



CONSULTANTS
· ENVIRONMENTAL
· GEOTECHNICAL
· MATERIALS
· FORENSICS

July 18, 2012

Mr. Frank Lichnovsky
Powertech (USA), Inc.
PO Box 812
Edgemont, SD 57735

Subject: Well Completion Reports
Powertech Inc.
Sites NW of Edgemont, South Dakota
AET No. 17-01493

Dear Frank:

Please find the attached boring location maps, well construction logs, and South Dakota well completion reports for seven monitoring wells drilled on July 9 – 11, 2012. If you have any questions regarding the attached reports, please call our office at (605) 388-0029.

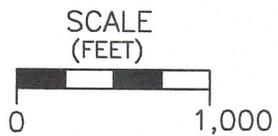
Respectfully,

A handwritten signature in cursive script that reads 'Kristen R. Yates'.

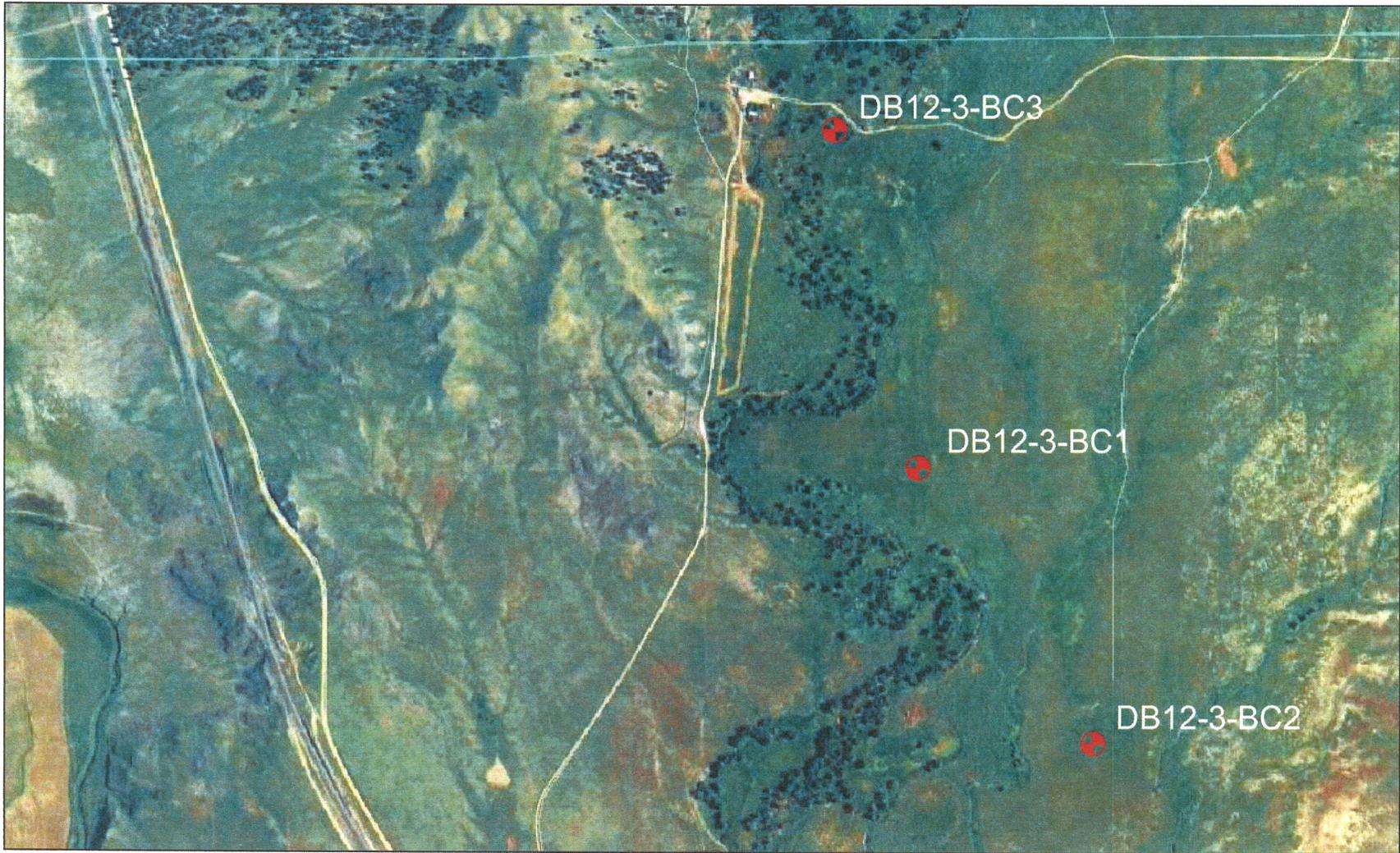
Kristen R. Yates, EI, CPRR
Geotechnical Project Manager

attachments

cc. Mr. Ken Buhler - SDDENR



PROJECT: POWERTECH – DEWEY BURDOCK SITES NEAR EDMONT, SOUTH DAKOTA	PROJECT NO. 17-01493	
	SUBJECT: BORING LOCATION MAP – DC SITES	DATE: JULY 16, 2012
	SCALE: 1 INCH = 1,000 FEET	DRAWN BY: KY



SCALE
(FEET)



PROJECT: POWERTECH – DEWEY BURDOCK SITES
NEAR EDMONT, SOUTH DAKOTA

PROJECT NO.
17-01493

SUBJECT:
BORING LOCATION MAP – BC SITES

DATE:
JULY 16, 2012

SCALE:
1 INCH = 1,000 FEET

DRAWN BY:
KY

REVIEWED BY:
RNT



BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 17-01493
 PROJECT NAME Powertech
 LOCATION Near Edgemont, South Dakota
 DRILLING METHOD 3.25" HSA
 SAMPLING METHOD Auger Cuttings
 GROUND ELEVATION 3646 (provided by PWE from topo map)
 TOP OF CASING _____
 LOGGED BY FL
 REMARKS _____

BORING/WELL NUMBER DB12-30-DC1
 DATE DRILLED 7/10/12
 CASING TYPE/DIAMETER 2" PVC Flush Thread, Sch. 40
 SCREEN TYPE 2" PVC Flush Thread, Sch. 40, 0.010 slot
 PACKING TYPE 12-20 Silica Sand
 GROUT TYPE Bentonite/Cement
 DEPTH TO WATER 20.00
 GROUND WATER ELEVATION _____

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1			SANDY CLAY light brown to tan		
					2					
					3					
					4					
					5	CL				
					6					
					7					
					8					
					9					
					10					
					11			SANDY CLAY brown		
					12					
					13					
					14	CL				
					15					
					16					
					17					
					18			SAND & GRAVEL light brown to brown		
					19					
					20					
					21	SP				
					22					
					23			SHALE black		
					24	CH				
								Bottom of Boring		

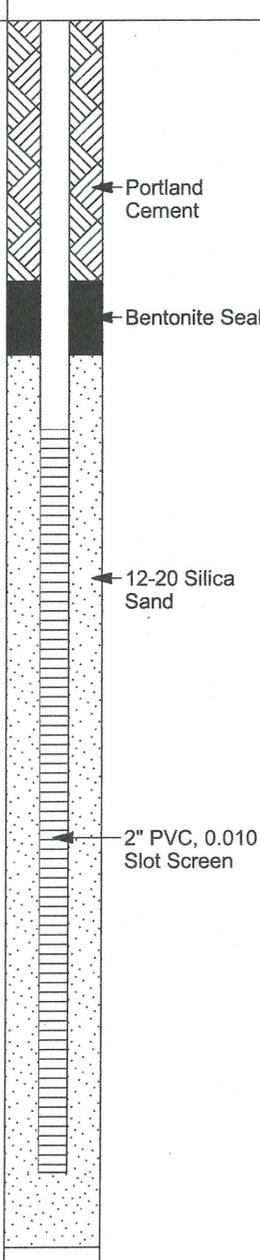


BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 17-01493 BORING/WELL NUMBER DB12-30-DC2
 PROJECT NAME Powertech DATE DRILLED 7/10/12
 LOCATION Near Edgemont, South Dakota CASING TYPE/DIAMETER 2" PVC Flush Thread, Sch. 40
 DRILLING METHOD 3.25" HSA SCREEN TYPE 2" PVC Flush Thread, Sch. 40, 0.010 slot
 SAMPLING METHOD Auger Cuttings PACKING TYPE 12-20 Silica Sand
 GROUND ELEVATION 3612 (provided by PWE from topo map) GROUT TYPE Bentonite/Cement
 TOP OF CASING _____ DEPTH TO WATER 11.00
 LOGGED BY FL GROUND WATER ELEVATION _____
 REMARKS _____

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1			SANDY CLAY light brown		
					2					
					3					
					4	CL				
					5					
					6					
					7					
					8					
					9					
					10	CL		CLAY brown		
					11					
					12					
					13			SAND & GRAVEL brown		
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21	SP	wet at 20'			
					22					
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30					
					31			SHALE black		
					32	CH				
					33					
								Bottom of Boring		

AET_ENVI 17-01493.GPJ AET WITH PID INFO 9/14/12





BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 17-01493
 PROJECT NAME Powertech
 LOCATION Near Edgemont, South Dakota
 DRILLING METHOD 3.25" HSA
 SAMPLING METHOD Auger Cuttings
 GROUND ELEVATION 3618 (provided by PWE from topo map)
 TOP OF CASING _____
 LOGGED BY FL
 REMARKS _____

BORING/WELL NUMBER DB12-31-DC3
 DATE DRILLED 7/10/12
 CASING TYPE/DIAMETER 2" PVC Flush Thread, Sch. 40
 SCREEN TYPE 2" PVC Flush Thread, Sch. 40, 0.010 slot
 PACKING TYPE 12-20 Silica Sand
 GROUT TYPE Bentonite/Cement
 DEPTH TO WATER DRY
 GROUND WATER ELEVATION _____

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1			SANDY CLAY light brown		
					2					
					3					
					4	CL				
					5			SILTY CLAY brown		Portland Cement
					6					
					7					
					8					
					9			SAND & GRAVEL brown		Bentonite Seal
					10					
					11					
					12	CL				
					13			SHALE black		12-20 Silica Sand
					14					
					15					
					16					
					17			Bottom of Boring		2" PVC, 0.010 Slot Screen
					18					
					19	SP				
					20					
					21					
					22	CH				
					23					

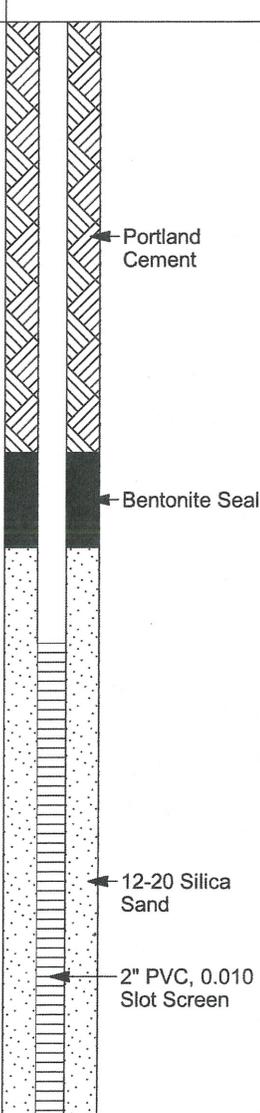


BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 17-01493 BORING/WELL NUMBER DB12-32-DC4
 PROJECT NAME Powertech DATE DRILLED 7/11/12
 LOCATION Near Edgemont, South Dakota CASING TYPE/DIAMETER 2" PVC Flush Thread, Sch. 40
 DRILLING METHOD 3.25" HSA SCREEN TYPE 2" PVC Flush Thread, Sch. 40, 0.010 slot
 SAMPLING METHOD Auger Cuttings PACKING TYPE 12-20 Silica Sand
 GROUND ELEVATION 3617 (provided by PWE from topo map) GROUT TYPE Bentonite/Cement
 TOP OF CASING _____ DEPTH TO WATER 18.00
 LOGGED BY FL GROUND WATER ELEVATION _____
 REMARKS _____

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1			SANDY CLAY light brown		
					2	CL				
					3					
					4			SILTY CLAY brown		
					5					
					6					
					7					
					8					
					9					
					10					
					11	CL				
					12					
					13					
					14					
					15					
					16					
					17					
					18			SAND & GRAVEL yellowish brown, wet		
					19					
					20	SP				
					21					
					22	CH		SHALE black		
					23			Bottom of Boring		

AET_ENV1 17-01493.GPJ AET WITH PID INFO 9/14/12





BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	17-01493	BORING/WELL NUMBER	DB12-3-BC-1
PROJECT NAME	Powertech	DATE DRILLED	7/9/12
LOCATION	Near Edgemont, South Dakota	CASING TYPE/DIAMETER	2" PVC Flush Thread, Sch. 40
DRILLING METHOD	3.25" HSA	SCREEN TYPE	2" PVC Flush Thread, Sch. 40, 0.010 slot
SAMPLING METHOD	Auger Cuttings	PACKING TYPE	12-20 Silica Sand
GROUND ELEVATION	3638 (provided by PWE from topo map)	GROUT TYPE	Bentonite/Cement
TOP OF CASING		DEPTH TO WATER	12.50
LOGGED BY	FL	GROUND WATER ELEVATION	
REMARKS			

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1			SAND orange-brown		
					2	SP				
					3					
					4					
					5			SANDY CLAY brown to reddish brown		
					6					Portland Cement
					7					
					8					
					9					
					10	CL				
					11					
					12					Bentonite Seal
					13					
					14					
					15			SAND & GRAVEL reddish brown, wet		
					16					
					17					
					18					12-20 Silica Sand
					19					
					20					
					21					
					22	SP				
					23					
					24					
					25					
					26					
					27					
					28					
					29					
					30	CH		SHALE black		
								Bottom of Boring		
										2" PVC, 0.010 Slot Screen

AET_ENV1 17-01493.GPJ AET WITH PID INFO 9/14/12

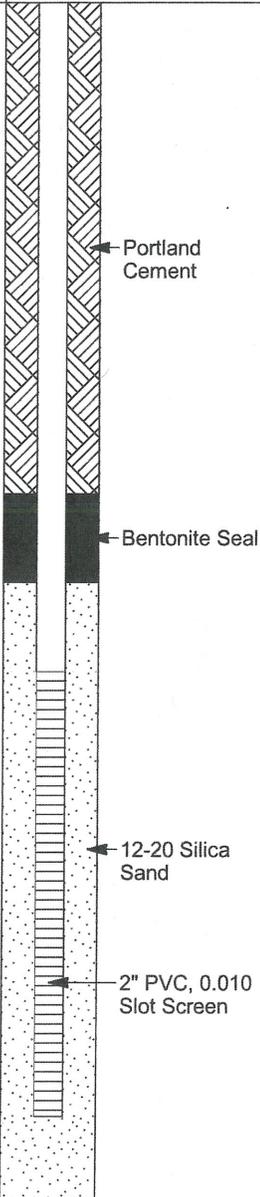


BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 17-01493	BORING/WELL NUMBER DB12-3-BC-2
PROJECT NAME Powertech	DATE DRILLED 7/9/12
LOCATION Near Edgemont, South Dakota	CASING TYPE/DIAMETER 2" PVC Flush Thread, Sch. 40
DRILLING METHOD 3.25" HSA	SCREEN TYPE 2" PVC Flush Thread, Sch. 40, 0.010 slot
SAMPLING METHOD Auger Cuttings	PACKING TYPE 12-20 Silica Sand
GROUND ELEVATION 3637 (provided by PWE from topo map)	GROUT TYPE Bentonite/Cement
TOP OF CASING	DEPTH TO WATER 3.00
LOGGED BY FL	GROUND WATER ELEVATION
REMARKS	

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1	SP		SAND tan to brown		
					2					
					3					
					4			CLAY dark brown		
					5	CL				
					6					
					7					
					8			SANDY CLAY red		
					9					
					10					
					11	CL				
					12					
					13					
					14					
					15			CLAYEY SAND red to reddish gray		
					16					
					17					
					18	SC		wet at 18'		
					19					
					20					
					21					
					22			SHALE black		
					23					
					24	CH				
					25					
					26					
					27			Bottom of Boring		

AET_ENV1 17-01493.GPJ_AET WITH PID INFO 9/14/12





BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	17-01493	BORING/WELL NUMBER	DB12-3-BC-3
PROJECT NAME	Powertech	DATE DRILLED	7/9/12
LOCATION	Near Edgemont, South Dakota	CASING TYPE/DIAMETER	2" PVC Flush Thread, Sch. 40
DRILLING METHOD	3.25" HSA	SCREEN TYPE	2" PVC Flush Thread, Sch. 40, 0.010 slot
SAMPLING METHOD	Auger Cuttings	PACKING TYPE	12-20 Silica Sand
GROUND ELEVATION	3654 (provided by PWE from topo map)	GROUT TYPE	Bentonite/Cement
TOP OF CASING		DEPTH TO WATER	9.50
LOGGED BY	FL	GROUND WATER ELEVATION	

REMARKS

PID (ppm)	Blow Count	RECOVERY (inches)	SAMPLER TYPE	INTERVAL	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	GW LEVEL	BORING ABANDONED
			AUGER 1		1			SAND orange-brown		
					2	SP				
					3					
					4	CL		SILTY CLAY reddish brown		← Portland Cement
					5			CLAYEY SAND reddish brown, wet		
					6					
					7					← Bentonite Seal
					8					
					9	SC				
					10					
					11					
					12					
					13			SAND & GRAVEL reddish brown		← 12-20 Silica Sand
					14					
					15					
					16					
					17					
					18					
					19	SP				← 2" PVC, 0.010 Slot Screen
					20					
					21					
					22					
					23					
					24					
					25			SHALE black		
					26	CH				
					27			Bottom of Boring		

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11- 02

Location NW 1/4 SW 1/4 Sec 30 Twp 6S Rg 1E

Well Owner: Powertech (USA) Inc.

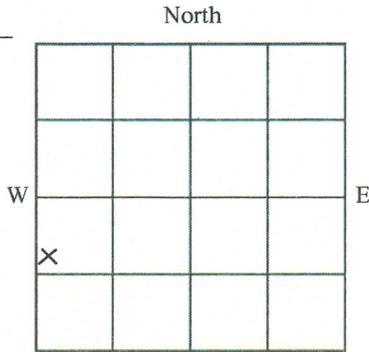
County Custer

Business Name: Powertech (USA) Inc.

Address: PO Box 812

City, State, Zip: Edgemont SD 57735

Please mark well location with an "X"



Well Completion Date

7/10/12



Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? Unknown ft. from (identify source)

PROPOSED USE:

- Domestic/Stock Irrigation
- Municipal Industrial
- Business Institutional
- Test holes Monitoring well

METHOD OF DRILLING:
3.25" ID, 6.25" OD HSA to 24 feet

CASING DATA: Steel Plastic Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>2.00</u> IN	<u>0.0</u> FT	<u>14.0</u> FT	<u>6.25</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>		Lb/gal	<u>0.0</u> Ft	<u>10.0</u> Ft
<u>Bentonite</u>		Lb/gal	<u>10.0</u> Ft	<u>12.0</u> Ft

Describe grouting procedure

SCREEN: Perforated pipe Manufactured

Diameter 2.00 Inches Length 10.0 Feet

Material Sch 40 PVC

Slot Size 0.010" Set From 14.0 Feet to 24.0 Feet

Other information 12-20 Silica Sand from 12' to 24'

WAS A PACKER OR SEAL USED? Yes No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

Yes, How?

No, Why Not? Monitoring Well Only

Lab to which water quality sample sent for analysis

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sandy Clay - light brown to tan</u>	<u>0</u>	<u>10</u>
<u>Sandy Clay -brown</u>	<u>10</u>	<u>18</u>
<u>Sand & Gravel -light brown to brown</u>	<u>18</u>	<u>23</u>
<u>Shale - black</u>	<u>23</u>	<u>24</u>

STATIC WATER LEVEL 20.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by Valve Reducers Other _____

Reduced flow rate _____ GPM

Can well be completely shut in?

WELL TEST DATA:

Pumped Describe: NA

Bailed

Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Monitoring Well DB12-30-DC1
Lat/Long (43.49946N, 104.0515W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date: _____

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11- 02

Location SE 1/4 SW 1/4 Sec 30 Twp 6S Rg 1E

Well Owner: Powertech (USA) Inc.

Business Name: Powertech (USA) Inc.

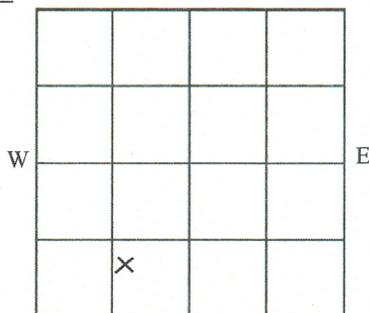
Address: PO Box 812

City, State, Zip: Edgemont SD 57747

County Custer

North

Please mark well location with an "X"



Well Completion Date

7/10/12

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
_____ ft. from Unknown (identify source)

PROPOSED USE:

- Domestic/Stock Municipal Business Test holes
 Irrigation Industrial Institutional Monitoring well

METHOD OF DRILLING:
3.25" ID, 6.25" OD HSA to 33 feet

CASING DATA: Steel Plastic Other
If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
_____ LB/FT	<u>2.00</u> IN	<u>0.0</u> FT	<u>11.0</u> FT	<u>6.25</u> IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>	_____	Lb/gal	<u>0.0</u> Ft	<u>7.0</u> Ft
<u>Bentonite</u>	_____	Lb/gal	<u>7.0</u> Ft	<u>9.0</u> Ft

Describe grouting procedure _____

SCREEN: Perforated pipe Manufactured

Diameter 2.00 Inches Length 20.0 Feet

Material Sch 40 PVC

Slot Size 0.010" Set From 11.0 Feet to 31.0 Feet

Other information 12-20 Silica Sand from 9' to 33'

WAS A PACKER OR SEAL USED? Yes No

If so, what material? _____

Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?

Yes, How? _____

No, Why Not? Monitoring Well Only

Lab to which water quality sample sent for analysis _____

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sandy Clay - light brown</u>	<u>0</u>	<u>9</u>
<u>Clay -brown</u>	<u>9</u>	<u>11</u>
<u>Sand & Gravel -brown</u>	<u>11</u>	<u>31</u>
<u>Shale - black</u>	<u>31</u>	<u>33</u>

STATIC WATER LEVEL 11.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by Valve Reducers Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

Pumped Describe: NA

Bailed

Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Monitoring Well DB12-30-DC2
Lat/Long (43.49328N, 104.0475W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: _____

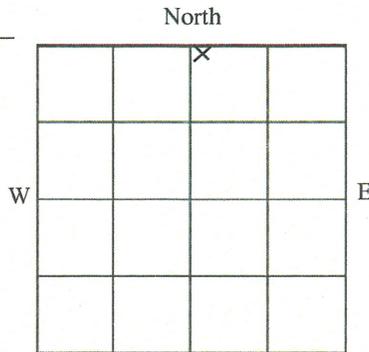
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NW ¼ NE ¼ Sec 31 Twp 6S Rg 1E

County Custer

Please mark well location with an "X"



Well Completion Date

7/10/12

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
 _____ ft. from Unknown (identify source)

PROPOSED USE:

- Domestic/Stock Irrigation
 Municipal Industrial
 Business Institutional
 Test holes
 Monitoring well

METHOD OF DRILLING:

3.25" ID, 6.25" OD HSA to 23 feet

CASING DATA:

- Steel
 Plastic
 Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
_____	<u>2.00</u>	<u>0.0</u>	<u>13.0</u>	<u>6.25</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
		Lb/gal	Ft	Ft
<u>Cement</u>	_____	_____	<u>0.0</u>	<u>9.0</u>
<u>Bentonite</u>	_____	_____	<u>9.0</u>	<u>11.0</u>

Describe grouting procedure _____

SCREEN:

- Perforated pipe
 Manufactured

Diameter 2.00 Inches Length 10.0 Feet

Material Sch 40 PVC

Slot Size 0.010" Set From 13.0 Feet to 23.0 Feet

Other information 12-20 Silica Sand from 11' to 23'

WAS A PACKER OR SEAL USED?

- Yes
 No

If so, what material? _____

Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?

- Yes, How? _____

Lab to which water quality sample sent for analysis No, Why Not? Monitoring Well Only

Well Owner: Powertech (USA) Inc.

Business Name: Powertech (USA) Inc.

Address: PO Box 812

City, State, Zip: Edgemont SD 57735

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sandy Clay - light brown</u>	<u>0</u>	<u>8</u>
<u>Silty Clay -brown</u>	<u>8</u>	<u>17</u>
<u>Sand & Gravel -brown</u>	<u>17</u>	<u>21</u>
<u>Shale - black</u>	<u>21</u>	<u>23</u>

STATIC WATER LEVEL Dry FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by Valve Reducers Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

Pumped Describe: NA

Bailed

Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Monitoring Well DB12-31-DC3
Lat/Long (43.49144N, 104.0411W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder: _____

Date: _____

SOUTH DAKOTA WATER WELL COMPLETION REPORT

Location NW ¼ NW ¼ Sec 32 Twp 6S Rg 1E

Well Owner: Powertech (USA) Inc.

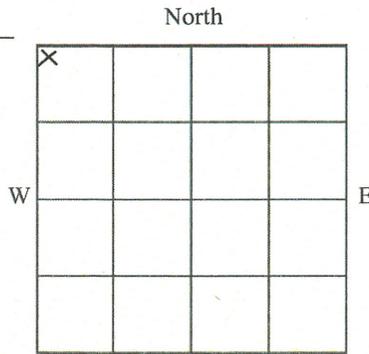
County Custer

Business Name: Powertech (USA) Inc.

Address: PO Box 812

City, State, Zip: Edgemont SD 57735

Please mark well location with an "X"



Well Completion Date

7/11/12

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
 ft. from Unknown (identify source)

PROPOSED USE:

- Domestic/Stock Municipal Business Test holes
 Irrigation Industrial Institutional Monitoring well

METHOD OF DRILLING:
3.25" ID, 6.25 OD HSA
to 23 feet

CASING DATA: Steel Plastic Other
 If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
	<u>2.00</u>	<u>0.0</u>	<u>13.0</u>	<u>6.25</u>

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
		Lb/gal	Ft	Ft
<u>Cement</u>			<u>0.0</u>	<u>9.0</u>
<u>Bentonite</u>			<u>9.0</u>	<u>11.0</u>

Describe grouting procedure _____

SCREEN: Perforated pipe Manufactured
 Diameter 2.00 Inches Length 10.0 Feet
 Material Sch 40 PVC
 Slot Size 0.010" Set From 13.0 Feet to 23.0 Feet
 Other information 12-20 Silica Sand from 11' to 23'

WAS A PACKER OR SEAL USED? Yes No
 If so, what material? _____
 Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?
 Yes, How? _____
 No, Why Not? Monitoring Well Only
 Lab to which water quality sample sent for analysis _____

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sandy Clay – light brown</u>	<u>0</u>	<u>3</u>
<u>Silty Clay –brown</u>	<u>3</u>	<u>18</u>
<u>Sand & Gravel – yellowish brown</u>	<u>18</u>	<u>22</u>
<u>Shale - black</u>	<u>22</u>	<u>23</u>

STATIC WATER LEVEL 18.0 FEET
 If flowing: closed in pressure _____ PSI
 GPM flow _____ through _____ Inch pipe
 Controlled by Valve Reducers Other _____
 Reduced flow rate _____ GPM
 Can well be completely shut in? _____

WELL TEST DATA:
 Pumped Describe: NA
 Bailed
 Other
 Pumping Level Below Land Surface
 _____ Ft. After _____ Hrs. pumped _____ GPM
 _____ Ft. After _____ Hrs. pumped _____ GPM
 If pump installed, pump rate: _____ GPM

REMARKS
Monitoring Well DB12-32-DC4
Lat/Long (43.49144N, 104.0329W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder: _____

Date: _____

SOUTH DAKOTA WATER WELL COMPLETION REPORT

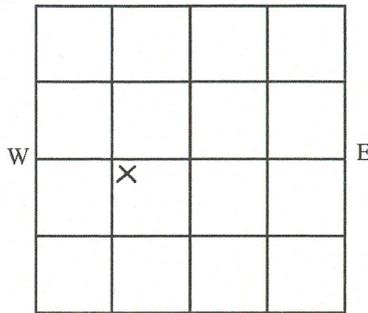
11-02

Location NE ¼ SW ¼ Sec 3 Twp 7S Rg 1E

County Fall River

North

Please mark well location with an "X"



Well Completion Date

7/9/12



Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
ft. from Unknown (identify source)

PROPOSED USE:

- Domestic/Stock Municipal Business Test holes
 Irrigation Industrial Institutional Monitoring well

METHOD OF DRILLING:

3.25" ID, 6.25" OD HSA to 30 feet

CASING DATA:

- Steel Plastic Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>2.00</u> IN	<u>0.0</u> FT	<u>15.0</u> FT	<u>6.25</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>		Lb/gal	<u>0.0</u> Ft	<u>11.0</u> Ft
<u>Bentonite</u>		Lb/gal	<u>11.0</u> Ft	<u>13.0</u> Ft

Describe grouting procedure _____

SCREEN:

- Perforated pipe Manufactured

Diameter 2.00 Inches Length 15.0 Feet

Material Sch 40 PVC

Slot Size 0.010" Set From 15.0 Feet to 30.0 Feet

Other information 12-20 Silica Sand from 13' to 30'

WAS A PACKER OR SEAL USED?

- Yes No

If so, what material? _____

Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?

- Yes, How? _____

- No, Why Not? Monitoring Well Only

Lab to which water quality sample sent for analysis _____

Well Owner: Powertech (USA) Inc.

Business Name: Powertech (USA) Inc.

Address: PO Box 812

City, State, Zip: Edgemont SD 57735

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sand - orange-brown</u>	<u>0</u>	<u>4</u>
<u>Sandy Clay - brown to reddish brown</u>	<u>4</u>	<u>15</u>
<u>Sand & Gravel - reddish brown, wet</u>	<u>15</u>	<u>29</u>
<u>Shale - black</u>	<u>29</u>	<u>30</u>

STATIC WATER LEVEL 12.5 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by Valve Reducers Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

Pumped Describe: NA

Bailed

Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Monitoring Well DB12-3-BC1

Lat/Long (43.47107N, 103.9905W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: _____

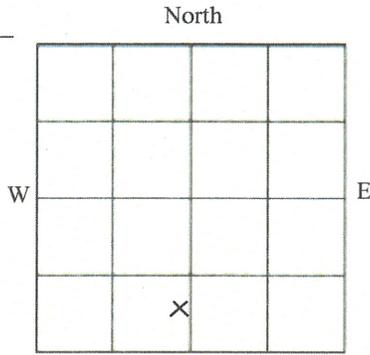
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 SW 1/4 Sec 3 Twp 7S Rg 1E

County Fall River

Please mark well location with an "X"



Well Completion Date

7/9/12



Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ft. from Unknown (identify source)

PROPOSED USE:

- Domestic/Stock Municipal Business Test holes
 Irrigation Industrial Institutional Monitoring well

METHOD OF DRILLING:
3.25" ID, 6.25" OD HSA to 27 feet

CASING DATA: Steel Plastic Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	<u>2.00</u> IN	<u>0.0</u> FT	<u>15.0</u> FT	<u>6.25</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>		Lb/gal	<u>0.0</u> Ft	<u>11.0</u> Ft
<u>Bentonite</u>		Lb/gal	<u>11.0</u> Ft	<u>13.0</u> Ft

Describe grouting procedure _____

SCREEN: Perforated pipe Manufactured

Diameter 2.00 Inches Length 10.0 Feet

Material Sch 40 PVC

Slot Size 0.010" Set From 15.0 Feet to 25.0 Feet

Other information 12-20 Silica Sand from 13' to 27'

WAS A PACKER OR SEAL USED? Yes No

If so, what material? _____

Describe packer(s) and location _____

DISINFECTATION: Was well disinfected upon completion?

Yes, How? _____

Lab to which water No, Why Not? Monitoring Well Only

quality sample sent for analysis _____

Well Owner: Powertech (USA) Inc.

Business Name: Powertech (USA) Inc.

Address: PO Box 812

City, State, Zip: Edgemont SD 57735

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sand - tan to brown</u>	<u>0</u>	<u>3</u>
<u>Clay - dark brown</u>	<u>3</u>	<u>8</u>
<u>Sandy Clay - red</u>	<u>8</u>	<u>15</u>
<u>Clayey Sand - red to reddish gray</u>	<u>15</u>	<u>22</u>
<u>Shale - black</u>	<u>22</u>	<u>27</u>

STATIC WATER LEVEL 3.0 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by Valve Reducers Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

Pumped Describe: NA

Bailed

Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Monitoring Well DB12-3-BC2

Lat/Long (43.46629N, 103.9863W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: _____

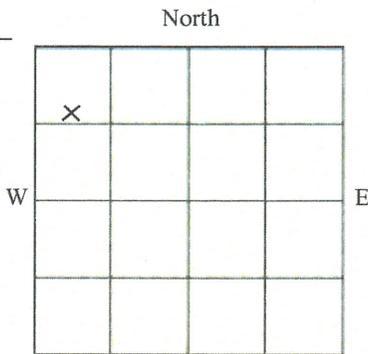
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11- 02

Location NW ¼ NW ¼ Sec 3 Twp 7S Rg 1E

County Fall River

Please mark well location with an "X"



Well Completion Date

7/9/12



Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
ft. from Unknown (identify source)

PROPOSED USE:

- Domestic/Stock Municipal Business Test holes
 Irrigation Industrial Institutional Monitoring well

METHOD OF DRILLING:

3.25" ID, 6.25" OD HSA to 27 feet

CASING DATA:

- Steel Plastic Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
	<u>2.00</u>	<u>0.0</u>	<u>10.0</u>	<u>6.25</u>
	IN	FT	FT	IN
	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
		Lb/gal	Ft	Ft
<u>Cement</u>			<u>0.0</u>	<u>6.0</u>
<u>Bentonite</u>			<u>6.0</u>	<u>8.0</u>

Describe grouting procedure _____

SCREEN:

- Perforated pipe Manufactured

Diameter 2.00 Inches Length 15.0 Feet

Material Sch 40 PVC

Slot Size 0.010" Set From 10.0 Feet to 25.0 Feet

Other information 12-20 Silica Sand from 8" to 27'

WAS A PACKER OR SEAL USED?

- Yes No

If so, what material? _____

Describe packer(s) and location _____

DISINFECTION: Was well disinfected upon completion?

- Yes, How? _____

Lab to which water quality sample sent for analysis No, Why Not? Monitoring Well Only

Well Owner: Powertech (USA) Inc.

Business Name: Powertech (USA) Inc.

Address: PO Box 812

City, State, Zip: Edgemont SD 57735

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Sand - orange-brown</u>	<u>0</u>	<u>4</u>
<u>Silt Clay - reddish brown</u>	<u>4</u>	<u>5</u>
<u>Clayey Sand - reddish brown</u>	<u>5</u>	<u>13</u>
<u>Sand & Gravel -reddish brown</u>	<u>13</u>	<u>25</u>
<u>Shale - black</u>	<u>25</u>	<u>27</u>

STATIC WATER LEVEL 9.5 FEET

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ Inch pipe

Controlled by Valve Reducers Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

Pumped Describe: NA

Bailed

Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Monitoring Well DB12-3-BC3
Lat/Long (43.47687N, 103.9925W) from PWE handheld GPS

This well was drilled under license # 678 and this report is true and accurate.

Drilling firm: American Engineering Testing, Inc.

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: _____