STATE OF NEVADA
DIVISION OF WATER RESOURCES
WELL DRILLER'S REPORT

OFFICE USE ONLY
Log No.
Permit No. 108941
Basin

PRINT OR TYPE ONLY
DO NOT WRITE ON BACK

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

NOTICE OF INTENT NO. 32181

1. OWNER USA Washington DC
MAILING ADDRESS

ADDRESS AT WELL LOCATION Whitney
Subdivision Name: County: Clark

2. LOCATION SE¼ SW ¼ Sec 29 T 21 N/S R 63 E
PERMIT/WAIVER No. K-000688 | 16029401001
Issued by Water Resources Parcel No.

Latitude 36.0860131 UTM E ☐ NAD 27
Longitude 114.9668883 N ☒ NAD 83/WGS 84

3. WORKED PERFORMED
☒ New Well ☐ Replace ☐ Recondition
☐ Deepen ☐ Other

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

5. WELL TYPE
☐ Cable ☐ Rotary ☐ RVC
☐ Air ☒ Other Sonic Drill

6. LITHOLOGIC LOG

Material	Water Strata	From	To	Thickness
attached Log				

DCNR/DWR RECEIVED
SEP 01 2009
LAS VEGAS OFFICE

Date started: 5-20, 20 09
Date completed: 5-22, 20 09

7. Water Level
Static water level: 18'0" feet below land surface
Artesian Flow: G.P.M. P.S.I.
Water Temperature: °F
Quality:

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

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

9. WELL CONSTRUCTION
Depth Drilled 164 Feet Depth Cased 164. Feet

HOLE DIAMETER (BIT SIZE)

		From		To	
8"	Inches	0	Feet	164	Feet
	Inches		Feet		Feet
	Inches		Feet		Feet

CASING SCHEDULE

Size O.D. (Inches)	Weight/Ft. (Pounds)	Wall Thickness (Inches)	From (Feet)	To (Feet)
4"	PVC	SCA 80	0	164

Perforations:
Type of perforation Slotted Slriech
Size of perforation 0.010
From 144 feet to 164 feet
From feet to feet
From feet to feet
From feet to feet
From feet to feet

Annular Seal: ☐ Yes ☐ No
☐ Neat Cement to ☐ Pumped ☐ Poured
☐ Cement Grout to ☐ Pumped ☐ Poured
☒ Concrete Grout 0 to 134 ☒ Pumped ☐ Poured
☐ =30% Bentonite Grout to ☐ Pumped ☐ Poured

Gravel Pack: ☒ Yes ☐ No 139 to 164 ☐ Pumped ☒ Poured
Type: Cenex Sand 2-16
Bentonite Chips: ☒ Yes ☐ No 134 to 139 ☐ Pumped ☐ Poured
Type: 3/8 Time Release Hole Plug

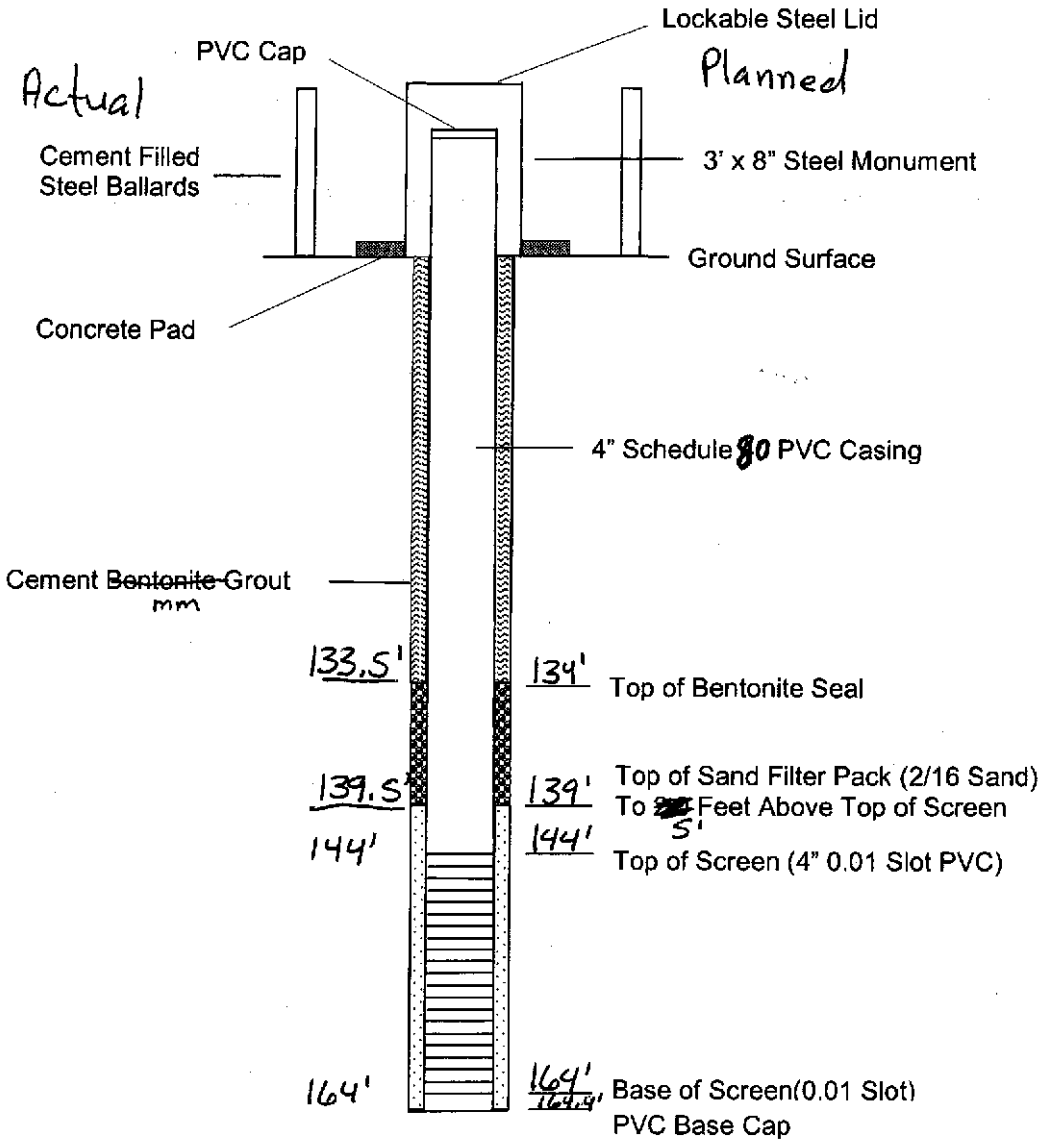
10. DRILLER'S CERTIFICATION
This well was drilled under my supervision and the report is true to the best of my knowledge.
Name EAGE Drilling
Contractor
Address 7150 Placid Street
Contractor
Las Vegas NV 89119
Nevada contractor's license number issued by the *State Contractor's Board* 51266
Nevada driller's license number issued by the Division of Water Resources, the *on-site driller* 2097
Signed [signature]
By driller performing actual drilling on site or contractor
Date 9-1-09

(Rev. 06-06)

USE ADDITIONAL SHEETS IF NECESSARY

MCF - SERIES MONITOR WELL CONSTRUCTION DIAGRAM

MCF-30B
Planned



GES

Job Name: BRC MONITOR WELLS

Boring No. MCF-30B

Job No. 20092509V1

Start:

End:

Location: See fig. 2

Total Depth:

Groundwater

Elevation: 1526'

Depth:

Date:

Time:

Comments:
Well Construction Data:
0.010-slot schedule 80-4" PVC Screen: 350'-370'
0-350': 4.0" schedule 80 PVC Blank
370'-342': #2-/16 sand pack.
342'-336.3': 3/8" Bentonite Pellets
336.3'-0': Cement grout.

Equipment: "Sonic" Drill Rig

Type of Bit: 6" O.D. Sonic Core Barrel

Hammer (lbs/inches): 140 #/30"

Driller: T. Thompson

Surface Dry Density (pcf):

Surface Moisture Content (%):

Surface Condition: Leveled Native

Logger: Monty Mehlhorn

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
	Run #1			SM	Very pale brown (10YR 7/4) silty SAND w/gravel (~20% silt, 50% sand (~~wet~~ mm subround, well-graded, ~30% cs, 30% ms 40% fs), 30% gravel (sub-angular to subrounded, poorly graded, ~20% cg, 80% fg)), dry, dense, homogeneous, strong reaction to HCl, Sand: ~30% mafics, 70% felsics, gravel: ~30% dacite, 30% andesite, 15% basalt, 15% gypsum		
					...at 3.0': light brown (7.5YR 6/3),		
	Run #2						
		MCF-30A-10, MCF-30A-10-MS/MSD			...Samples: MCF-30A-10, MCF-30A-10-MS/MSD, pH = 8.68, PIDs: 10.6eV = 0.2 ppmV, 11.7eV = 1.1 ppmV.		

J:\Jobs\2009_Jobs\20092509\Boring Log.xls

Sheet 1 of

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509V1	Start: / End:	Location: See fig. 2

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				SM	...same as above, weakly-moderately cemented in 0.5"-1.0" layers.		
13	Run #3						13
14							14
15							15
16	Run #4				...stratified (0.5'-1.0' thick beds), alternating SM and gravel (GM) beds.		16
17							17
18							18
19							19
20					...wet, not sampled due to water falling into core sampler.		20
21	Run #5						21
22							22
23							23
24				SM	...abrupt contact w/: Light yellowish brown (10YR 6/4) silty SAND (~30% silt, 50% sand (subround, poorly graded, ~10% cs, 20% ms, 70% fs), 20% gravel (subrounded, poorly graded, ~100% fg)), wet, v. dense, stratified (1.0" thick beds), strong reaction		24
25							25
26	Run #6						26
27							27
28							28

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509U1	Start: End:	Location: See fig. 2

Depth (feet)	REC	Sample Type	Blows 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				SM	to HCl, sand and gravel		
29	Run #6	MCF-30A-29, wet, pH=9.39			composition same as above, abrupt contact w/:		29
30					28': SM: Very pale brown (10YR 6/4) silty SAND w/		30
31					gravel; same as 0'-24'; contact abrupt w/:		31
32							32
33	Run #7			ML	Brownish yellow (10YR 6/6) sandy SILT (~70% silt, 30% sand (subrounded, poorly		33
34					graded, ~100% fs), wet, v. stiff, laminated-stratified		34
35					(0.5"-2.0" thick beds), strong reaction to HCl, mottled		35
36	Run #8				lt. greenish gray (8/5GY)		36
37				ML	@ 34' (lean CLAY, 0.5' thick beds), abrupt contact w/:		37
38					36': ML: Reddish yellow (7.5 YR 6/6) SILT w/ sand (~80%		38
39					silt, 20% sand (subrounded, poorly graded, ~100% fs)), moist,		39
40					very stiff, has ~20% weakly cemented nodules, laminated		40
41					(2-4mm beds), weak reaction to HCl.		41
42	Run #9	MCF-30A-42 (10.0' below Qal/TMCF contact). pH=9.46		CL	Brown (7.5YR 5/4) lean CLAY (~90% lean clay, trace		42
43					sand, ~10 gypsum as matrix cement), moist, weakly		43
44					cemented, v. stiff, laminated, wk reaction to HCl,		44

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509U1	Start: / End:	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows 6 inches	USCS	Description	Pene-trometer	Depth (feet)
45	Run #9			CL	...same as above.		45
46							46
47							47
48	Run #10				...contact abrupt w/:		48
49				ML	Light brown (7.5YR 6/4) SILT (~85% silt, trace sand, 15% gypsum as cs-sized grains and matrix cement), moist, weakly cemented, v. stiff, laminated (0.5" thick beds), weak reaction to HCl, contact abrupt with:		49
50							50
51							51
52				CH			52
53					51': CH: Greenish gray (Gley 1, 5/5GY) fat CLAY (~80% fat clay, trace sand, ~20% gypsum as cs-sized grains and 2.0" long clear-cloudy crystals), moist, weakly cemented, v. stiff, massive, weak reaction to HCl, strong H_2S odor, ...55'-57': ~40% gypsum, as above.		53
54							54
55	Run #11						55
56		Sample# MCF-30A-56 (25' below Qal/TMCF), pH= 8.77					56
57							57
58							58
59	Run #12				...same as above		59
60							60

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30 B
Job No. 20092509V1	Start: / End:	Location: See p. 1

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH	...Same as above		
61							61
62							62
63							63
64							64
65							65
66	Run #12						66
67					...becomes laminated (2-6mm thick laminae), ~30% black, carbonaceous organic matter, trace pyrite.		67
68							68
69							69
70							70
71					...Same as above, contact gradational w/ 1		71
72							72
73	Run #13			MH	Dark greenish gray (GLEY1, 4/5GY) mottled light greenish gray (Gley 1, 7/10Y) elastic SILT (~70% elastic silt, trace sand, ~20% gypsum, ~10% organic matter as seed pods, leaves, carbonaceous matter, trace pyrite), moist, v. stiff		73
74							74
75							75
76							76

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509V1	Start: / End:	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				MH	, laminated (1-3mm thick		
77					laminae), no reaction to		77
					HCl, strong organic odor.		
78							78
	Run #13						
79							79
80							80
81							81
82		MCF-30A-82 (50' below)			...sample # MCF-30A-82, 50' below Qal/TMCF		82
83		pH = 8.39			contact, same as above		83
84							84
85							85
86							86
87	Run #14						87
88							88
89							89
90					...same as above, minor		90
	Rtn #15				water (wet) along bedding		
91					surfaces; volume insufficient		91
					for sample.		
92							92

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509V1	Start: / End:	Location: See p.1.

Depth (feet)	REC	Sam. Type	Blows 6 inches	USCS	Description	Pene-trometer	Depth (feet)
93	Run #15			MH	...same as above; gypsum as clear-brownish clouded crystals along beds		93
94							94
95							95
96							96
97							97
98				CH	...contact gradational with: Light greenish gray (Gley1, 8/5GY) fat CLAY (~80% fat clay, trace sand, ~20% gypsum as clear, cs-sized crystals and grains, trace organics), moist, weakly cemented, v. stiff, stratified (1" thick beds), weak reaction to HCl,		98
99							99
100							100
101							101
102		MCF-30A-102, pH = 8.95		wet			102
103	Run #16				...101.5'-102.5': bluish gray (GLey 2, 6/5PB), ~40% gypsum w/water along crystal surfaces, sample #MCF-30A-102		103
104							104
105							105
106					...103': gypsum as cs-sized crystals, only moist.		106
107							107
108							108

GES	Job Name: BRC Monitor Wells	Boring No. MCF-3CB
Job No. 20092509V1	Start: / End:	Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH			
109	Run#16				...gypsum as white, 0.5" thick granulose layers.		109
110							110
111	Run#17				...pyrite as cs-fs sized clear grains and crystals		111
112							112
113							113
114					...same as above.		114
115							115
116							116
117							117
118					...1.0"-2.0" long, randomly-oriented, stained euhedral gypsum crystals w/ pyrite grains along crystal faces, crystals in ~0.5'-1.0' thick beds.		118
119							119
120							120
121	Run#18						121
122					...wet along bedding planes,		122
123							123
124					...light greenish gray (Gley1,		124

GES

Job Name: BRC Monitor Wells

Boring No. MCF-30B

Job No. 20092509V1

Start:

End:

Location: See p.1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CH	7/10 GY) alternating beds and layers of granulose gypsum.		
125							125
126							126
127							127
128	Run #18						128
					...same as above		
129							129
130							130
131							131
132		MCF-30A-132, pH=8.78			...sample #MCF-30A-132 (just below gypsum contact), trace pyrite along gypsum crystal faces.		132
133							133
134							134
135							135
136	Run #17						136
137							137
138					abrupt contact with:		138
				CL	Light gray (10YR 7/2) lean CLAY (~75% lean clay, trace sand, ~25% gypsum as clear, randomly oriented 1.0" long		
139							139
140							140

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509.01	Start: / End:	Location: See p. 1.

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
				CL	euhedral crystals), moist, very		
141					stiff, laminated-stratified,		141
					weak reaction to HCL,		
142					becomes light brown (7.5YR		142
					6/3) past 139'.		
143					...white (Gley 1, 8/N).		143
144							144
145							145
	Run #20			MH wet	Light greenish gray (Gley 1,		
146					7/5 GY) elastic SILT (~60%		146
					elastic silt, trace sand, 40%		
147					gypsum as cs-sized granules		147
		MCF-30A-			and crystals), wet (along		
148		148, pH=			crystal faces), v. stiff, homogeneous,		148
		8.78		CH	strong reaction to HCl, abrupt		
149					contact with:		149
					148': CH: Light greenish		
150					gray (Gley 1, 7/5GY) fat		150
					CLAY (~60% fat clay, trace		
151					sand, ~40% gypsum (same		151
					as above)), moist, very stiff,		
152					homogenous, strong reaction		152
					to HCl.		
153					...150'-154': dark bluish gray		153
					(Gley 1, 4/5B), ~20% black		
154	Run #21				carbonaceous organic		154
					matter and dark green		
155					plant material along beds.		155
					Trace wet (1/8") zones along		
156					bedding.		156

GES	Job Name: BRC Monitor Wells	Boring No. MCF-30B
Job No. 20092509V1	Start: / End:	Location: MCF-30A

Depth (feet)	REC	Sample Type	Blows/ 6 inches	USCS	Description	Pene-trometer	Depth (feet)
157	Run #21			CH	...same as above.		157
158					...stratified w/2.0" thick beds of: CH, ~~green~~ mm greenish gray (Gley 1, 6/5GY), strong organic odor (decay).		158
159							159
160							160
161					...greenish gray (Gley 1, 6/5GY) with 2.0"-0.5' thick beds of clouded, randomly-oriented euhedral gypsum crystals w/ pyrite along edges, abrupt contact w/:		161
162							162
163							163
164							164
165					End of Boring 164		165
166							166
167							167
168							168
169							169
170							170
171							171
172							172