APPENDIX E: WELL AND BORING LOGS

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

PB-1 Original Shop Well

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, **Department of Water Resources within 30** days after the completion or abandonment of the well.

1. WELL OWNER

Name Canyon County

Address Caldwell, Idaho

Owner's Permit No.

2. NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☑ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 20 inches Total depth 658 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.375 inches	16 inches	+ 2 feet	575 feet
.250 inches	10 inches	537 feet	577 feet
.250 inches	10 inches	637 feet	658 feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☑ Yes ☐ No

Was a packer or seal used? ☑ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☑ Yes ☐ No

Manufacturer's name Johnson

Type Stainless Model No.

PS Diameter 16 Slot size 25 Set from 577 feet to 637 feet

Diameter Slot size Set from feet to feet

Gravel packed? ☑ Yes ☐ No Size of gravel No 16 Del Monte

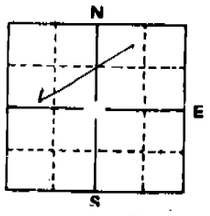
Placed from 537 feet to 658 feet

Surface seal depth 20 Material used in seal ☑ Cement grout ☐ Puddling clay ☐ Well cuttings

Sealing procedure used ☐ Slurry pit ☑ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location. 63



Subdivision Name

Lot No. Block No.

County Canyon

SW ¼ NW ¼ Sec. 21, T. 2 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 73½ feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☑ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
8 GPM	161	3

9. LITHOLOGIC LOG 106783

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
20"	0	3	Top Soil		
"	3	48	Sand 20% Clay		
"	48	152	Sandy Clay		
"	152	205	Yellow Clay		
"	205	251	Gray Clay Sticky		
20	251	297	Blue Shale		
20	297	327	Blue Clay 10% Sand		
20	327	520	Blue Clay (Shale)		
18	520	595	Grey Shale		
16	595	640	Shale, Sandy	✓	
16	640	658	Blue Clay		

RECEIVED
FEB 23 1978
Department of Water Resources
Western Regional Office

10.

Work started 10/4/77 finished 2/10/78

11. DRILLERS CERTIFICATION

Firm Name Witt Drilling Firm No. 55

Address Caldwell, Ida Date 2/10/78

Signed by (Firm Official) Kenneth Witt

and

(Operator) Claude DiFoe

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

MICROFILMED

Form 238-7
4/92

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MAR 2 1993
Department of Water Resources

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

USE TYPEWRITER OR BALLPOINT PEN

HOLE # PB-2

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER PICKLES BUTTE

Name CANYON COUNTY LANDFILL

Address 1115 ALBANY, CALDWELL, ID 83605

Drilling Permit No. 63-92-W-275-001

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☒ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☒ Other STAINLESS STEEL

Thickness	Diameter		From		To
SCH 10 inches	4" inches	+	0 feet		408 feet
SCH 10 inches	4" inches		420 feet		518 feet
____ inches	____ inches		____ feet		____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? ____ inches by ____ inches

Number	From	To
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet

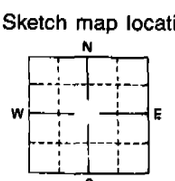
Well screen installed? ☒ Yes ☐ No
Manufacturer HOUSTON SCREEN Type WIRE WRAP
Top Packer or Headpipe —
Bottom of Tailpipe —

Diameter 4" Slot size .020" Set from 409 feet to 419 feet
Diameter 4" Slot size .020" Set from 519 feet to 589 feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 10/20
Placed from 530 (420) feet to 515 (407) feet
Surface seal depth 407 Material used in seal: ☒ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☒ Slurry pit
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port WELL TOP

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name NE 1/4 SW 1/4 SECTION 21, T2N, R3W
Lot No. ____ Block No. ____
County CANYON
Address of Well Site PICKLES BUTTE LANDFILL (give at least name of road)
NE ¼ SW ¼ Sec. 21, T. 2N N ☐ or S ☐, R. 3W E ☐ or W ☐

7. WATER LEVEL

Static water level 392.0 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow ____
Artesian closed-in pressure ____ p.s.i.
Controlled by: ☐ Valve ☒ Cap ☐ Plug
Temperature 90 °F. Quality POOR-VERY HARD
Describe artesian or temperature zones below.

8. WELL TEST DATA N/A

☐ Pump ☐ Bailer ☐ Air ☐ Other ____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG 075106

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12¼	0	100	TAN SILTY FINE SAND		✓
12¼	100	140	TAN SILT		✓
12¼	140	160	TAN CLAY SILT		✓
12¼	160	185	TAN SILTY CLAY		✓
12¼	185	215	TAN CLAY STONE SILTY		✓
12¼	215	262	TAN CLAY STONE		✓
8	262	400	GRAY CLAY STONE	✓	
8	400	440	GRAY CLAY STONE	✓	
8	440	520	GRAY CLAY STONE		✓
8	520	823	GRAY CLAY STONE	✓	
8	823	860	GREEN GRAY FINE SANDY CLAY	✓	

MICROFILMED
AUG 18 1997

10.

Work started 8-29-92 finished 10-23-92

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BOYLES BROS. Firm No. 503
Address BOX 25068 SALT LAKE CITY, UT 84125 Date 11-9-92
Signed by Drilling Supervisor Gary K Hill
and
(Operator) _____
(If different than the Drilling Supervisor)

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
4/92

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MAR 2 1993
Department of Water Resources

RECEIVED
FEB 4 1993
Department of Water Resources

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

HOLE # PB-3

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER PICKLES BUTTE

Name CANYON COUNTY LANDFILL

Address 1115 ALBANY, CALDWELL, ID 83605

Drilling Permit No. 63-92-W-275-002

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel (S.S.) ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
SCH 10 inches	4" inches	+ 0' feet	560' feet
SCH 10 inches	4 inches	586' feet	604' feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer HOUSTON MONITER FLOW Type STAINLESS
Top Packer or Headpipe –
Bottom of Tailpipe –

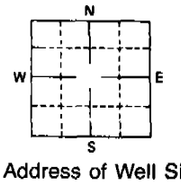
Diameter 4" Slot size .020 Set from 610' feet to 625' feet
Diameter 4" Slot size .020 Set from 565' feet to 580' feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 10-20
Placed from 605'-645' feet to 560'-585' feet

Surface seal depth 560 Material used in seal: ☒ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☒ Slurry pit
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port TOP OF CASING

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

Address of Well Site PICKLES BUTTE LANDFILL (give at least name of road)

NE ¼ SW ¼ Sec. 21, T. 2N N ☒ or S ☐, R. 3W E ☐ or W ☒

7. WATER LEVEL

Static water level 605 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow —
Artesian closed-in pressure — p.s.i.
Controlled by: ☐ Valve ☒ Cap ☐ Plug
Temperature 90 °F. Quality POOR
Describe artesian or temperature zones below.

8. WELL TEST DATA N/A

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG 075107

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9 5/8	0'	300'	ALLUVIUM SAND & SILT		X
8"	300'	420'	CLAY		X
8"	420'	610'	CLAY STONE		X
8"	610'	680'	CLAY STONE	X	

MICROFILMED
AUG 18 1997

10. Work started SEPT 21, 1992 finished OCT 26, 1992

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BOYLES BROS. Firm No. 503

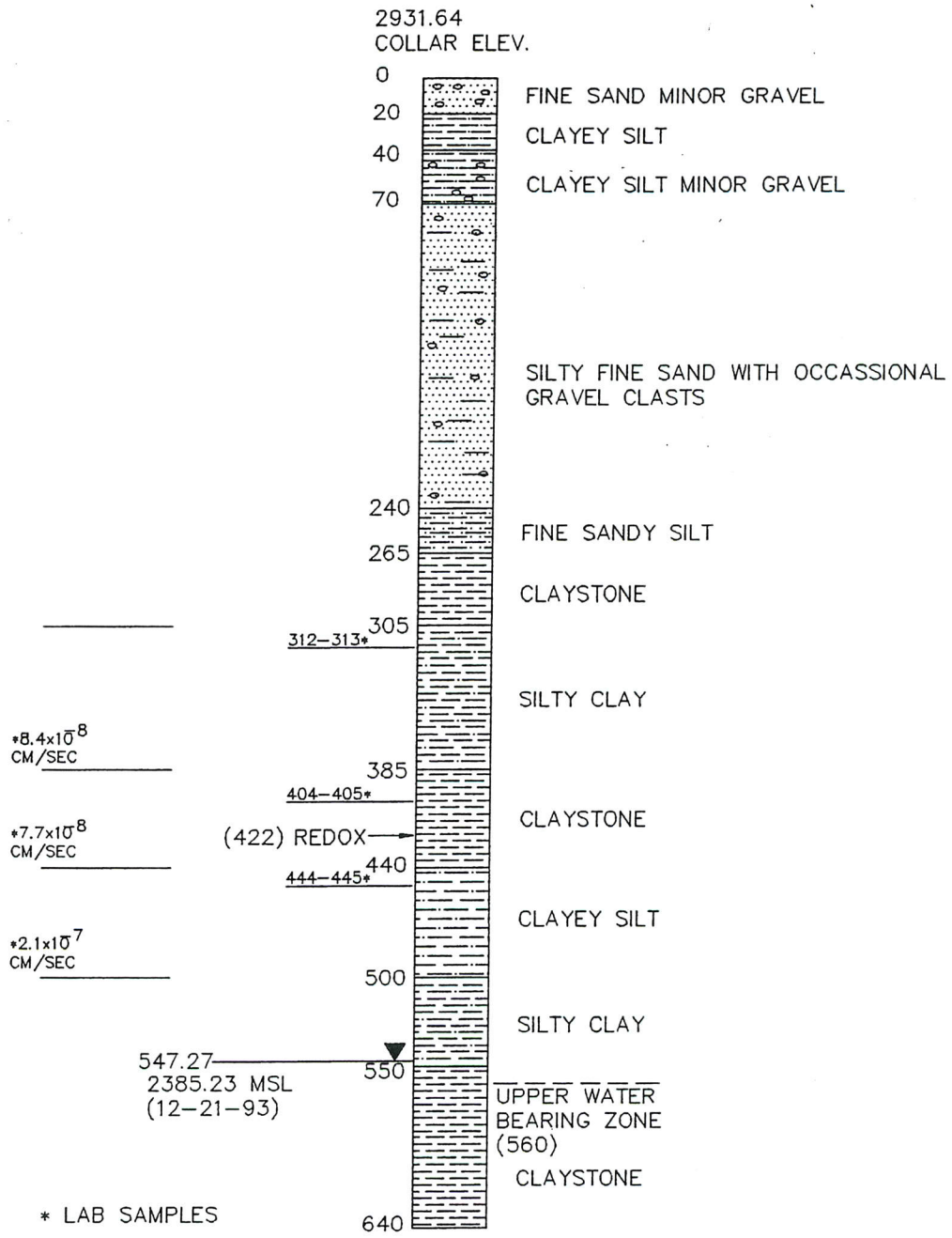
Address BOX 25068 SALT LAKE CITY, UT 84125 Date 11-9-92

Signed by Drilling Supervisor Larry Hill

and

(Operator) _____ *(If different than the Drilling Supervisor)*

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT



LINER TOP ELEV. 2934.98

1" = 100' VERT. FEET

HOLLADAY ENGINEERING CO. ENGINEERS o CONSULTANTS	1431 HWY. 95, BUS. ALT. P. O. BOX 235 PAYETTE, IDAHO 83661 208–642–3304 FAX; 208–642–2159	GEOLOGIC SCHEMATIC OF BOREHOLE PB–4

JOB NO. 120491D DATE: 4–93 TIME: DN SLG CK WBS

Form 238-7
4/92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

PB-5

1. WELL OWNER

Name PICKLES BUTTE SANITARY LANDFILL

Address 115 Albany, Caldwell, ID 83605

Drilling Permit No. 63-93-W-0554-~~001~~004

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.25 inches	4 inches	+ 2.5 feet	512.5 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☐ No
Manufacturer Houston Type Pre-pack
Top Packer or Headpipe _____
Bottom of Tailpipe _____

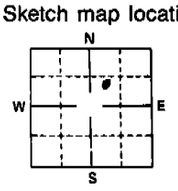
Diameter 4 Slot size .020 Set from 512.5 feet to 522.5 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 10/20
Placed from 496 feet to 535 feet

Surface seal depth 400-496 Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☐ Welded ☐ Solvent Weld ☐ Cemented between strata

Describe access port Top of casing with locking cap and protective cover

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name Pickles Butte Landfill
Lot No. _____ Block No. _____
County Canyon
Address of Well Site Perch Road, Pickles Butte
(give at least name of road)
SW ¼ NE ¼ Sec. 21, T. 2 N ☒ or S ☐, R. 3 E ☐ or W ☒

7. WATER LEVEL

Static water level 514 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 77 °F. Quality Poor
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

70568

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12¾	0	40	tan fine sandy silt		
"	40	48	brown sandy gravel		
"	48	140	tan silty clay		
"	140	185	gray silty fine sand		
"	185	225	gray fine to med sand		
"	225	240	light gray clayey silt		
"	240	250	light gray silty fine sand		
"	250	275	tan clay		
"	275	320	fine to med sand		
"	320		mixed gray fine sand and		
"		400	tan clayey silts		
"	400	435	gray fine sand		
12¾	435	455	no sample		
10"	455	485	tan gray silty claystone		
10"	485	560	gray brown silty fine sand	x	
5¼"	560	620	clayey silt and fine sand	x	
5¼"	620	660	blue gray claystone		

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WATER RESOURCES
WESTERN REGION

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NOV 26 1993
Department of Water Resources

FEB 09 1994

10.

Work started 7-7-93 finished 11-23-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Boyles Brothers Firm No. 503
Address Box 25608 Salt Lake, Ut Date 11-23-93
Signed by Drilling Supervisor Gary K Well
and
(Operator) _____
(If different than the Drilling Supervisor)

USE ADDITIONAL SHEETS IF NECESSARY. FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 298-7
4/92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

PB-6

1. WELL OWNER

Name PICKLES BUTTE SANITARY LANDFILL

Address 6284 Perch Road, Caldwell

Drilling Permit No. 63-93-W-0554-001

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.25 inches	4 inches	+ 2.5 feet	487.5 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☐ No
Manufacturer Houston Type Stainless Steel
Top Packer or Headpipe _____
Bottom of Tailpipe _____

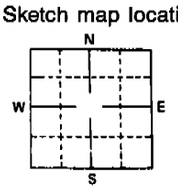
Diameter 4 Slot size .020 Set from 487.5 feet to 497.5 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from 478 feet to 515 feet

Surface seal depth 478 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☒ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Top of casing with locking cap and protective cover.

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name Pickles Butte Landfill

Lot No. _____ Block No. _____

County Canyon

Address of Well Site 6284 Perch Road
(give at least name of road)

SE ¼ NW ¼ Sec. 21, T. 2 N ☒ or S ☐, R. 3 E ☐ or W ☒

7. WATER LEVEL

Static water level 491 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 75 °F. Quality Poor
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG 70567

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12 3/4	0	17	silty sand		
"	17	18	sandy gravel		
"	18	60	tan silty clay		
"	60	95	med sand		
"	95	125	tan calyey silt		
"	125	160	tan clay		
12 3/4	160	195	fine sand		
7 7/8	195	220	silty clay		
"	220	360	fine and med sand		
"	360	380	tan clayey silt		
"	380	435	fine sand		
"	435	510	435-490 tan, 490-510 gray silt x		
"	510	620	gray silty clay		
"	620	690	gray clay stone		
7 7/8	690	700	gray silty clay		

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NOV 30 1993
WATER RESOURCES
WESTERN REGION

RECEIVED
NOV 26 1993
Department of Water Resources

10.

Work started 7-31-93 finished 11-20-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Boyles Brothers Firm No. 503
Address _____ Date 11-23-93
Signed by Drilling Supervisor Gary K Hill
and
(Operator) _____
(If different than the Drilling Supervisor)

FILMED
DEC 09 1994

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
4/92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

PB-7

1. WELL OWNER

Name PICKLES BUTTE SANITARY LANDFILL

Address 6284 Perch Road, Caldwell

Drilling Permit No. 63-93-w-0554-~~001~~ 003

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.25 inches	4 inches	+ 2.2 feet	535 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer Houston Type Wire Wrap
Top Packer or Headpipe _____
Bottom of Tailpipe _____

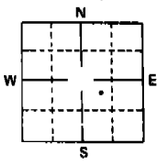
Diameter 4" Slot size .02 Set from 535 feet to 555 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 10/20
Placed from 525 feet to 566 feet

Surface seal depth 520 Material used in seal: ☒ Cement grout
☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Top of casing with protective cover and lock

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name ~~Pickles Butte~~ Landfill
Lot No. _____ Block No. _____
County Canyon
Address of Well Site 6284 Perch Road
(give at least name of road)
NW ¼ SE ¼ Sec. 21, T. 2 N ☒ or S ☐, R. 3 E ☐ or W ☒

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7. WATER LEVEL

Static water level 539' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 77 °F. Quality Poor
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

70565

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12¾	0	25	tan clayey sand		
"	25	35	sandy gravel		
"	35	55	fine sand		
"	55	65	tan clayey silt		
"	65	130	fine and med sand		
"	130	185	tan clay		
"	185	210	clayey fine sand		
"	210	250	silty clay		
"	250	260	fine sand		
"	260	280	clayey silt		
"	280	370	fine sand		
"	370	390	clayey silt		
12¾	390	455	fine sand		
10"	455	515	silt		
"	515	525	tan clayey silt		
"	525	540	gray clayey silt	x	
10"	540	570	gray clay	x	
5¼"	570	600	gray silty clay		
5¼"	600	630	blue gray clay		

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Department of Water Resources

10.

Work started 10-01-93 finished 11-20-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Boyles Brothers Firm No. 503
Address _____ Date 11-23-93
Signed by Drilling Supervisor Gary Hill
and
(Operator) _____
(If different than the Drilling Supervisor)

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
4/92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

PB-8

1. WELL OWNER

Name CANYON COUNTY (PICKLES BUTTE LANDFILL)

Address 115 Albany, Caldwell, ID 83605

Drilling Permit No. 63-93-W-0554-~~001~~ 002

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☒ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☒ Other Stainless

Thickness	Diameter	From	To
.25 inches	4 inches	+ 2.5 feet	377 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☒ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? .020 inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer Houston Type Stainless Steel
Top Packer or Headpipe _____
Bottom of Tailpipe 10' S.S. Sump

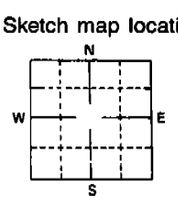
Diameter 4" Slot size .020 Set from 377 feet to 407 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from 299 feet to 424 feet

Surface seal depth 294 Material used in seal: ☒ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☒ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Top of casing with protective cover and locking cap.

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name Pickles Butte Sanitary Landfill

Lot No. _____ Block No. _____

County Canyon

Address of Well Site Perch Road, Pickle Butte
(give at least name of road)

SW ¼ NW ¼ Sec. 21, T. 2 N ☐ or S ☐, R. 3 E ☐ or W ☒

7. WATER LEVEL

Static water level 393' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 74 °F Quality Poor
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

70566

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12 3/4	0	10	tan silty sand		x
"	10	25	tan clayey silt		x
"	25	35	fine sand		x
"	35	50	tan clayey silt		x
"	50	70	tan clay		x
"	70	100	silty fine sand		x
"	100	105	clay		x
"	105	115	fine sand		x
"	115	120	tan clay		x
"	120	125	fine sand		x
"	125	145	tan silty clay		x
"	145	150	sand with cobbles		x
"	150	240	tan silty clay		x
"	240	365	gray clay		x
12 3/4	365	424	gray clay	x	

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Department of Water Resources

10.

Work started 10-26-93 finished 11-20-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Boyles Brothers Firm No. 503
Address _____ Date 11-23-93
Signed by Drilling Supervisor Gary Hill
and
(Operator) _____
(if different than the Drilling Supervisor)

FEB 09 1994

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
7/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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Use Typewriter or Ball Point Pen

PB-9

63855

1 of 2

1. DRILLING PERMIT NO. 63-95-W-0564-001
Other IDWR No.

2. OWNER: County of Canyon
Name HOLLADAY ENGINEERING
Address 1431 BUS ALT HWY 95
City PAYETTE State ID Zip 83661

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 21 SW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon

Address of Well Site PICKLE BUTTE DUMP
PB #9 City
(Give at least name of road + Distance to Road or Landmark)

Lt. ____ Blk. ____ Sub. Name ____

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	381	12000#	POUR

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? Y ☐ N ☐ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
4"	+3	508		SMLLESS	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe 5'

9. PERFORATIONS/SCREENS
☐ Perforations Method
☒ Screens Screen Type HUSTON

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
508	543	.020		4"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
513.17 ft. below ground (TOC) Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

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Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	1	10	TOP SOIL & DUST		
	10	17	GRAVEL IN HARD PAN		
	17	28	LARGER GRAVEL & HARD PAN		
	28	30	CLAY & SMALL GRAVEL		
	30	32	MORE GRAVEL LOOSER		
	32	40	CLAY - TIGHT IN SMALL GRAVEL		
10	40	90	CLAY - TIGHT IN SMALL GRAVEL		
	90	95	COARSE SAND IN CLAY		
	95	112	SANDY CLAY		
	112	120	CLAY		
	120	135	CLAY W/ COARSE SAND		
	135	180	HARD CLAY		
	180	182	SUPER HARD CLAY		
	182	205	CLAY		
	205	210	COARSE SAND & CLAY		
	210	263	VERY HARD CLAY THRU REG		
	263	265	VERY HARD CLAY		
	265	305	SOFT CLAY / SANDY CLAY		
	305	315	SAND		
	315	375	CLAY		
	375	400	VERY HARD CLAY (CLAY ROCK)		
	400	405	SOFT SANDY CLAY / CLAY		
	405	430	REG CLAY		
	430	435	SOFT CLAY OR SANDY CLAY		
	435	445	CLAY REG TYPE		
	445	455	HARD CLAY W/ DARK PEA GRAVEL/COARSE SAND		
	455	465	SAME " " " " " "		
	465	470	SOFT CLAY LIKE SANDY CLAY		
	470	475	CLAY		
	475	480	CLAYSTONE & SANDSTONE LIKE PCS		
8	480	487	" " " " " "		
8	487	510	GRAY BLUE CLAY		
			CONTINUED		

Completed Depth 544 (Measurable) MAR 07 1996
Date: Started ____ Completed ____

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name ADAMSON PUMP & DRILLING Firm No. 0457
Firm Official Dave Adamson Date 11-17-95
and
Supervisor or Operator Dave Adamson Date 11-17-95
(Sign once if Firm Official & Operator)

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Form 238-7
7/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

63656

Use Typewriter
or
Ball Point Pen

PG 2 of 2

PB-9

1. DRILLING PERMIT NO. 63-95-W-0564-001
Other IDWR No.

2. OWNER:
Name
Address
City State Zip

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 21, 10 acres 1/4 SW 40 acres 1/4 NE 160 acres 1/4
Gov't Lot County Canyon

Address of Well Site
City
(Give at least name of road + Distance to Road or Landmark)

Lt. Blk. Sub. Name

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☐ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☐ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? Y☐ N☐ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method
☐ Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
ft. below ground Artesian pressure lb.
Depth flow encountered ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. Bottom hole temp.
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	510	511	FRAC GRAY & BLUE CLAY		
	511	513	REG. " / " "		
	519	528	FRAC CLAY		
	528	528.6	VERY HARD CLAY BLUE/GRAY		
	528.6	530	REG.		
	530	531	FRAC / HARD DRILLING CLAY Pos		
	531	544	REG CLAY BLUE/GRAY		

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Department of Water Resources

MAR 07 1996

Completed Depth 544 (Measurable)
Date: Started 8-25-95 Completed 9-29-95

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name ADAMSON PUMP & DRILLING Firm No. 0457
Firm Official Dave Adamson Date 11-17-95
and
Supervisor or Operator Dave Adamson Date 11-17-95
(Sign once if Firm Official & Operator)

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IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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Pg 1 of 2

PB-10

1. DRILLING PERMIT NO. 63-95-W-0565-001
Other IDWR No.

2. OWNER: County of Canyon
Name HOLLADAY ENGINEERING CO.
Address 1431 BUS. ALT HWY 95
City PAYETTE State ID Zip 83661

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 21, SW 1/4 (10 acres) NE 1/4 (40 acres) 1/4 (160 acres)
Gov't Lot ____ County Canyon

Address of Well Site 15500 MISSOURI,
PICKLEBUTTE LANDFILL City
(Give at least name of road + Distance to Road or Landmark)

Lt. ____ Blk. ____ Sub. Name PB10

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE		20	12,000	POUR

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? Y☐ N☐ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
10	0	140	.125	STEEL	☒	☐	☐	☐
8	+2	500	.125	STEEL	☒	☐	☐	☐
4	+2	504		STAINLESS	☐	☐	☐	☒

Length of Headpipe ____ Length of Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method
☒ Screens Screen Type HOUSTON

MAR 07 1996

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
504	534	.020		4"	STAINLESS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:

11. WELL TESTS: WATER RESOURCES WESTERN REGION
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

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Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	1	5	TOP SOIL		
12	5	10	CLAY W/SMALL GRAVEL		
12	10	20	GRAVEL & SAND		
10	20	31	GRAVEL & SAND		
	31	45	CLAY W/SOME SMALL GRAVEL		
	45	55	" " " COARSE SAND		
	55	73	COARSE SAND W/SOME CLAY (SLOW DRILLING)		
	73	100	CLAY		
	100	105	SAND		
	105	115	SAND (COARSE) W/CLAY SOFT & HARD		
	115	120	COARSE SAND / SMALL GRAVEL W/ CLAY		
	120	125	SAND W/GRAVEL-SMALL & CLAY		
	125	130	SAND W/LITTLE CLAY		
	130	135	SAND & MORE CLAY		
	135	136	VERY HARD CLAY		
	136	205	REG CLAY		
8	205	210	SANDY CLAY		
	210	215	SANDY CLAY W/HARD PCS CLAY		
	215	220	SANDY CLAY - VERY HARD DRILLING		
	220	275	SANDY CLAY - MORE CLAY		
	275	300	SANDY CLAY W/HARD PCS OF CLAY TURNING GREEN		
	300	305	SAND		
	305	339	CLAY		
	339	341	VERY HARD CLAY		
	341	430	CLAY		
	430	455	VERY HARD CLAY (DRILLING SLOWER)		
	455	457	"SUPER" VERY HARD CLAY		
	457	465	REG. CLAY		
	465	470	CLAY W/SMALL GRAVEL		
	470	515	CLAY W/IRON SPOTS)		
	515	518	TURNING GRY		
	518	525	BROWN CLAY		
	525	540	SAND COARSE W/CLAY		

Completed Depth CONTINUED (Measurable)
Date: Started 8-25-95 Completed 9-29-95

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name ADAMSON PUMP & DRILLING Firm No. 04457
Firm Official Dave Adamson Date 11-17-95
and
Supervisor or Operator Dave Adamson Date 11-17-95
(Sign once if Firm Official & Operator)

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Form 238-7
7/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

63658 C Pg 2 of 2

PB-10

1. DRILLING PERMIT NO. 63-95-W-0565-001
Other IDWR No.

2. OWNER:
Name HOLLADAY ENGINEERING CO
Address
City PB#10 State Zip

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 21, 1/4 (10 acres) SW 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot County Canyon

Address of Well Site
City
(Give at least name of road + Distance to Road or Landmark)

Lt. Blk. Sub. Name

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☐ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☐ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? Y☐ N☐ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method MAR 07 1996
☐ Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
ft. below ground Artesian pressure lb.
Depth flow encountered ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. Bottom hole temp.
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	540	560	TURNING BLUE CLAY W/ COARSE SAND		
			CAVED IN TO 544		

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Department of Water Resources

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NOV 20 1995
WATER RESOURCES
WESTERN REGION

Completed Depth 544 (Measurable)
Date: Started 8-25-95 Completed 9-29-95

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Firm No.
Firm Official Dave Adamson Date 11-17-95
and
Supervisor or Operator Dave Adamson Date 11-17-95
(Sign once if Firm Official & Operator)

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W3

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

861196
PB-11

1. WELL TAG NO. D 0059190

Drilling Permit No. 912544 - 861196

Water right or injection well # _____

2. OWNER:

Name Canyon County Solid Waste Department

Address 15500 Missouri Avenue

City Nampa State ID Zip 83686

3.WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 20 NW 1/4 (10 acres) SE 1/4 (40 acres) NE 1/4 (160 acres)

Gov't Lot _____ County Canyon

Lat. 43 ° 29.836 (Deg. and Decimal minutes)

Long. 116 ° 43.013 (Deg. and Decimal minutes)

Address of Well Site 15500 Missouri Avenue

(Give at least name of road + Distance to Road or Landmark) City Nampa

Lot. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
3/8 Pellets	308'	330'	17 - 5 Gal	Buckets Tremie
Neat Cement	60'	308'	6 yards	Tremie

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
4"	+2	340'	sch 40	SS	☒	☐	☐	☒
4"	400'	405'	sch 40	SS	☒	☐	☐	☒
10"	+2	-3	250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Overbore

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
340'	400'	.020		4"	SS	N/A

Length of Headpipe _____ Length of Tailpipe 5'

Packer ☐ Y ☒ N Type _____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
10-20 sand	330'	420'	84 bags	Tremie

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 380' Static water level (ft) 293

Water temp. (°F) _____ Bottom hole temp. (°F) 70.8 F

Describe access port Monitor Well Cap / Locking Lid

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
N/A		

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☐	☐
☐	☐	☐	☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
19"	0'	5'	Sandy Clay		
19"	5'	10'	Sand		
19"	10'	24'	Sandy Clay		
19"	24'	36'	Sand		
19"	36'	50'	Clay		
10"	50'	52'	Clay		
10"	52'	55'	Orange Sand		
10"	55'	93'	Sandy Clay		
10"	93'	96'	Sand		
10"	96'	103'	Yellow Clay		
10"	103'	129'	Blue Clay		
10"	129'	133'	Yellow Clay		
10"	133'	176'	Blue Sandy Clay		
10"	176'	420'	Blue Clay	X	
			Additional Sealing Procedures:		
			3/4 Bentonite Chips from 0' to 60' -		
			95 bags		

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WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 405'

Date Started: Jun 13, 2011 Date Completed: Jul 1, 2011

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drilling Co. No. 457

*Principal Driller Doug Adamson Date 2-8-12

*Driller Matt Stoffer Date 2-3-12

*Operator II _____ Date _____

Operator I _____ Date _____

*** Signature of Principal Driller and rig operator are required.**

Form 238-7
6/07

W3

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

861197

PB-12

1. WELL TAG NO. D 0059191

Drilling Permit No. 912545-861197

Water right or injection well # —

2. OWNER:

Name Canyon County Solid Waste Department

Address 15500 Missouri Avenue

City Nampa State ID Zip 83686

3.WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 3 ~~East~~ ☒ or West ☒

Sec. 20 NW 1/4 (10 acres) NE 1/4 (40 acres) SE 1/4 (160 acres)

Gov't Lot ____ County Canyon

Lat. 43 ° 29.666 (Deg. and Decimal minutes)

Long. 116 ° 43.030 (Deg. and Decimal minutes)

Address of Well Site 15500 Missouri Avenue

(Give at least name of road + Distance to Road or Landmark) City Nampa

Lot. ____ Blk. ____ Sub. Name ____

4. USE:

☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other ____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other ____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other ____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
Coated pellets	450	469.5	17 - 5 Gal	Buckets Tremie
Neat Cement	97	450	6.5 yds	Tremie

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
4"	+2	480	sch40	SS	☒	☐	☐	☒
10"	+2	-3	250	Steel	☐	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) ____

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method ____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Overbore

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
480	540	.020		4"	SS	N/A

Length of Headpipe ____ Length of Tailpipe 5'

Packer ☐ Y ☒ N Type ____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
10-20 sand	469.5	550	83 bags	Tremie

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) ____

Describe control device ____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 500' Static water level (ft) 313'

Water temp. (°F) ____ Bottom hole temp. (°F) 76.8

Describe access port Monitor Well Cap / Locking Lid

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
N/A		

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☐	☐
☐	☐	☐	☐

Water quality test or comments: ____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
19"	0'	17'	Sand		
19"	17'	32'	Sandy Clay		
19"	32'	38'	Sand		
19"	38'	41'	Sandy Clay		
19"	41'	50'	Sand		
10"	50'	79'	Sandy Clay		
10"	79'	81'	Yellow Clay		
10"	81'	126'	Brown Sandy Clay		
10"	126'	180'	Blue Clay Sandstone		
10"	180'	500'	Blue Hard Clay		
10"	500'	540'	Blue Clay with Sand Strips	X	
10"	540'	560'	Blue Sand	X	
			Additional Sealing Procedures:		
			3/4 Bentonite from 0' to 97' -		
			91 bags		

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WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 545'

Date Started: Jul 5, 2011 Date Completed: Jul 15, 2011

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drilling Co. No. 457

*Principal Driller Dave Adamson Date 2-8-12

*Driller Matt Steffen Date 2-3-12

*Operator II ____ Date ____

Operator I ____ Date ____

*** Signature of Principal Driller and rig operator are required.**

Form 238-7
6/07

W3

861198

PB-13

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0059192

Drilling Permit No. 912546 - 861198

Water right or injection well # _____

2. OWNER:

Name Canyon County Solid Waste Department

Address 15500 Missouri Avenue

City Nampa State ID Zip 83686

3.WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 20 NW (10 acres) 1/4 SE (40 acres) 1/4 SE (160 acres) 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 29.425 (Deg. and Decimal minutes)

Long. 116 ° 42.949 (Deg. and Decimal minutes)

Address of Well Site 15500 Missouri Avenue

(Give at least name of road + Distance to Road or Landmark) City Nampa

Lot. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
Coated pellets	820	800	12 - 5 Gal	Bucket Tremie
Neat Cement	800	+1	20 yards	Tremie/Pump

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
10"	+2	440	.250	Steel	☒	☐	☐	☒
8"	+2	558	.250	Steel	☒	☐	☐	☒
4"	+2	840	.258	SS	☒	☐	☐	☒
4"	900	905	.258	SS	☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Overbore

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
900'	840'	.020		4"	SS	N/A

Length of Headpipe _____ Length of Tailpipe 5'

Packer ☐ Y ☒ N Type _____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
10-20 sand	905'	820'	72 bags	Tremie

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 732'

Water temp. (°F) _____ Bottom hole temp. (°F) 80

Describe access port Monitor Well Cap / Locking Lid

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
N/A		

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☐	☐
☐	☐	☐	☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
10"	0'	25'	Frac Basalt		
10"	25	85	Gravel		
10"	85	160	mud stone		
10"	160'	210	Fine Sand		
10"	210	255	Brown Clay		
10"	255	380	Yellow Clay		
10"	380	420	Brown Clay		
10"	420'	460'	Light Brown Clay		
10"	460'	500'	Gray Clay		
10"	500'	560'	Silty Gray Clay		
10"	560'	800	Gray Clay		
10"	800	803	Silty Clay		
10"	803	920	Gray Clay	X	

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WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 905'

Date Started: Nov 1, 2011 Date Completed: Feb ~~14~~ 4, 2012

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drilling Co. No. 457

*Principal Driller Dave Adamson Date 2-8-12

*Driller John Shelton Date _____

*Operator II _____ Date _____

Operator I Sam Navarro Date 2-6-12

*** Signature of Principal Driller and rig operator are required.**

Form 238-7
6/07

W3

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

PB-14
861199

1. WELL TAG NO. D 0059193

Drilling Permit No. 912547 - 861199

Water right or injection well # _____

2. OWNER:

Name Canyon County Solid Waste Department

Address 15500 Missouri Avenue

City Nampa State ID Zip 83686

3.WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 21 SW (10 acres) 1/4 SW (40 acres) 1/4 SW (160 acres) 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 29.314 (Deg. and Decimal minutes)

Long. 116 ° 42.731 (Deg. and Decimal minutes)

Address of Well Site 15500 Missouri Avenue

(Give at least name of road + Distance to Road or Landmark) City Nampa

Lot. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
Coated pellets	807	834	17 - 5 Gal	Bucket Tremie
Neat Cement	0'	807	22 yards	Tremie/Pump

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
10"	+1	480	.250	Steel	☒	☐	☐	☒
4"	+2	845	.258	SS	☒	☐	☐	☒
4"	905	910	.258	SS	☒	☐	☐	☒
					☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Overbore

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
845'	905'	.020		4"	SS	N/A

Length of Headpipe _____ Length of Tailpipe 5'

Packer ☐ Y ☒ N Type _____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
10-20 sand	834'	902'	62 bags	Tremie

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 830' Static water level (ft) 716'

Water temp. (°F) _____ Bottom hole temp. (°F) 84

Describe access port Monitor Well Cap / Locking Lid

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
N/A		

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☐	☐
☐	☐	☐	☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
15.25	0	31	Gravel Cemented		
15.25	31	43	Sand		
15.25	43	51	Clay w/Sand		
15.25	51	104	Fine Sand w/clay streaks		
15.25	104	158	Gravel and Sand		
15.25	158	182	Sand		
15.25	182	207	Sandy Clay		
15.25	207	245	Sticky Brown Clay		
15.25	245	267	Clay w/Sand Streaks		
15.25	267	481	Sticky Brown Clay		
10"	481	523	Sticky Blue Clay		
10"	523	550	Sandy Blue Clay		
10"	550	771	Sticky Blue Clay		
10"	771	774	Sand Stone Layer		
10"	774	826	Sticky Blue Clay		
10"	826	831	Sand Stone Layer	X	
10"	831	920	Sticky Blue Clay	X	

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WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 910'

Date Started: Jul 19, 2011 Date Completed: Oct 12, 2011

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drilling Co. No. 457

*Principal Driller Dave Adamson Date 2-8-12

*Driller Matt Stoffel Date 2-3-12

*Operator II _____ Date _____

Operator I _____ Date _____

*** Signature of Principal Driller and rig operator are required.**

Form 238-7
6/07

W3

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

PB-15
861200

1. WELL TAG NO. D 0059194

Drilling Permit No. 912548-861200

Water right or injection well # —

2. OWNER:

Name Canyon County Solid Waste Department

Address 15500 Missouri Avenue

City Nampa State ID Zip 83686

3.WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 21 SE (10 acres) 1/4 SW (40 acres) 1/4 SW (160 acres) 1/4

Gov't Lot ____ County Canyon

Lat. 43 ° 29.329 (Deg. and Decimal minutes)

Long. 116 ° 42.480 (Deg. and Decimal minutes)

Address of Well Site 15500 Missouri Avenue

(Give at least name of road + Distance to Road or Landmark) City Nampa

Lot. ____ Blk. ____ Sub. Name ____

4. USE:

☐ Domestic ☐ Municipal ☒ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other ____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other ____

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other ____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
Coated pellets	757	777	17 - 5 Gal	Bucket Tremie
Neat Cement	0'	757	15 yards	Tremie/Pump

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
4"	+2	790	.258	SS	☒	☐	☐	☒
4"	850	855	.258	SS	☐	☐	☐	☐
10"	+3	400'	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) ____

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method ____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Overbore

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
790	850	.020		4"	SS	N/A

Length of Headpipe ____ Length of Tailpipe 5'

Packer ☐ Y ☒ N Type ____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
10-20 sand	777	866	75 bags	Tremie

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) ____

Describe control device ____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 800 Static water level (ft) 665

Water temp. (°F) ____ Bottom hole temp. (°F) 84

Describe access port Monitor Well Cap / Locking Lid

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
N/A		

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☐	☐
☐	☐	☐	☐

Water quality test or comments: ____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
15.25	0	10	Coarse Sand / Some Gravel		
15.25	10	42	Medium to Coarse Sand		
15.25	42	74	Silty Clay - Brown Yellow		
15.25	74	87	Yellow Sand		
15.25	87	102	Brown Sand		
15.25	102	106	Brown Clay		
15.25	106	186	Brown Clay		
15.25	186	261	Brown Sand		
15.25	261	281	Brown Clay		
15.25	281	296	Brown Sand		
15.25	296	307	Brown Fine Sand		
15.25	307	311	Brown Clay		
15.25	311	358	Brown Sandy Clay		
15.25	358	400	Blue Clay		
10"	400'	423	Blue Clay		
10"	423	431	Brown Sandstone		
10"	431	435	Brown Sand		
10"	435	476	Blue Clay		
10"	476	785	Blue Sandstone		
10"	785	855	Blue Sandstone w/cracks	X	

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WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 855

Date Started: Aug 22, 2011 Date Completed: Oct 27, 2011

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drilling Co. No. 457

*Principal Driller Dave Adamson Date 2-8-12

*Driller John Sy Date ____

*Operator II ____ Date ____

Operator I ____ Date ____

*** Signature of Principal Driller and rig operator are required.**

MONITORING WELL LITHOLOGIC LOG AND COMPLETION DETAILS

Project Name: Pickles Butte Landfill Project No: 114-571040 Well No: PB-16

Location of Well: Approximately 85 feet southwest of PB-4. N 43º29'27.1279", W 116º42'13.5342"

Date Started: Feb 19, 2020 Date Completed: Mar 11, 2020 Tt Geologist: R. Phillips

Drilling Company: Granite (Layne) Driller Name: Charles Johnson

Drilling Method: Rotary Boring Diameter: 9.5 to 22", See Diagram Fluids Used: Mud, water, foam

Depth Drilled: 597' Depth Cased: 597' Casing Dia. and Type: 4" stainless steel

Depth to Top of Screen: 572' Screened Section Length: 20 Slot Size: 0.02

Filter Pack Type and Size: Silica sand, 10/20 and 12/20 Depth From: 562' To: 597'

Seal Description (Types and Depths): Granular bentonite (560' to 562'), Neat cement grout (surface to 560')

Surface Completion and Security: Concrete pad, 10" dia. above-ground casing protector, locking cover

Top of Casing Elevation: 2927.30' ___Relative X Absolute TOC Relative to GS: 2.75' Depth to GW: 550.67'

Well Development Method: Surging and bailing (March 11, 25, & 27) Amount Purged: ~300 gallons

Notes: Lithology shown below is generalized. Tetra Tech personnel were not present for the upper 279 feet of drilling, and rotary drilling techniques did not allow for detailed observations within the stratigraphic units.

Depth (ft)	Soil or Rock Description; Water Notes	Notes
0	SAND, fine grained, with gravel	Feb 19: 0 to 25'
10	SAND, fine grained with silt	Boring Diameter: 22",
20	CLAY	0 to 40 feet.
25	CLAY with sand	Mud and water used,
35	SAND	upper 300 feet
		Feb 20: 25' to 40'
40	SAND with silt lenses	Boring Diameter:
		14.75", 40 to 279 ft.
		Feb 22: 40' to 159'
163	SAND with silt	Feb 24: 159' to 239'
240	SAND, fine grained	Feb 25: 239' to 279'
262	CLAYSTONE with silt; clay is slightly plastic, trace amount of fine sand,	Boring Diameter:
	weakly consolidated, estimate 80% clay and 20% silt, brown.	9.5" 279 to 597 ft.
330	CLAY with silt, less consolidated than claystone above and below, brown	Feb. 28: 279' - 427'
	to dark tan.	Drill foam used 300' to
350	Slightly more consolidated, Reddish brown color on some fragments	500'
	below 350 feet.	
370	CLAYSTONE; contains some silt and trace fine sand, clay is slightly plasti	
	weakly to moderately consolidated, estimate 80% clay and 20% silt,	
	brown with occasional red-brown color.	
390	Color changes to green-brown, then more green below 430'	
445	SILTSTONE; trace clay and fine sand, weakly consolidated, green-grey	Feb 29: 427' - 497'
	color indicates the redox boundary.	
465	More brown fragments, moderate consolidation	
475	Fewer brown fragments, overall color grades to darker green	

485	SILT with clay, dark green to dark grey; some fine sand, weakly	
	consolidated.	
520	CLAY with silt; slightly plastic, slightly moist, dark green to dark grey	March 5: 497' - 577'
	Possibly a bit more moisture below 535	
	Water check at 557': No water after 90 minutes	
565	CLAYSTONE; less moisture than above material, moderately consolidated	
	dark grey	
	Water check at 577': No water after sitting overnight, but some water	
	returned with air when drilling resumed the morning of March 6.	
	Water check at 597': Water measured at approx. 590' BGS	March 6: 577'-597'
	Overdrill with 9.5" bit from 279' to 597' on March 7; drill foam used.	March 7: Redrill 279'-
		597' with 9.5 inch bit
597	Bottom of Boring	

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Figure No. 1

LOG OF BORING

Boring B2021-1

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.502927 E: -116.624204	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2740.4 ft
Date Started: 11/15/21 / **Date Finished:** 11/15/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		3 - 3 - 4		TOPSOIL, moist, tan/brown.	0.3 / 2740.1						
			100		2 - 3 - 3		Poorly-Graded SAND with silt (SP-SM), loose, moist, brown to gray, fine to medium grained, subangular.		9	NV	NP	12	110	
5 / 2735.4			100		2 - 3 - 5			5.3 / 2735.1						
			100		3 - 6 - 9		Poorly-Graded SAND (SP), loose to medium dense, moist, gray to tan, medium grained, subangular to angular.		8					
			100		9 - 13 - 13									
10 / 2730.4			100		8 - 11 - 13				6					
							Silty SAND (SM), medium dense, moist, gray to tan, fine grained, medium plasticity, Pockets of clay.	11.2 / 2729.2						
15 / 2725.4			100		10 - 13 - 15		Poorly-Graded SAND (SP), medium dense, slightly moist, gray, fine to medium grained, subangular to angular, medium plasticity, Small pockets of grey clay.	14.1 / 2726.3	5					
20 / 2720.4			100		10 - 12 - 13									
25 / 2715.4			100				Poorly-Graded SAND with silt (SP-SM), dense to very dense, slightly moist, gray, fine to medium grained.	24.1 / 2716.3		NV	NP	6	113	Cc= 0.03
			100		13 - 21 - 23									
30 / 2710.4			100		13 - 25 - 34			31.5 / 2708.9						

Boring Depth: 31.5 ft, *Elevation: 2708.9 ft*

Water Level Observations		Remarks:
During Drilling: Not Encountered		
After Drilling: Not Recorded	**After Drilling:** Not Recorded	

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Figure No. 2

LOG OF BORING

Boring B2021-2

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID		**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.501658 E: -116.713829
Project Number: 114-571040-2022		**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 2739.0 ft
Date Started: 11/16/21	**Date Finished:** 11/16/21	**Drilling Fluid:** None	**Abandonment Method:** Grout
Driller: Holt Services **Logger:** Matt Adams		**Location:** Refer to site map.	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		2 - 1 - 3		Silty SAND (SM), very loose, slightly moist, brown to tan, fine grained, subangular to angular.		7					
			100		2 - 1 - 1		Poorly-Graded SAND with silt (SP-SM), very loose to very dense, slightly moist to moist, brown to gray, fine to medium grained, angular to subangular.	2.3 2736.7						
5 2734.0			100		3 - 3 - 4				3					
			100		2 - 4 - 6									
			100		7 - 10 - 14				3					
10 2729.0			100		10 - 15 - 20									
15 2724.0			100		7 - 11 - 17				5					
20 2719.0			150		11 - 17 - 21				3					
25 2714.0			100		11 - 16 - 21									
30 2709.0			100		15 - 25 - 34			31.5 2707.5						

Boring Depth: 31.5 ft, *Elevation: 2707.5 ft*

Water Level Observations	During Drilling: Not Encountered	Remarks:
After Drilling: Not Recorded	After Drilling: Not Recorded	

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Figure No. 3

LOG OF BORING

Boring B2021-3

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.500874 E: -116.716768	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2737.7 ft
Date Started: 11/16/21 / **Date Finished:** 11/22/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Slightly moist, tan.	0.7						
							SILT (ML), stiff, slightly moist, light tan, low plasticity.	2737.0						
5 / 2732.7			100		2 - 3 - 7									
							Silty SAND (SM), loose to medium dense, slightly moist to slightly moist, light tan, very fine grained.	8.0 / 2729.7						
10 / 2727.7			100		7 - 9 - 9									
15 / 2722.7			100		11 - 11 - 12									
20 / 2717.7			93		10 - 12 - 13				3					
25 / 2712.7			80							NV	NP	29		
			100		11 - 15 - 15									
30 / 2707.7			100		10 - 12 - 14				3					
35 / 2702.7			100		11 - 14 - 21									
40 / 2697.7			93		10 - 14 - 16									
							SILT (ML), very stiff, slightly moist, gray, low plasticity.	41.1 / 2696.6						
							Silty SAND (SM), medium dense to dense, slightly moist, tan to gray, fine grained, subangular to angular.	41.9 / 2695.8						
45 / 2692.7			100		12 - 12 - 12									
							SILT (ML), very stiff, slightly moist, gray, low plasticity.	47.0 / 2690.7						
							Silty SAND (SM), medium dense to	47.7 / 2690.0						
50 / 2687.7									3					

Water Level Observations		Remarks:
After Drilling: Not Recorded	During Drilling: Not Encountered After Drilling: Not Recorded	

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LOG OF BORING

Boring B2021-3

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.500874 E: -116.716768	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2737.7 ft
Date Started: 11/16/21 **Date Finished:** 11/22/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		4 - 18 - 19		dense, slightly moist, tan to gray, fine grained, subangular to angular.	52.0 / 2685.7						
55 / 2682.7							SILT (ML), very stiff, slightly moist, gray to tan, low plasticity, Hard consolidated pieces.	56.2 / 2681.5						
60 / 2677.7			100				Silty SAND (SM), medium dense to dense, slightly moist, tan to gray, fine grained, subangular to angular.			NV NV	NP NP	19 7	100	Friction Angle= 20.21 degrees Cohesion= 0.282 ksf
65 / 2672.7														
70 / 2667.7			100		15 - 25 - 50									
75 / 2662.7														
							Sandy SILT (ML), stiff, dry, gray to red, fine grained, Broken siltstone.	76.5 / 2661.2						
							Silty SAND (SM), medium dense to dense, slightly moist, tan to gray, fine grained, subangular to angular.	78.5 / 2659.2						
80 / 2657.7			75					81.2 / 2656.5		NV	NP	24		Friction Angle= 32.81 degrees Cohesion= 0.413 ksf
			100		4 - 11 - 50		Poorly-Graded SAND (SP), very dense, dry, salt & pepper, fine to medium grained, subangular to angular.		2					
85 / 2652.7														
90 / 2647.7			100		23 - 40 - 50									
95 / 2642.7							Poorly-Graded SAND with silt (SP-SM), very stiff, dry, tan, fine to medium grained, subangular, Large amounts of broken sandstone.	95.0 / 2642.7						
100 / 2637.7			0		50/0.2ft		Silty SAND (SM), very dense, dry, gray to red, fine to coarse grained.	100.0 / 2637.7						

Water Level Observations		Remarks:
After Drilling: Not Recorded	During Drilling: Not Encountered After Drilling: Not Recorded	

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LOG OF BORING

Boring B2021-3

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.500874 E: -116.716768	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2737.7 ft
Date Started: 11/16/21 / **Date Finished:** 11/22/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
105 / 2632.7							subangular, Mixed with large pieces of siltstone.							
110 / 2627.7			143		31 - 50/0.2ft									
115 / 2622.7							Silty SAND (SM), very dense, dry to moist, salt & pepper to gray, fine to medium grained, subangular to angular, Minimal pieces of sandstone. Decreasing with depth.	115.0 / 2622.7		NV	NP	15	104	
120 / 2617.7			88		47 - 50/0.3ft				4					
125 / 2612.7														
130 / 2607.7														
135 / 2602.7							Poorly-Graded SAND with silt (SP-SM), very stiff, dry, tan, fine to coarse grained, subangular, Large amounts of broken sandstone and siltstone.	135.0 / 2602.7						
140 / 2597.7			100		14 - 33 - 50		Poorly-Graded SAND (SP), very dense, dry to moist, salt & pepper to gray, fine to medium grained, subangular to angular, Minimal pieces of sandstone..	138.6 / 2599.1						
145 / 2592.7							Silty CLAY (CL-ML), hard, very moist, gray, high plasticity.	146.5 / 2591.2						
150 / 2587.7			100		16 - 33 - 50									

Water Level Observations		
After Drilling: Not Recorded	During Drilling: Not Encountered After Drilling: Not Recorded	Remarks:

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Boring B2021-3

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID		**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.500874 E: -116.716768
Project Number: 114-571040-2022		**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 2737.7 ft
Date Started: 11/16/21	**Date Finished:** 11/22/21	**Drilling Fluid:** None	**Abandonment Method:** Grout
Driller: Holt Services **Logger:** Matt Adams		**Location:** Refer to site map.	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
155 / 2582.7														
160 / 2577.7			100		16 - 24 - 36									
165 / 2572.7														
170 / 2567.7							Boring Depth: 170.0 ft, *Elevation: 2567.7 ft*	170.0 / 2567.7						

Water Level Observations		
During Drilling: Not Encountered		Remarks:
After Drilling: Not Recorded	**After Drilling:** Not Recorded	

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Figure No. 4

LOG OF BORING

Boring B2021-4

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.665364 E: -116.688388	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2797.2 ft
Date Started: 12/8/21 / **Date Finished:** 12/14/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							TOPSOIL, moist, dark brown.	0.7 / 2796.5						
							Silty SAND (SM), medium dense, moist to slightly moist, tan, fine grained, angular.							
5 / 2792.2			67		2 - 9 - 7				6					
10 / 2787.2			67		5 - 9 - 7									
15 / 2782.2			80		5 - 12 - 14		SILT (ML), very stiff, slightly moist, tan, low plasticity.	15.0 / 2782.2						
20 / 2777.2			100		18 - 37 - 48		Silty SAND (SM), medium dense, moist to slightly moist, tan, fine grained.	20.0 / 2777.2	5					
25 / 2772.2			100		16 - 35 - 48		Silty CLAY (CL-ML), very stiff, slightly moist, tan, medium plasticity.	25.2 / 2772.0						
							SILT (ML), very stiff, slightly moist, tan, low plasticity.	27.7 / 2769.5						
30 / 2767.2			100		16 - 27 - 33									
35 / 2762.2			80		15 - 30 - 34				8					
40 / 2757.2			100		11 - 23 - 18		Silty SAND (SM), medium dense, moist to slightly moist, tan, fine grained, angular to subangular.	40.0 / 2757.2 41.0 / 2756.2						
45 / 2752.2			100		9 - 13 - 13		Silty CLAY (CL-ML), very stiff, slightly moist, tan to black, medium plasticity, Broken pieces of consolidated clay and sit.		16					
50 / 2747.2							Poorly-Graded SAND with silt (SP-SM),	50.0				6		

Water Level Observations		Remarks:
After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	

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Figure No. 4

LOG OF BORING

Boring B2021-4

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.665364 E: -116.688388	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2797.2 ft
Date Started: 12/8/21 **Date Finished:** 12/14/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		9 - 26 - 41		medium dense to very dense, slightly moist, tan to salt & pepper, fine to medium grained, subangular to angular.	2747.2						
55 / 2742.2														
60 / 2737.2			80		2 - 5 - 18				2					
65 / 2732.2														
70 / 2727.2			67		6 - 13 - 23									
							Silty SAND (SM), medium dense, moist to slightly moist, tan, fine grained, angular to subangular.	73.0 / 2724.2						
75 / 2722.2														
80 / 2717.2			80		2 - 7 - 23									
85 / 2712.2														
							Poorly-Graded SAND (SP), stiff, dry, tan to yellow, fine to medium grained, angular to subangular.	87.0 / 2710.2						
90 / 2707.2			100		13 - 40 - 50		Silty SAND (SM), hard, moist, tan to brown, fine grained, angular to subangular, Broken pieces of consolidated clay.	90.0 / 2707.2		NV	NP	32		
95 / 2702.2														
100 / 2697.2			100		9 - 18 - 20				22					

Water Level Observations		Remarks:
After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	

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Figure No. 4

LOG OF BORING

Boring B2021-4

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.665364 E: -116.688388	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2797.2 ft
Date Started: 12/8/21 **Date Finished:** 12/14/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
105 / 2692.2							Sandy SILT (ML), very stiff, slightly moist, tan, low plasticity.	104.0 / 2693.2						
							Silty CLAY (CL-ML), hard, moist, tan to brown, medium plasticity, Broken pieces of consolidated clay.	105.0 / 2692.2						
110 / 2687.2			100		6 - 12 - 20									
115 / 2682.2														
							Sandy SILT (ML), very stiff, slightly moist, tan, low plasticity.	117.5 / 2679.7						
120 / 2677.2			100		31 - 70/0.4ft		Silty SAND (SM), medium dense to very dense, slightly moist, tan to salt & pepper, fine to medium grained, subangular to angular.	120.0 / 2677.2		NV	NP	44		Friction Angle= 29.51 degrees Cohesion= 0.588 ksf
125 / 2672.2														
130 / 2667.2			100		9 - 21 - 26		Poorly-Graded SAND (SP), dense to very dense, slightly moist, salt & pepper, fine to medium grained, angular to subangular.	129.0 / 2668.2						
135 / 2662.2														
140 / 2657.2			100		30 - 48 - 44				2					
145 / 2652.2							Sandy SILT (ML), very stiff, slightly moist, tan to brown, low plasticity.	145.0 / 2652.2						
150 / 2647.2			111		31 - 50/0.4ft									

Water Level Observations		
After **Drilling:** Not Encountered	During **Drilling:** Not Recorded After **Drilling:** Not Recorded	Remarks:

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Figure No. 4

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Boring B2021-4

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID		**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.665364 E: -116.688388
Project Number: 114-571040-2022		**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 2797.2 ft
Date Started: 12/8/21	**Date Finished:** 12/14/21	**Drilling Fluid:** None	**Abandonment Method:** Grout
Driller: Holt Services **Logger:** Matt Adams		**Location:** Refer to site map.	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
155 / 2642.2							Poorly-Graded SAND (SP), dense to very dense, slightly moist, salt & pepper, fine to medium grained, angular to subangular.	155.0 / 2642.2						
								157.0 / 2640.2						
160 / 2637.2			111		29 - 50/0.4ft		Sandy SILT (ML), very stiff, slightly moist, tan to brown, low plasticity.	159.0 / 2638.2						
165 / 2632.2							Poorly-Graded SAND (SP), dense to very dense, slightly moist, salt & pepper, fine to medium grained, angular to subangular.							
170 / 2627.2			88		50 - 50/0.3ft									
175 / 2622.2							Silty SAND (SM), very stiff, dry, gray, fine grained, angular to subangular.	175.0 / 2622.2						
							Poorly-Graded SAND (SP), dense to very dense, slightly moist, salt & pepper, fine to medium grained, angular to subangular.	177.0 / 2620.2						
180 / 2617.2														
							Silty SAND (SM), very stiff, dry, gray to gray, fine grained, angular to subangular.	183.0 / 2614.2						
185 / 2612.2														
190 / 2607.2							Poorly-Graded SAND with silt (SP-SM), medium dense to very dense, slightly moist, tan to salt & pepper, fine to medium grained, subangular to angular.	190.0 / 2607.2						
195 / 2602.2														
200 / 2597.2								200.0 / 2597.2						

Boring Depth: 200.0 ft, *Elevation: 2597.2 ft*

Water Level Observations		Remarks:
After Drilling: Not Encountered	**During Drilling:** Not Recorded **After Drilling:** Not Recorded	

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Figure No. 5

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Boring B2021-5

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.499133 E: -116.713491	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2661.6 ft
Date Started: 12/14/21 **Date Finished:** 12/19/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							TOPSOIL, moist, brown.	0.7						
							Sandy SILT (ML), stiff, slightly moist, tan, fine grained, angular to subangular.	2660.9						
5 / 2656.6			100		6 - 8 - 5				4					
10 / 2651.6			100		12 - 21 - 43		Poorly-Graded SAND (SP), medium dense to very dense, moist, tan to red, fine to medium grained, angular to subangular.	10.0 / 2651.6						
15 / 2646.6			100		5 - 7 - 16				3					
20 / 2641.6			100		10 - 21 - 26									
25 / 2636.6														
							Silty CLAY (CL-ML), medium stiff, slightly moist, white to gray, high plasticity.	27.0 / 2634.6						
							Poorly-Graded SAND (SP), medium dense to very dense, slightly moist, salt & pepper to red, fine to medium grained, angular to subangular.	29.0 / 2632.6						
30 / 2631.6			100		10 - 27 - 40									
35 / 2626.6			100		10 - 22 - 35				4					
							SILT (ML), hard, slightly moist, tan to gray, low plasticity.	37.0 / 2624.6						
40 / 2621.6			150		27 - 33 - 45/0.0ft									
							Poorly-Graded SAND (SP), medium dense to very dense, slightly moist, salt & pepper to red, fine to medium grained, angular to subangular.	42.0 / 2619.6						
45 / 2616.6			100		23 - 39 - 42			44.0 / 2617.6						
							SILT (ML), hard, slightly moist, tan to gray, low plasticity.	45.0 / 2616.6						
50 / 2611.6							Silty SAND (SM), medium dense to very dense, slightly moist, gray to brown, fine	50.0						

Water Level Observations		Remarks:
▼ After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	

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Figure No. 5

LOG OF BORING

Boring B2021-5

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.499133 E: -116.713491	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2661.6 ft
Date Started: 12/14/21 / **Date Finished:** 12/19/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		27 - 38 - 50		grained, angular to subangular.	2611.6						
							Silty CLAY (CL-ML), hard, slightly moist, tan, high plasticity.	51.0 2610.6						
55 2606.6							Poorly-Graded SAND (SP), medium dense to very dense, slightly moist, gray to tan, fine to medium grained, angular to subangular.	54.0 2607.6 55.0 2606.6						
60 2601.6			100		34 - 50/0.1ft		Silty SAND (SM), medium stiff, slightly moist, tan, fine grained.	60.0 2601.6	4					
							Poorly-Graded SAND (SP), medium dense to very dense, slightly moist, gray to tan, fine to medium grained, angular to subangular.							
65 2596.6							Poorly-Graded SAND with silt (SP-SM), very dense, moist, gray, fine grained, Varying amounts of silt. Thin viens of silty clay.	65.5 2596.1						
70 2591.6			100		10 - 30 - 20		SILT with sand (ML), hard, slightly moist, white to gray, non plastic, Broken pieces of consolidated clay.	71.5 2590.1	29	27	21	74	112	
							Silty SAND (SM), very stiff, slightly moist, tan, fine grained.	73.5 2588.1						
75 2586.6							CLAY with sand (CL), hard, slightly moist, white to gray, non plastic, Broken pieces of consolidated clay.							
80 2581.6			100		10 - 18 - 27				21	35	21	80	104	Friction Angle= 31.18 degrees Cohesion= 0.26 ksf
85 2576.6								86.0 2575.6						
							Silty SAND (SM), very dense, slightly moist, tan to red, fine grained, angular to subangular.							
90 2571.6			100		49 - 50/0.3ft					NV	NP	29		Friction Angle= 13.53 degrees Cohesion= 0.654 ksf
95 2566.6														
100 2561.6			115		21 - 46 - 50/0.3ft				11					

Water Level Observations		
After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	Remarks:

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Figure No. 5

LOG OF BORING

Boring B2021-5

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.499133 E: -116.713491	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2661.6 ft
Date Started: 12/14/21 / **Date Finished:** 12/19/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
105 / 2556.6							Silty CLAY (CL-ML), very stiff, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	102.0 / 2559.6						
110 / 2551.6			100		30 - 50/0.1ft		Silty SAND (SM), very dense, slightly moist, tan to red, fine grained, angular to subangular.	110.0 / 2551.6						
							Silty CLAY (CL-ML), very stiff, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	111.0 / 2550.6						
115 / 2546.6							Silty SAND (SM), medium dense to very dense, slightly moist, gray to brown, fine grained, angular to subangular.	115.5 / 2546.1						
120 / 2541.6			100		9 - 17 - 36		Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	116.5 / 2545.1						
125 / 2536.6							Sandy SILT (ML), hard, slightly moist, red to brown, fine grained, low plasticity, Very fine sand. Some consolidated clay mixed.	126.0 / 2535.6						
130 / 2531.6			107		26 - 50 - 50/0.4ft		Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	127.0 / 2534.6						
							Silty SAND (SM), very dense, slightly moist, tan, very fine grained, Very fine sand. Some consolidated clay mixed. Less clay with depth.	129.5 / 2532.1						
135 / 2526.6							Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	131.5 / 2530.1						
140 / 2521.6			111		42 - 50/0.4ft		Sandy SILT (ML), hard, slightly moist, tan, low plasticity, Some consolidated silt. Seams of varying clay content.	134.5 / 2527.1						
145 / 2516.6							Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	140.0 / 2521.6						
							Sandy SILT (ML), hard, slightly moist, tan, low plasticity, Some consolidated silt. Seams of varying clay content.	141.0 / 2520.6						
150 / 2511.6			107		8 - 17 - 50/0.4ft		Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken	143.0 / 2518.6						
								145.0 / 2516.6						
								147.0 / 2514.6						

Water Level Observations		Remarks:
After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	

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Figure No. 5

LOG OF BORING

Boring B2021-5

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.499133 E: -116.713491	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2661.6 ft
Date Started: 12/14/21 / **Date Finished:** 12/19/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							pieces of consolidated clay.							
155 / 2506.6							Sandy SILT (ML), hard, slightly moist, tan, low plasticity, Some consolidated silt. Seams of varying clay content.	156.0 / 2505.6						
							Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	157.0 / 2504.6						
160 / 2501.6			83		46 - 50/0.1ft		Sandy SILT (ML), hard, slightly moist, tan, low plasticity, Some consolidated silt. Seams of varying clay content.	160.0 / 2501.6						
165 / 2496.6							Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay. Higher silt content than previous.	163.5 / 2498.1 164.5 / 2497.1 167.0 / 2494.6						
170 / 2491.6			100		9 - 17 - 50		CLAY (CL), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.	170.0 / 2491.6						
							Sandy SILT (ML), hard, slightly moist, tan, low plasticity, Some consolidated silt..							
175 / 2486.6							CLAY (CL), hard, slightly moist, gray to blue, high plasticity, Broken pieces of consolidated clay.							
							Silty SAND (SM), slightly moist, tan, fine grained, angular to subangular.							
180 / 2481.6							Silty CLAY (CL-ML), hard, slightly moist, gray to blue, high plasticity, Varying levels of silt content.	180.0 / 2481.6						
185 / 2476.6							Silty SAND (SM), slightly moist, tan, fine grained, angular to subangular.							
190 / 2471.6														
195 / 2466.6														
200 / 2461.6							CLAY (CL), hard, slightly moist to moist, gray to blue, high plasticity, consolidated clay.	200.0 / 2461.6						

Water Level Observations		
After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	Remarks:

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Figure No. 5

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Boring B2021-5

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID		**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.499133 E: -116.713491
Project Number: 114-571040-2022		**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 2661.6 ft
Date Started: 12/14/21	**Date Finished:** 12/19/21	**Drilling Fluid:** None	**Abandonment Method:** Grout
Driller: Holt Services **Logger:** Matt Adams		**Location:** Refer to site map.	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
205 / 2456.6														
210 / 2451.6														
215 / 2446.6														
220 / 2441.6														
225 / 2436.6							Boring Depth: 225.0 ft, *Elevation: 2436.6 ft*	225.0 / 2436.6						

Water Level Observations	During Drilling: Not Recorded	Remarks:
After Drilling: Not Encountered	After Drilling: Not Recorded	

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Figure No. 6

LOG OF BORING

Boring B2021-6

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.495196 E: -116.715718	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2636.7 ft
Date Started: 11/22/21 / **Date Finished:** 12/2/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							TOPSOIL, very moist, brown.	0.6 / 2636.1						
							Silty SAND (SM), loose to medium dense, slightly moist, tan to red, fine grained, subangular.							
5 / 2631.7			67		4 - 5 - 5									
10 / 2626.7			73		7 - 7 - 7				6					
15 / 2621.7							Poorly-Graded SAND (SP), very dense, slightly moist, gray, fine to medium grained, subangular.	15.0 / 2621.7						
20 / 2616.7			100		11 - 31 - 42									
							Silty SAND (SM), loose to medium dense, slightly moist, gray, fine grained, subangular.	21.0 / 2615.7						
25 / 2611.7			100		12 - 22 - 42				18					
							Poorly-Graded SAND (SP), very dense, slightly moist, gray, fine to medium grained, subangular.	27.0 / 2609.7						
30 / 2606.7														
							Silty SAND (SM), loose to medium dense, slightly moist to moist, gray, fine grained, Pieces of siltstone increasing with depth.	33.0 / 2603.7						
35 / 2601.7														
40 / 2596.7			100		8 - 18 - 37				22					
45 / 2591.7			100		39 - 42 - 50									
							Sandy SILT (ML), hard, slightly moist, gray, fine grained.	48.0 / 2588.7						
50 / 2586.7														

Water Level Observations	During Drilling: Not Recorded	Remarks:
After Drilling: Not Encountered	After Drilling: Not Recorded	

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Figure No. 6

LOG OF BORING

Boring B2021-6

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.495196 E: -116.715718	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2636.7 ft
Date Started: 11/22/21 / **Date Finished:** 12/2/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		14 - 28 - 43									
55 / 2581.7														
60 / 2576.7			100		6 - 13 - 27				25					
65 / 2571.7														
70 / 2566.7			100		7 - 20 - 27									
75 / 2561.7								76.0 / 2560.7						
							CLAY (CH), hard, slightly moist, very dark gray, high plasticity, Almost claystone very consolidated.							
80 / 2556.7			91		8 - 18 - 50/0.1ft					67	19	83		
85 / 2551.7														
90 / 2546.7			100		9 - 14 - 40									
95 / 2541.7														
100 / 2536.7			100		11 - 23 - 26			100.0 / 2536.7		56	22	83		
							Sandy SILT (ML), hard, slightly moist, gray, medium plasticity.							

Water Level Observations		Remarks:
After Drilling: Not Encountered	During Drilling: Not Recorded After Drilling: Not Recorded	

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Boring B2021-6

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.495196 E: -116.715718	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2636.7 ft
Date Started: 11/22/21 **Date Finished:** 12/2/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
								102.8 / 2533.9						
105 / 2531.7							Silty CLAY (CL-ML), hard, slightly moist, very dark gray, high plasticity, Almost claystone very consolidated.	106.0 / 2530.7		47	22	78	100	
							CLAY with sand (CL), hard, slightly moist, gray, medium plasticity.	106.9 / 2529.8						
110 / 2526.7			100		9 - 19 - 28		Silty CLAY (CL-ML), hard, slightly moist, very dark gray, high plasticity, Almost claystone very consolidated.	110.8 / 2525.9	21					
							Sandy SILT (ML), hard, slightly moist, gray, medium plasticity.	112.0 / 2524.7						
115 / 2521.7							Silty CLAY (CL-ML), hard, slightly moist, very dark gray to blue, high plasticity, Almost claystone very consolidated.							
120 / 2516.7			100		10 - 18 - 33				22					
125 / 2511.7														
130 / 2506.7			115		28 - 47 - 50/0.3ft									
135 / 2501.7														
140 / 2496.7			100		6 - 16 - 31									
145 / 2491.7														
150 / 2486.7			107		11 - 19 - 50/0.4ft									

Water Level Observations		
During Drilling: Not Recorded		Remarks:
After Drilling: Not Encountered	**After Drilling:** Not Recorded	

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Figure No. 6

LOG OF BORING

Boring B2021-6

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID		**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.495196 E: -116.715718
Project Number: 114-571040-2022		**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 2636.7 ft
Date Started: 11/22/21	**Date Finished:** 12/2/21	**Drilling Fluid:** None	**Abandonment Method:** Grout
Driller: Holt Services **Logger:** Matt Adams		**Location:** Refer to site map.	

Depth (ft) *Elev. (ft)*	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) *Elev. (ft)*	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
155 *2481.7*														
160 *2476.7*			115		29 - 50 - 50/0.3ft									
165 *2471.7*								165.0 *2471.7*						

Boring Depth: 165.0 ft, *Elevation: 2471.7 ft*

Water Level Observations	During Drilling: Not Recorded	Remarks:
After Drilling: Not Encountered	After Drilling: Not Recorded	

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Figure No. 7

LOG OF BORING

Boring B2021-7

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.49528 E: -116.712592	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2659.5 ft
Date Started: 12/2/21 **Date Finished:** 12/7/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Slightly moist, dark brown.	0.6 / 2658.9						
							Silty SAND (SM), loose to dense, very moist, tan, fine grained, angular to subangular.							
5 / 2654.5			60		2 - 2 - 3				4					
10 / 2649.5			67		10 - 8 - 5									
15 / 2644.5			80		8 - 18 - 18									
							Poorly-Graded SAND (SP), dense, moist, tan, fine to medium grained, angular to subangular.	16.4 / 2643.1						
20 / 2639.5														
25 / 2634.5			100		13 - 40 - 50			25.0 / 2634.5						
							Silty SAND (SM), loose to dense, very moist, tan, fine grained, angular to subangular.							
30 / 2629.5			0		26 - 50/0.1ft			30.3 / 2629.2						
							Poorly-Graded SAND (SP), dense, moist, gray, fine to medium grained, angular to subangular.	31.3 / 2628.2						
							Silty SAND (SM), loose to dense, very moist, tan, fine grained, angular to subangular.	32.3 / 2627.2						
35 / 2624.5			0		35 - 50/0.3ft			33.8 / 2625.7						
							Poorly-Graded SAND (SP), dense, moist, gray, fine to medium grained, angular to subangular.							
40 / 2619.5			107		16 - 28 - 50/0.4ft			39.6 / 2619.9	23	NV	NP	21	112	
							Silty SAND (SM), loose to dense, very moist, tan, fine grained, angular to subangular.	41.4 / 2618.1						
							Poorly-Graded SAND (SP), dense, moist, gray, fine to medium grained, angular to subangular.	43.6 / 2615.9						
45 / 2614.5			100		19 - 37 - 48			46.1 / 2613.4						
							Silty CLAY (CL-ML), very stiff, moist, tan, high plasticity, Broken pieces of consolidated clay.							
50 / 2609.5							Silty SAND (SM), very dense, slightly	50.0						

Water Level Observations		Remarks:
After Drilling: Not Recorded	During Drilling: Not Encountered After Drilling: Not Recorded	

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Figure No. 7

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Boring B2021-7

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.49528 E: -116.712592	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2659.5 ft
Date Started: 12/2/21 **Date Finished:** 12/7/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		29 - 49 - 37		moist, tan, fine grained, angular to subangular, Broken pieces of siltstone and sandstone.	2609.5						
55 / 2604.5							Silty CLAY (CL-ML), hard, moist, tan, high plasticity, Broken pieces of consolidated clay.	54.0 / 2605.5						
							Silty SAND (SM), very dense, slightly moist, tan, fine grained, angular to subangular, Broken pieces of siltstone and sandstone.	55.6 / 2603.9						
60 / 2599.5			107		21 - 41 - 50/0.4ft		Silty CLAY (CL-ML), hard, moist, tan, high plasticity, Broken pieces of consolidated clay..	58.5 / 2601.0	12	NV	NP	82	104	
65 / 2594.5							Silty SAND (SM), very dense, slightly moist, tan, fine grained, angular to subangular, Broken pieces of siltstone and sandstone.	66.0 / 2593.5						
70 / 2589.5			100		9 - 23 - 35		SAND with sand (ML), hard, moist, tan, high plasticity, Broken pieces of consolidated clay..							
75 / 2584.5							CLAY (CL), hard, moist, tan, high plasticity.							
80 / 2579.5			0		78 - 70/0.2ft		Silty SAND (SM), very dense, slightly moist, tan, fine grained, angular to subangular, Broken pieces of siltstone and sandstone.	80.0 / 2579.5						
85 / 2574.5							Silty CLAY (CL-ML), hard, moist, tan, high plasticity, Broken pieces of consolidated clay..	85.0 / 2574.5						
90 / 2569.5			0		70/0.3ft									
95 / 2564.5														
							CLAY (CL-ML), hard, moist, tan, high plasticity.	97.7 / 2561.8						
100 / 2559.5			100		28 - 28 - 28				20					

Water Level Observations	During Drilling: Not Encountered	Remarks:
After Drilling: Not Recorded	After Drilling: Not Recorded	

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2525 Palmer St
59808
Phone: 406-543-3045
Fax:

Figure No. 7

LOG OF BORING

Boring B2021-7

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.49528 E: -116.712592	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2659.5 ft
Date Started: 12/2/21 / **Date Finished:** 12/7/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
105 / 2554.5														
110 / 2549.5			100		6 - 12 - 22.									
115 / 2544.5														
120 / 2539.5			77		22 - 41 - 50/0.3ft									
							SILT (ML), hard, dry, tan, low plasticity, Broken pieces.	121.5 / 2538.0						
							Silty CLAY (CL-ML), hard, moist, gray, high plasticity, Broken pieces of consolidated clay..	122.2 / 2537.3						
125 / 2534.5														
							Sandy SILT (ML), hard, dry, tan, low plasticity, Broken pieces.	128.5 / 2531.0						
130 / 2529.5			100		12 - 33 - 48		Silty CLAY (CL-ML), hard, moist, gray, high plasticity, Broken pieces of consolidated clay..	129.1 / 2530.4	19					
135 / 2524.5														
140 / 2519.5			100		9 - 18 - 50				24					
145 / 2514.5							CLAY (CL), hard, moist, gray to blue, high plasticity.	145.0 / 2514.5						
150 / 2509.5			100		9 - 18 - 31									

Water Level Observations		
After Drilling: Not Recorded	During Drilling: Not Encountered	Remarks:
	After Drilling: Not Recorded	

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2525 Palmer St
59808
Phone: 406-543-3045
Fax:

Figure No. 7

LOG OF BORING

Boring B2021-7

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID		**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.49528 E: -116.712592
Project Number: 114-571040-2022		**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 2659.5 ft
Date Started: 12/2/21	**Date Finished:** 12/7/21	**Drilling Fluid:** None	**Abandonment Method:** Grout
Driller: Holt Services **Logger:** Matt Adams		**Location:** Refer to site map.	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
155 / 2504.5														
160 / 2499.5			107		21 - 48 - 50/0.4ft									
165 / 2494.5														
170 / 2489.5			100		14 - 18 - 28									
175 / 2484.5														
180 / 2479.5														
185 / 2474.5														
190 / 2469.5														
195 / 2464.5														
200 / 2459.5							Boring Depth: 200.0 ft, *Elevation: 2459.5 ft*	200.0 / 2459.5						

Water Level Observations	During Drilling: Not Encountered	Remarks:
After Drilling: Not Recorded	After Drilling: Not Recorded	

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2525 Palmer St
59808
Phone: 406-543-3045
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Figure No. 8

LOG OF BORING

Boring B2021-8

TETRA TECH

Project: Pickles Butte Sanitary Landfill - Canyon County, ID	**Rig:** TS150 Crawler **Hammer:** Auto	**Boring Location Coordinates** N: 43.48988 E: -116.703147	
Project Number: 114-571040-2022	**Boring Diameter:** 6 in	**System:** Decimal Degrees **Datum:** NAD83	**Top of Boring Elevation:** 2956.6 ft
Date Started: 11/15/21 / **Date Finished:** 11/15/21	**Drilling Fluid:** None	**Abandonment Method:** Grout	
Driller: Holt Services **Logger:** Matt Adams	**Location:** Refer to site map.		

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			100		5 - 5 - 12		TOPSOIL, moist, brown.	0.6 / 2956.0	11					
							SILT with sand (ML), very stiff, slightly moist to moist, tan.			NV	NP	84	97	
			100		10 - 16 - 13									
5 / 2951.6			100		8 - 8 - 10				11					
			100						12					
10 / 2946.6			100		7 - 9 - 11		Silty SAND (SM), medium dense, slightly moist, tan to gray, fine grained, subangular, scattered gravel.	10.1 / 2946.5	6					
15 / 2941.6			87		6 - 7 - 9				5					
20 / 2936.6			87		9 - 13 - 15		Poorly-Graded SAND (SP), medium dense, slightly moist, tan to yellow, fine to medium grained, subangular to angular.	20.0 / 2936.6 21.5 / 2935.1	5					

Boring Depth: 21.5 ft, *Elevation: 2935.1 ft*

Water Level Observations	During Drilling: Not Encountered	Remarks:
After Drilling: Not Recorded	After Drilling: Not Recorded	

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$* N' = N \cdot \sqrt{1/\sigma}$

where $\sigma = .05\ T/ft^2$ per ft depth

HOLE NUMBER GT-1 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

(ϕ & stiffness based on table 13.A & 13.B)

PAGE 1 OF 1

PROJECT Dirkles Butte Geotech OWNER Cameron County LOCATION: CO Cameron SEC ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W @ 50' from To of fill

LOGGED BY STD/WD DATE START 11/4/01 DATE FINISHED 11/6/01 HOLE DEPTH 201½ ANGLE -90 DRILL METHOD Hollow Stem Auger SPT DIAMETER 8" Bauer DRILL MODEL TH 41

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
																				BLOW COUNTS
		11:50	Tan Tan	fine sand																
	Inner																			
4-5½	SAMPLE			fine sand w/ coarse gravel ribbon 1"													4-5½		moist	2 2 and 2 4-5½ 1" cloat numbers (slumped) 2 1st 6" 3 2nd 6" 3 3rd 6" N = 12 (30°) *
	Inner																			N=5 N' = 7 (30°)
10-11½	SAMPLE fine sand + drive shelby tube ~ 200 lbs		Tan to light brown	fine sand fine sand w/ mica													10-11½		moist	10-11½ 2, 3, 2
-10'-12'																			very	very weakly calcicemented breaks up easily
15-16½	Inner		light brown	fine sand													15-16½		moist	N = 3, 3, 2 N' = 10 (29°)
																				N. W. ANISI.
20-21½		12:10	light brown	fine sand													20-21½		moist	N = 4, 2, 3 N' = 5
																				N. W. ANS. (28°)
25-26½		12:21	light brown	fine sand															moist	N = 2 3 2 N' = 5 (28°)
																				N. W. ANS
30-31½		12:25	light brown	fine sand																N = 3, 3, 5 N' = 8 (32)
																				ALTO
35-36½		12:35	light brown	fine to med sand some coarse grain + gravel																N = 6 7 13 N' = 15 (38°)
40-42	SHELBY TUBE NO SAMPLE		(not recovered)																	push 10" in to 700 lbs (last between end of hole) (last sample from hole)
45-46½	Inner Inner 1 in 1 sample NO SAMPLE		tan	sample bell cut shell sample w/ some fine sand bottom 1" fine sand	45-46½												drier weakly cemented			push 2½" @ 1000 lbs new shoe + rate flow in sample 12, 23, 32 = N N' = 37 (40°)

(1)

HOLE NUMBER GT-1 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

PROJECT Dirkles Fuhs Gerlach OWNER _____ LOCATION: CO _____ SEC. _____ 1/4 _____ OF 1/4 _____ T _____ N R _____ W

LOGGED BY STROUD DATE START 11/4/96 DATE FINISHED 11/6/96 HOLE DEPTH 201½ ANGLE -90° DRILL METHOD HOLLOW STEM AUGER SPT w/ HAMMER DIAMETER 8" AUGER DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS: BLOW COUNTS N
50-51½	11/4	1:20	gry-tan	fine sand													med. loose		dry, very slightly moist	18, 32, 41 N = 46 (42°)
55-56½		1:40		gry-tan fine to medium sand																13, 25, 36 N = 36 minor clay (40°)
60-61½	Start A hard layer 1/2 mo	1:55	tan-gry	fine to medium sand													med loose		dry	18 30 37 N = 37 (40°)
65-66½		2:20	tan/some orange FeOx	fine sand													mod loose		dry	25 42 41 N = 46 (42°)
70-71½		2:40	tan/some orange FeOx	fine sand													mod loose breaks on digging		minor moisture	25 40 44 N = 45 (42°)
75-76½		2:55	tan	fine sand													mod. loose		slightly moist	25 37 41 N = 40 (42°)
80-81½		3:05	tan	fine sand tan very fine sand with silt/lamin													ditto		ditto	26 36 50 N = 43 (42°)
85-86½		3:20	tan	fine sand with silt lamin silt															dry	28 47 26 47 ? 46 N = 42 (42°)
90-91½		2:45	tan	fine silt sand															slightly moist	13 40 50 N = 42 (42°)
95-96½	11:00	11/5	lt tan	silt to 96' clay @ 96'															very slightly dry	19 28 47 N = 34 (hard)

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HOLE NUMBER GT-1 JOB NUMBER 030496 HOLLADAY ENGINEERING COMPANY PAGE 3 OF 4

PROJECT Dickes Butte Geotech OWNER Company LOCATION: CO. ____ SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STROWD DATE START 11-4-96 DATE FINISHED ____ HOLE DEPTH ____ ANGLE 90° DRILL METHOD Hollow Stem / SPT DIAMETER 8" Augers DRILL MODEL BK-31

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
100-101½	11-5	11:40	Light tan	clay															slightly damp	stiff N = 11 18 27 N' = 20
*	Brass		green			1 Brass No Full														perhaps trace clay
	Rings																			& 3 brass rings saving
	1½" ID																			
	SPT																			
105-106½		12:00	light tan	1ft clay																very stiff
	NO RINGS			½" fine sand																12 32 34 N = 29
				3' clay																penetrometer indicates
																				3.0 T/ft² confined in brass
																				ring 4.0 T/ft²
																				hard
110-111½	BRASS	12:25	tan	clay 8"		1 Brass No Full													weakly moist	13 32 50@6" N = 35
*	RINGS			fine sandy silt															penetrometer	#1 brass ring sample clay
				10"															brass ring	1.5 tsf fine sand (4 T/ft²)
																				4.0 T/ft² for clayey silt
																			very weakly moist (slight dry)	(40)
	115-116½	12:45	light brown	underlied very fine																11 41 50 N = 38
	NO brass	rings		silty sand 1ft																confined ring penetrometer in
			clay																	clay > 4.5 Tons/ft²
			sand lite																	
	120-121½	1:10	tan	silty clay															weakly moist	12 30 48
	NO RINGS																			2-4 Tons/ft² N = 32
																				Very stiff
				clay contact																
125-126½	first	2:00		very fine silty															add water	add five gallons water
	H_2O			sand to 126															very	20 42 50@5"
	add o.i																		slightly	
	NO RINGS																		damp	N' = 37
																				hard
130-131½	130-131½	2:25		clay		1 Brass 2 missed 2 no full											Moderate Consl.		slightly to moderately damp	30(?) 32 50@5"
*	RINGS			clayey silt w/																* 4 brass rings
				very fine sand																N = 32
				silty clay																Very stiff
																	wk-mod. CONSL.			
135-136½		3:00	grayish green	clay w/ trace silt															add water	add five gallons water
	NO Rings																			11 21 37 N = 22
																				penetrometer 1.75-2.75
																				Very stiff
140-141½	* RINGS	3:45	greenish gray	clay & silty clay intrbd		1 Brass 2 missed 2 no full											moderately consl.		add water moderately moist (38%?)	19 27 38 N = 25
																				* 4 rings (test both clay & silty clay)
																				Very Stiff
145-146½	No Rings	4:30	gray-grey	top 6" clay													wk-mod		MODERATE MOISTURE ~35%	23 23 28
	EOS	5:00		lower 12" silty clay																N' = 19
																				Very stiff

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HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-1 JOB NUMBER 030496

PROJECT Pinkley Butte Geotech OWNER Canyon County LOCATION: CO. Canyon SEC ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STROUD DATE START 11-4-96 DATE FINISHED 11-6-96 HOLE DEPTH 201½ ANGLE -90 DRILL METHOD Hollow Stem Auger SPT/split spoon DIAMETER ____ DRILL MODEL BK-71

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
150-151½	START	9:15	grn-gry	clay w/ interbdd		1 Brass											wk-mod		clay mod damp	SILT ~ 1.5 T/ft² in ring
	Sample	9:45		silt/fine sand		No Full											consol clay		silt almost dry	CLAY ~ 4-4.5 T/ft² in Ring
#	Rings																wk consl			* ONE BRASS RING CLY & SLT
																	fr silt/sand			
																			ADD ~ 7 gal	
																			H.O. Valve	
155-156½	NO	10:30	grn-gry	clay													wk consl		ROCK SLT	
	RINGS			silty													PLASTIC		AUGER Run	15 22 25 pure clay
																			MOD. DAMP	GOOD SAMPLE
																				N' = 17
																				Stiff
160-161½ *	RINGS	11:10	grn-gry	pure clay		3 Brass											wk consolid		ADD 5 gals	18 22 24
						1 almost											PLASTIC		MOD DAMP	* 3 perfect samples in Rings
						2 ~½ Full													~ 28-42%	of clay
																				N' = 16
																				Stiff
165-166½	NO	11:45	grn-gry	pure clay w/													MOD-MOD STF		ADD 5 gal H.O.	18 44 50 @ ½"
	RINGS			3" bd of very													CONSOL		MOD DAMP	
				fine sand													(EXCPT SAND)		~ 40%	N' = 33
																				Very Stiff
170-171½	NO	12:30	grn-gry	Pure clay w/													MOD CONSL		~ 40%	17 31 33
	RINGS			1" silt bed															All water	N' = 22
																			Sat	Very Stiff
175-176½	NO	1:45	grn-gry	clayey silt													wk consol		25% water	13 22 32
	RINGS																		ADD 5 gal	2 T/ft² Penetrometer
																				N' = 18
																				Stiff
180-181½	BRASS	2:25	grn-gry	SILTY CLAY		2 Brass											wk-mod		~35%	14 22 28 N' = 17
*	RINGS					No Full											consol		MOD Fine	* 2 BRASS RINGS · Stiff
																				1.5 - 2.0 T/ft² Penetr.
185-186½	NO	3:05	grn-gray	SILTY CLAY													wk mod		~ 35%	12 27 44 N' = 23
	RINGS																consolid		ADD Fine	1.5 T/ft² Very Stiff
																			Sand	
190-191½	RINGS	3:40	grn-gray	SILTY CLAY		1 Brass											wk-mod		~ 35-38%	15 22 30 * 1 Brass Ring
*						No Full														3.0 T/ft²
																				[illegible]
																				N' = 19
																				Stiff
195-196½		4:20		clayey silt													wk		~ 30-35%	14 17 23
																				2.5 T/ft²
11/7/96	ABANDON	HOLE IN	T-1																	N' = 13 Stiff
	BENTONITE	CHIPS	Pour																	
200-201½	TO TOP	5:00		silty clay		2 Brass														12 17 20 / 4.5 T/ft²
																				N' = 37 Stiff

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HOLE NUMBER GT-2 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

PAGE 1 OF 1

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO. (see map) SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STANUND DATE START 11-7-96 DATE FINISHED 11-7-96 HOLE DEPTH 25 1/2' ANGLE -90 DRILL METHOD Hollow Stem Auger DIAMETER 8" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	START	11-7-96		Sand cover																
	12:25			↓															Slightly damp	check for methane - none smelled
				garbage																
5-6 1/2		12:35																		15 8 7
2	BRASS RING			soil + trash																Dirt + trash
10-11 1/2	NO RINGS	12:55		Soil + trash 2/3 1/3															BARELY DAMP	7 7 12 SAMP A-SOIL NO METHANE / SAMP B-TRASH
15-16 1/2	RINGS	1:05		all garbage diaper, wood newspaper etc.															OUTSIDE SPLITS ADDN WET	17 14 10 5% LEL in Auger Stem quickly drops to 1% LEL Two RINGS Jumped together
20-21 1/2	NO RINGS	1:20		80% Trash 20% soil															MODERATELY DAMP	8 8 14
24-25 1/2	BRASS RINGS	1:35 EOH		MOSTLY GRASS															DAMP	19 13 12 100% LEL METHANE SHUT RIG DOWN FLOOD HOLLOW STEM W/ WATER BACK OUT OF HOLE

HOLE NUMBER GT-3 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

across road 437 67

PAGE 1 OF 2

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO Canyon SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STEWARD DATE START 11/8/96 DATE FINISHED 11/8/96 HOLE DEPTH 101½ ANGLE -90 DRILL METHOD SPT/AUGER DIAMETER 8"/2" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	11-8-96	8:30																		
5-6½	NO RINGS	8:40	tan	silty very fine sand													loose		slightly damp	2 3 2
10-12	SHELBY TUBE	8:50	tan	fine sand													med loose		dry	200 lbs last 6"
15-16½	NO RINGS	9:00	tan	fine sand													loose		medium damp	5 12 19 minor silt
20-21½	BRASS RINGS	9:10	lite brn	fine sand		3 BRASS NO-FILL											Mod. loose		DAMP	13 21 23
25-26½	NO RINGS	9:20	lite brn	fine-med. sand													loose		VERY DAMP	13 19 29
30-31½	BRASS & PVC	9:30	lite brn	fine-med sand		3 BRASS NO-FILL											mod loose		very damp	14 21 33 #3 rings
35-36½	NO RINGS	10:00	lt to gray-brn	fine to med. sand													loose except for Fe Ox "veins"		almost saturated	23 37 33
40-41½	BRASS RINGS	10:10	lite gray brn + orange	fine sand some med. limestone cemented clay		3 BRASS NO-FILL											sand loose Fe Ox stain until saturat.		very damp	16 23 37
45-46½	NO RINGS	10:20	lt gray-brn	fine sand minor Fe Ox stain													wk consist.		very damp	22 30 35

HOLE NUMBER GT-3 JOB NUMBER 130-476 HOLLADAY ENGINEERING COMPANY PAGE 2 OF 2

PROJECT PB Geotech OWNER Canyon Co. LOCATION: CO. Canyon SEC ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY Stroud DATE START 11/8/96 DATE FINISHED 11/8/96 HOLE DEPTH 101½ ANGLE -90 DRILL METHOD Hollow Stem Auger DIAMETER 8" / 2" DRILL MODEL PE-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
50-51½	11-8-96	10:25	gry-tan	very fine		3 BRASS											WK-MOD		moderately	18 31 37
	* RINGS			silty sand		- FULL											CONSOL		damp	* 3 RINGS
						2 - NO FULL														
55-56½	NO	10:40	gry-tan	very fine													WK-MOD		MOD-STIF	16 29 40
	RINGS			silty sand													CONSOL		damp	
60-61½	RINGS	10:50	gry-tan	very fine		3-BRASS											WK-MOD		MOD	20 35 46
				sand w/ bordeline		NO-FULL											CONSL		damp	
				silt																
65-66½	NO	11:00	gry-tan	top 3" silty fine													SAND WK			
	RINGS			sand bottom													MOD-STIF		MOD DAMP	10 29 36
			gray-grey	10" clay													CONSOLID			
																	fat clay			
70-71½	RINGS	11:15	gray	top 2" clay		2-BRASS											MOD CLY		WK TO MOD	18 30 37
			tan gry	bottom 10"		NO FULL											MOD SAND		DAMP BASE	2 RINGS - BOTH OF SAND
				fine sand																
75-76½	NO																			16 21 27
	RINGS	11:30	gray-gry	silty clay													WK-CONSOL		WK DAMP	[illegible]
				silty clay																[illegible]
				(organics)																
80-81½	RINGS	11:45	gry-tan	interbedded fine		2-BRASS											MOD-STIF		slightly	15 44 50 @ 5"
				sand-silt		NO-FULL													damp	2 RING CLAY / silty sand
				silty clay																
85-86½	NO	12:00	tan-gry	very fine silty																21 48 50
	RINGS			sand													MOD-STIF		slightly	[illegible] clay seam 3" bed
																			damp	w/ 50 [illegible]
	hard																			
	bottom																			
90-91½	RINGS	12:45	tan-gry	fine silty sand		2-BRASS											MOD-STIF		slightly	16 20 50
				w/ 2-clay bed		NO-FULL													damp	
95-96½	NO RINGS	1:00	tan-gry	10" silt [illegible]													MOD CONSL		slightly	22 36 40
				½ silty clay															damp	
	2																			
100-101½	RINGS	1:20	tan gray	fine sand		2-RINGS											MOD CONSOL		VERY SLIGHT	16 32 50 BOTTOM HOLE
						NO-FULL														

HOLE NUMBER GT-4 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

PAGE 1 OF 2

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO. Canyon (wagon motorcycle parking lot) SEC ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY Stewart DATE START 11-11-96 DATE FINISHED 11-11-96 HOLE DEPTH 101½ ANGLE -90 DRILL METHOD Hollow Stem Auger DIAMETER 2"/2" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
		11-11-96																		
5-6½	Rings	10:00	tan	fine to med sand w minor clay & silt													very loose but [illegible] [illegible]		moderately damp	2 1 1 2 rings
10-11½	NO Rings	10:07	tan	clayey silt not minor very fine sand													loose		wet. damp	3 2 1
15-16½	Shelby tube	10:15	?	? ?																
15-17'																				
20-21½	No RINGS	10:25	tan	clayey fine sand													loose		saturated damp	5 6 8 driven w/ first rings for L used as could fill equip w/ [illegible]
25-26½	NO @ 10Y-5	10:30	tan	silty fine sand													med loose		wet saturated	6 13 22
30-31½	RINGS	10:40	dy-tan	silty fine sand		2-CRASS NO-FILL											med dense		almost dry	15 29 37 2 rings
35-36½	NO RINGS	10:50	gry-tan	fine sand													wk-mod dense		almost dry	12 21 32
40-40.75	Shelby tube	11:05	gry-tan	fine sand															almost dry	[illegible] 8" sample left gray minor silt & clay
45-46½		11:15	gry-tan	interbedded fine sand & silty [illegible]												wk-med dense			moist	[illegible] 4-6" silt 20 37 32

HOLE NUMBER GT-4 JOB NUMBER D30476 HOLLADAY ENGINEERING COMPANY PAGE 2 OF 2

PROJECT Dickens Butte Crater OWNER Bannock County LOCATION: CO. Lemhi SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY [illegible] DATE START [illegible] DATE FINISHED [illegible] HOLE DEPTH 101½ ANGLE [illegible] DRILL METHOD Hollow stem auger DIAMETER 3½" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
		11-11-96																		
50-51½	BRASS RINGS	11:25		silt w/ 1" clay interbeds		2 - BRASS almost											MOD-STR MOISTURE		moist down	16 30 50 water for sand
55-56½	NO RINGS	11:40	gray-tan sand. silt clay tan	fine sand 1" silt - 4" clay 10"													WK-MOD MOISTURE		wk damp	11 18 31
60-61½	RINGS	11:55	gray-tan w/ orange	fine sandy silt 1" FeOx cement		2 - BRASS No - Full											MOD MOISTURE		almost dry	23 37 50 2 RINGS
65-66½	NO RINGS	12:10	gray-tan	Cuttings from bag in bottom 10' fine sand, silt, clay													MOD MOISTURE		slightly moist	19 36 45
70-71½	RINGS	12:35	tan-gray	fine sandy silt		2 - BRASS No Full											MOD MOISTURE		MODERATELY MOIST	21 42 50
75-76½	NO RINGS CLINCH TEAM	12:40	tan-gray	fine sand, silt													MOD STR MOISTURE		MODERATELY MOIST	20 37 42
80-81½	NO RINGS	1:10	[illegible]	varve clay, laminated silt & clay													MOD STR		SLIGHTLY MOIST	22 32 [illegible]
85-86½	NO RINGS	1:30	gray-tan	laminated clay w/ [illegible]													MOD STR		slightly moist	16 33 [illegible]
90-91½	BRASS RINGS	1:45	gray-tan	varve silt & clay		2 - BRASS almost											MOD STR		[illegible] dry	16 40 [illegible] 2 rings
95-96½	NO RINGS	[illegible]	gray-tan	varve silt w/ 6" fine sand interbed													WK STR		moist, very dried	16 32 50 can't use sample for moisture (drill's weather)
100-101½	RINGS	2:30	gray-tan	[illegible]		3 - [illegible]											STR MOIST		somewhat moist	23 47 50 END OF HOLE

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HOLE NUMBER GT-5 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

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PROJECT Pinkles Butte Geotech OWNER Canyon County LOCATION: CO. Canyon (Center of Landfill) SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STROUND DATE START 11/12/96 DATE FINISHED 11/14/96 HOLE DEPTH 101 1/2 ANGLE -90 DRILL METHOD Hollow Stem Auger SPT DIAMETER 8 1/2" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
0-1 1/2	11/12/96	10:05		COVER &												Ex LEL 0%			MOIST	SHELBY TUBE THRU INTERVAL
	SHELBY			TRASH															TO	COVER CLAY/SILT & TRASH
																Check tightness			DRY	1 1/2 ft @ 500 lbs
																hole in hollow stem				inside end of tube
																& @ outside collar				
5-6 1/2	NO	10:15		COVER &												clear auger no			MOIST	15 5 4
	RINGS			TRASH												Ex LEL 0%				MOST OF SAMPLE NOT
																ditto procedures				RECOVERED (SHOE BLOCKAGE)
10-11 1/2	NO	10:30		TRASH												Ex LEL 0%			slightly	27 10 8
	RINGS																		damp	POOR RECOVERY (~3-4" sample)
15-16 1/2	NO	10:40		TRASH												Ex LEL 0%			almost dry	70 @ 4 inches
	RINGS																			wood, plastic, paper
20-21 1/2	NO	10:55		TRASH												Ex LEL 0%			almost dry	12 9 19
	RINGS																			GOOD RECOVERY ~ 20"
																				NOT SAMPLE CINDER (FILL)
25-26 1/2	NO	11:10		Trash												Ex LEL 0%				50 @ 4 1/2"
	RINGS																			SHUT DOWN WAITING ON
		EOS																		DELIVERY OF BRASS RINGS
		11-13-96																		
30-31 1/2	BRASS	11:25		Trash												Ex LEL 0%				16 7 12
	RINGS																			2 brass rings
35-36 1/2	Auger			Trash												Ex LEL 100% in				NO MORE DRILLING 'MINUTES
	thru															hollow stem				ex hazard
	NO SAMPLE															@ collar				
40-41	2 1/2"	2:50		Trash												Ex LEL 100%				1 large brass ring
	BRASS																			
	RING																			
45	Grab Sample			trash												Ex LEL 100%				~ 8" sample
		3:15																		
		4:05																		
50	trash	3" ring		trash												Ex LEL 100%				3" sample ring / but in bag

HOLE NUMBER GT-5 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

PROJECT Dickey Butte Geotech OWNER Cameron LOCATION: CO. Cameron SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY Stowell DATE START 11/12/96 DATE FINISHED [illegible] HOLE DEPTH 101½ ANGLE -90° DRILL METHOD Hollow Stem DIAMETER 8½" DRILL MODEL BE-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
		11-13-96																		
55	Grab	4:30		Tan sch																called SA on bag
56	earlier		56'	[illegible]																
58																				
60	Ring & grab	4:55 EOS 11-14-96	Tan-gray	Sand (Med)																1 ring + 3" in ring sand; garbage 6 top
65 →	Grab & 2½"	9:30	gray	Sand (Med)													Cuttings dump			
65-65.5	Split limon	9:45	+ grab														sand soil not water			1100 lbs [illegible] 6"
65.5-67	abundant 7"																[illegible] in 2½ [illegible]			11 19 26 SPT
	split spoon [illegible]																MOD-WOD		MOD moist	
70-71½	SPT	10:20	Tan-gray	Silty fine sand													MANSEL			13 34 42
75-76½	SPT	10:40	Tan-brown gray-gray	Sand & silt													[illegible] MOD well MANSEL [illegible]		MOD-[illegible] moist	13 30 41 sand-clay [illegible]
80-81½	SPT	11:00	Tan-gray	Silty fine sand													[illegible]		moist	50 35 46
85-86½	SPT	11:15	Tan-gray	Fine to med sand													MOD well MANSEL		moist	20 37 50
90-91½	SPT	11:35	Tan-gray	Med to med sand													[illegible] MOD MANSEL		Quite moist (not [illegible] or wet)	16 12 22
95-96½	SPT	11:50	Tan-gray	Med sand													MOD [illegible] MANSEL		[illegible] moist	18 32 32
	[illegible]																		[illegible]	
100-101½	[illegible]	[illegible]	Tan gray	Fine & med sand													[illegible]		[illegible]	15 21 45