC SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, SIZE DISTRIBUTION, PLASTICITY, DRY STRENGTH, DILATANCY, TOUGHNESS, MOISTURE, ODOR, STRUCTURE, CONSISTENCY, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, CONTACT DESCRIPTION

COARSE GRAINED SOIL DESCRIPTION: GROUP NAME, MUNSELL COLOR, COLOR, GRADATION (g/s/f), SIZE DISTRIBUTION, PLASTICITY, SHAPE, ANGULARITY, MOISTURE, ODOR, STRUCTURE, CEMENTATION, RELATIVE PERMEABILITY, LOCAL GEOLOGIC NAME, MINERALOGY, CONTACT DESCRIPTION

WELL CONSTRUCTION: ANNULUS	WELL CONSTRUCTION: CASING	SOIL SAMPLING: SAMPLER USED	SOIL SAMPLING: BLOWS/6" INTERVAL	SOIL SAMPLING: INTERVAL SAMPLED	SOIL SAMPLING: RECOVERY	SOIL SAMPLING: ANALYTICAL SAMPLE (A,B,C)	WATER LEVEL (INTIAL/STATIC)	DEPTH (FEET)	INSTRUMENT READING (ppm)	USCS GROUP SYMBOL
		SS						140		
RMC #2 SAND	2" SCH40 .010 slotted PVC		29 50 x				▽		7.7	
								5		
6" threaded PVC Cap								150	37	
								5		
								0		

SAMPLE TYPE: INTERVAL: DESCRIPTION

140-150 Clayey silt, dk-med brown, (10, 20, 70), low plasticity, med dry strength, no dilatancy, high toughness, dry w/ ~~tan~~ stratified layers ~2" thick of moist, no odor, hard, low perm

150 Sandy silt, dk-med brown, (10, 40, 50), no plasticity, wet, no odor, homogeneous, med perm, water first encountered @ 142'

TD = ~~150'~~ 154' (boring collapsed to TD of 150')

Well materials:

- 15' screen (0.10 slott), 135' blank SCH 40, 6" threaded cap
- Sand: 133-150' = 17' × .32 ft³/ft = 5.4 ft³; used 6 bags (6 ft)
- ~~cement~~
- Seal: ~~3~~ 2 50 lb bags of Enviroplug betonite Chips = 5' seal
- neat cement grout = 128 ft × 2.44 gal/ft = 312 gals
  36 bags cement, 4 bags concrete
  → used 550 gallons

ANALYTICAL SAMPLE ID (SEE ABOVE FOR LOCATION)

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ID: IRPMW37A DATE CONSTRUCTED: 08.13.02 SUPERVISED BY: Brad Ziegler

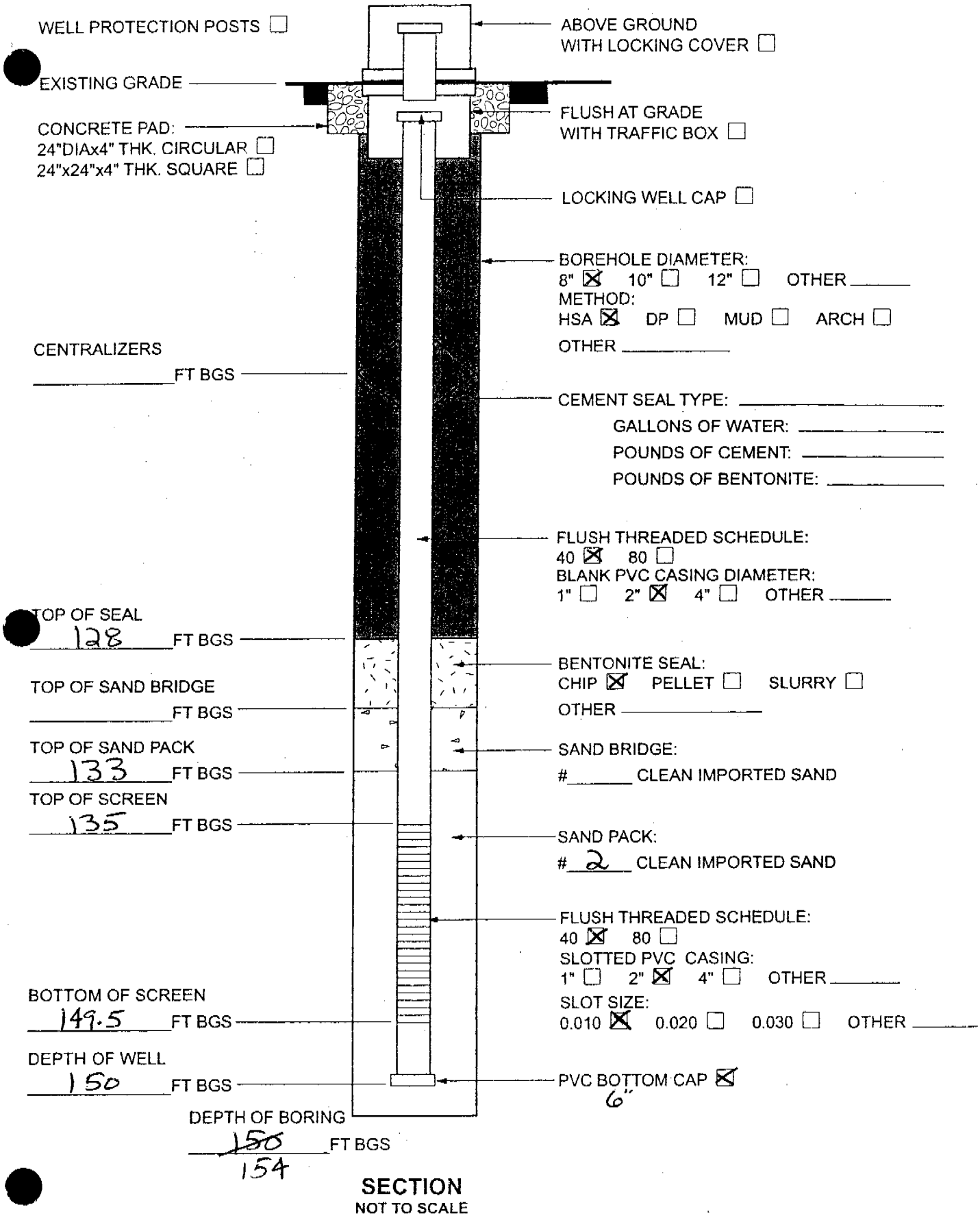

Figure 4. Temporary Sampling Point Construction Diagram