Basin 105

Log# 1041267 Pg 1

Borehole Completion Report. Report Date: _____ Page: 1 of 1.

WELL No: MW 51 Project Name: GTE Topaz Site. Douglas Co., Nv.

Location: NW 1/4: NW 1/4: NE 1/4: Sec 23, Twp 10N, Rge 21E; and 58.3 ft ~~N~~ S, 1014.4 ft ~~E~~ W of NE cor 26.

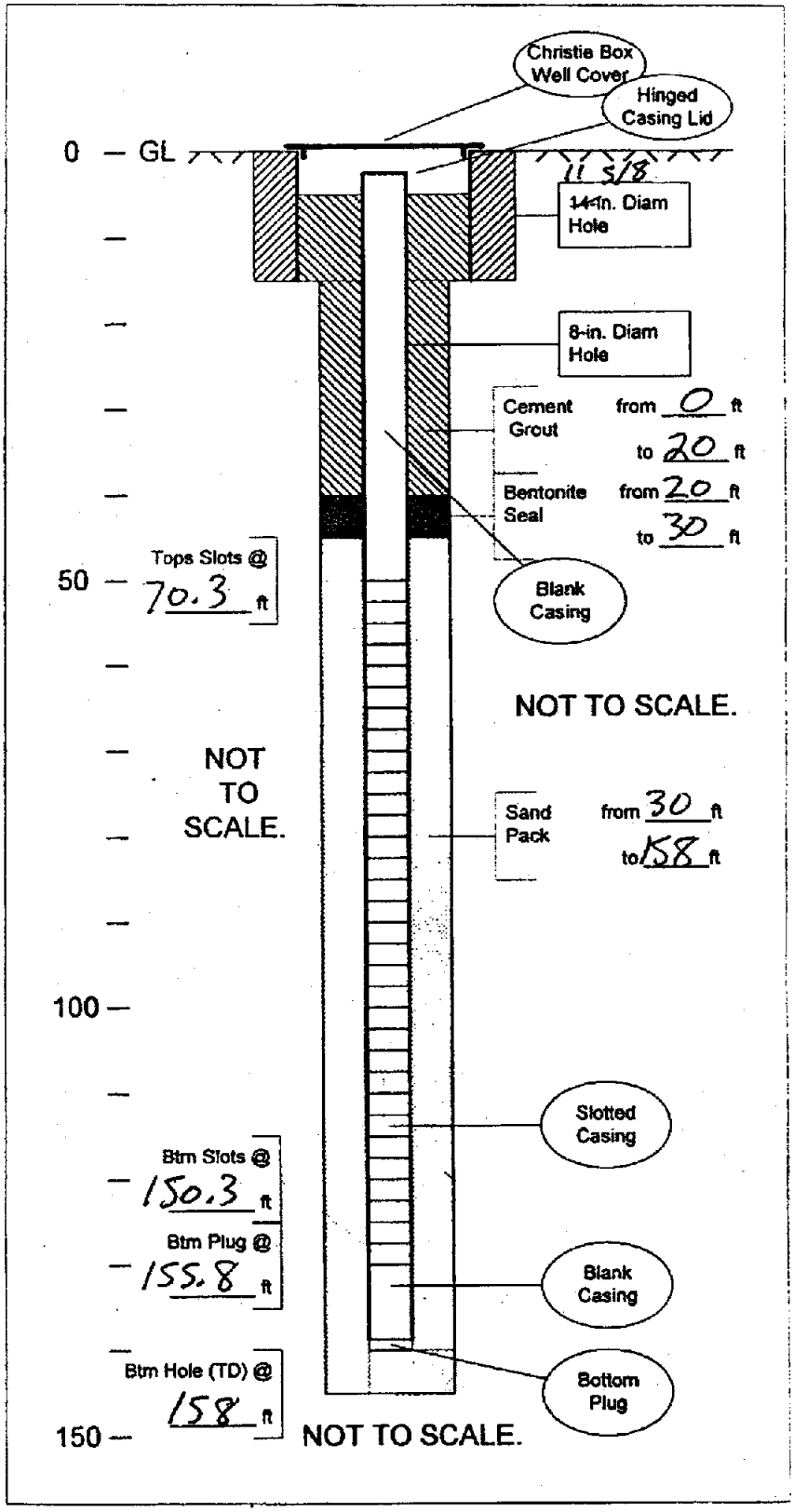
Description: MONITORING WELL

Drilling Summary	
Spud Date:	10 NOV 99
Completion Date:	11 NOV 99
Drlg Contractor:	GUSTIN
Rig Type:	Schramm T685W
Hole Diameter:	8 5/8 in.
Casing Diameter:	4 in.
Tot. Drld Depth:	158 ft.
Wtr Entry Depth:	109 ft.
Static Wtr Depth:	97.2 ft.
Casing Lip Elev:	7373.5 ft.
Prepared by:	R. CREWDSON

Completion Record

	Diam (in)	Depth Top	Depth Btm	Length (ft)
Conductor	10 3/4	0	5	5
Blank Csg	4	5.3	70.3	70
Slot'd Csg	4	70.3	150.3	80
Blank Csg	4	150.3	155.3	5
Btm Plug			155.8	
TD Drld:			158	
1st Water Entry:		109		
Static Water Level:		97.02		

Legend.



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BASIN 105

Log # 104267 Pg 2

Time (0–2400)	OVA (ppm) (PID)	HC Odor	HC Stain	DESCRIPTION Lith, properties, etc.	Depth (ft)	Sample No.	Core Only: Dip from Horiz. Bedding (deg)	Core Only: Dip from Horiz. Fractures (deg)	Core Only: Diam: B:F Offset (in.clkwse)	Notes
10 Nov 14:30	0	no		Silty Slate yelgry (DRY and POWDERY), weathered, sft, pr-mod fis, tr limonite and wht clys.	0	636345				① Chip samples are composites of 5' intervals collected every 5' from surface to total depth. Drilling is dual-tube reverse circulation rotary rig using an air hammer drill head. Samples are collected at a cyclone. Drilling fluid is air (also water) or air water (below
14:45	↓	↓				636345				
15:30				Metamudstone v lt-lt gry (DRY and POWDERY), mdgry (WET), sft, weath, pr fis-mod fis, tr limonite.	10	636346				
15:32						636347				
15:35				15-20' com beds Metasiltst	20	636348				
15:37				Metasiltstone and Silty Slate yelgry and lt-mdgry (DRY and POWDERY), Metasiltst: plyel brn (WET), mos-pr fis, sft, Silty Slate: mdgry (WET), f-str fis, sft. Tr-loc mod orange limonite + r wht clys on fracs. 25'-35' Predominately Silty Metasiltstone		636349				② OVA is measured with a PID, Protovac Model 2020 IT unit # 70373 calibrated 2/11/99 Nov.
15:40					30	636350				
15:46						636351				
15:49				35'-75' Predominately Silty Slate	40	636352				Chip samples were collected in plastic bags and sealed for at least ½ hour before sniffing with the PID.
15:53						636353				
15:57	0	no			50	636354				

Location: 74 ft S (N/S), 1,012 ft W (E/W) of NE Cor Sec 23 (ref pt).

Location: NW 1/4, NE 1/4, Sec 23, Twp 10N, Rge 21E, MDBM.

Surface Elev: 1,373.5' Total Depth: 158 ft

Hole Diam: 8 5/8" Water Entry Depth: 109 ft

Date Drilled: 10-11 Nov. '99 Static Water Level: 47.03 ft @ 17:34 11/11/99

Logged By: Doug Goodwin

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Location: GTE Topaz Site

Figure ____. Page 1 of 4.

Drilling Log of Hole No. MW51

Log# 104267 Pg 3

Time (1-2400)	OVA (ppm)	HC Odor	HC Stain		DESCRIPTION Lith, properties, moisture content, etc	Depth (ft)	Sample No.	Core Only: Dip from Horiz. Bedding (deg)	Fractures (deg)	Diam: B:F Offset (in.clkwse)
15:57	0	no			Silty Slate with Metasiltstone yel gry and lt-med gry (DRY and POWDERY), med gry (WET) f-str fis, sft-med hd (incr w/depth), tr-loc med orange limonite, r wht clys on fracs, weathered.	50	636354			
16:02	↓	↓					636355			
16:07						60	636356			
16:12							636357			
16:19						70	636358			
16:25					75-80': Slate and Metasiltstone in equal amts, lt-med ltgry w/ yel gry coloration on fracs.		636359			
16:32					Slate lt-med ltgry (WET and DRY), less/unweathered, pr-str fis, loc silty and mas, mod hd, min-com limonite and abst-r wht clys on fracs, minor/subordinate Metasiltstone a/a.	80	636360			
16:38	0	no					636361			
16:44	4.0	vf				90	636362			
16:50	3.7	vf			95-100': incr wht clys to mod-com, assoc w/ leaching of rox and limonite.		636363			
17:00	6.8	f				100	636364			

no = no odor	pr = present	rock type, color, etc;
vf = very faint	abs = absent	clay, rust, qtz, other, if any.
f = faint	tr = trace	sed. type, gr. size, color, etc;
m = moderate	min = minor	dry = dusty
str = strong	mod = moderate	damp = some water
vs = very strong	abd = abundant	moist= more water
		wet = free water

Sample # 23075b = hole 23, depth 75 ft, 2nd split from t
Dip & B:F offset assume core is vertical, shallow end up.
B:F offset is distance measured along core circumference from axis of Bedding apex to axis of Fracture apex.

Logged By: Doug Goodwin Date: 11 Nov. '99

Location: GTE Topaz Site

Figure ____. Page 2 of 4.

Field Log of Hole No. MW51

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Log# 104267 Bsn 105 Pg 4

ime (-2400)	OVA (ppm)	HC Odor	HC Stain		DESCRIPTION Lith, properties, moisture content, etc	Depth (ft)	Sample No.	Core Only: Dip from Horiz. Bedding (deg)	Fractures (deg)	Diam: B:F Offset (in.clkwse)	
Nov. 7:00	6.8	f			Slate with Metasiltstone med lt-med dk gry (WET) w/ pl yel brn mud f/ 105'-125', med hd, pr-str fis, min-com limonite, abst-r wht clys on fracs, tr clr qtz vng at 105'-110', Metasiltst pred. mas.	100	636364				103': Lose dust at cyclone. Samples damp to 109'. First H_2O entry at 109'. Rock chips on average finer below 1st H_2O entry. Driller switched to circulation w/ air-H_2O below 1st H_2O entry.
7:05	1.5	f					636365				
7:10	1.4	vf				110	636366				
1 Nov. 17:52	0	no					636367				
17:56	0	↓				120	636368				
08:04	0						636369				
08:10	0.6					130	636370				
08:18	0.0				135-145': com-hvy limonite and mnr-com qtz vng.		636375				
08:26	0.1					140	636371				130'-155': Samples collected from diverter line to annulus.
08:33	0						636372				
08:40	0	no				150	636373				

Logged By: Doug Goodwin Date: 11 Nov., 1999

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Location: GTE Topaz Site
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Field Log of Hole No. MW51

Log# 104267 Bsn 105 P5

Time (1-2400)	OVA (ppm)	HC Odor	HC Stain		DESCRIPTION Lith, properties, moisture content, etc	Depth (ft)	Sample No.	Core Only: Dip from Horiz. Bedding (deg)	Fractures (deg)	Diam: B:F Offset (in.clkwse)	
Nov. 8:40	0	no			Silty Slate med lt-med dk gry (WET), mod hd, pr fis, tr-mnr limonite staining on fractures.	150	636373				130'-155' (cont.) because line to cyclone continually clogging. High OVA rdg at 155' could be from up-hole contamination of sample. At this site contaminants are found near the level of the fluctuating water table.
8:48	10.0	f					636374				
8:53						156 T.D.					

Logged By: Doug Goodwin Date: 11 Nov. '99

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Figure ____. Page 4 of 4.

Field Log of Hole No. MW51