

WATER PERMIT NO. 7649-3

Name of Applicant: **Norther Lights Ethanol dba POET Biorefining**

Address: **PO Box 356, Big Stone City SD 57216**

Phone: **605 862-7902**

Amount of Water Claimed: **3.33 cfs (2000 AF)**

Total Acres: **NA**

Source of Water Supply: **groundwater (4 wells)**

Water to be used for: **industrial**

County: **Grant**

Type of Waste Disposal System:

Location: **5 miles northeast of Milbank**

PRIORITY

Date Received: **1-9-13**

Application/License Fee: **\$ 2450**

Corrected Application Received:

Period of Annual Use: **Jan – Dec 31**

Remarks: **Back supply for Big Stone Power Plant**

Diversion Point: **SW 1/4 Sec 15-T121N-R47W**

Land to be Irrigated: **NA**

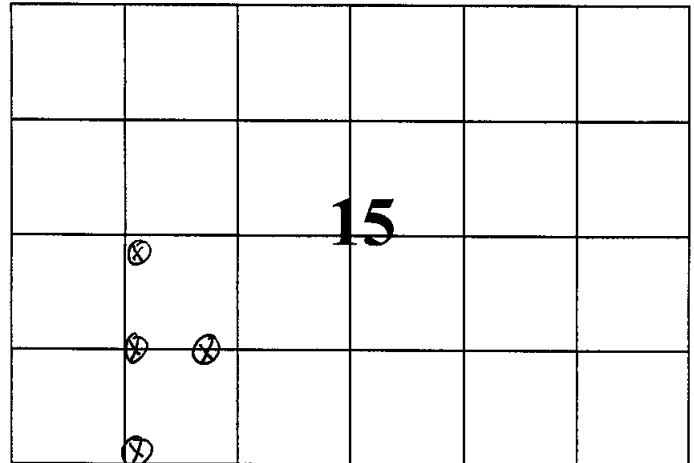
Depth of Well: **260 feet deep**

Well Driller: **Boart Longyear**

Remarks:

Type of Map: **topo**

Prepared by:



Reviewed and the Number Assigned on: **1-18-13**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

SD EForm - 1585LD V4

FORM 2: Application for uses other than irrigation
(type or print)

Mail to:
PMB 2020
DENR - Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352

(office use only)
No. 7649-3 Hydrologic Unit C702CC01
Basin Minnesota - Whetstone
Newspaper Grant Co. Review, Milbank
Public Opinion, Watertown

RECEIVED
JAN - 9 2013
WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

☐ Municipal ☐ Suburban Housing ☐ Recreational ☐ Institutional
☐ Rural Water System ☐ Commercial ☐ Fish & Wildlife ☐ Geothermal Heat
☐ Domestic (over 18 gpm) ☒ Industrial ☐ Other _____

Type of Application:
(check one)

☒ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____
☐ Amendment/Correction to Permit No. _____

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

1. Name to Appear on Water Permit Northern Lights Ethanol, LLC d.b.a. POET Biorefining - Big Stone(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address PO Box 356 Big Stone City SD 57216
(Address) (City) (State) (Zip Code)

Home Phone 605-862-7902 Cell _____ Email blaine.gomer@poet.com

2. Amount of water claimed 3.34 *CFS or 1500 **GPM 2000 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Veblen Aquifer

4. Location of point of diversion 4 wells in Section 15-T121N-R47W E 1/2 SW 1/4 County Grant
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☒ Yes ☐ No

If "Yes," where will water be used? SW 1/4, Section 12-T121N-R47W, the location of the plant
(example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Grant County6. Annual period during which water is to be used January 1 - December 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

The current water supply for the ethanol plant is provided by Big Stone Power Plant, who withdraws water from Big Stone Lake. The wells are being proposed as a backup supply/alternative source to water from Big Stone Power Plant. A surface water right application will be submitted in the future.

Supporting information is attached.

I, Blaine Gomer, General Manager Blaine Gomer, the applicant, certify that I have read this application, have examined the attached map, and that the matters stated are true.

2012-09

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Also, attach map and any other technical information. (see instructions)

SOUTH DAKOTA
WATER PERMIT NO. 7649-3

Date of first receipt of application is January 9, 2013.

The Water Management Board approved Water Permit No. 7649-3 on March 7, 2013 for Northern Lights Ethanol LLC, dba POET Biorefining, PO Box 356, Big Stone City SD 57216 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 7649-3 appropriates 2,000 acre feet of water at a maximum diversion rate of 3.34 cubic feet of water per second from four wells completed into the Veblen Aquifer (260 feet deep) located in the E 1/2 SW 1/4 Section 15-T121N-R47W.
2. The water appropriated shall be used for the purpose of industrial use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date from which applicant may claim right is January 9, 2013.
5. One-fifth of the construction is to be completed on or before September 7, 2015.
6. All construction is to be completed on or before March 7, 2018.
7. Water is to be put to beneficial use on or before March 7, 2022.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 7649-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Water Permit No. 7649-3 authorizes a maximum annual withdrawal from the Veblen Aquifer of 2,000 acre feet of water.
4. Northern Lights Ethanol, LLC shall report to the Chief Engineer annually the amount of water withdrawn from the Veblen Aquifer.

WATER MANAGEMENT BOARD

By: *Jeanne Goodman*
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

APR 12 2013

date



Supplemental Information

(type or print)

1. Well Information

(check one or both as applicable)

☒ Drilling new well(s)

☒ Using existing well(s)

a) If new wells, how many 3-4 Have test holes been drilled ☒ Yes ☐ No Drilled by Boart Longyear in 2006

(if yes, please provide copies of logs)

b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by Boart Longyear in 12/2006

c) Well Depth 260 ft Depth to Top of Water Bearing Material 80 ft Depth to Water from Surface 75 ft

d) Distance to nearest existing domestic well:

On applicant's property None

On property owned by others 700 - 1300 ft

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) No buildings or wastewater disposal at well site.

b) System Capacity (gallons) _____ Year Constructed _____

c) Connected to the City of _____ Sanitary System

3. Dugout Information

a) Surface Dimensions N/A Depth _____

b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____

If pipe, diameter _____

f) Secondary Spillway Capacity _____

Spillway Width _____

g) X & Y Slope (e.g. 3 to 1 is a typical slope)

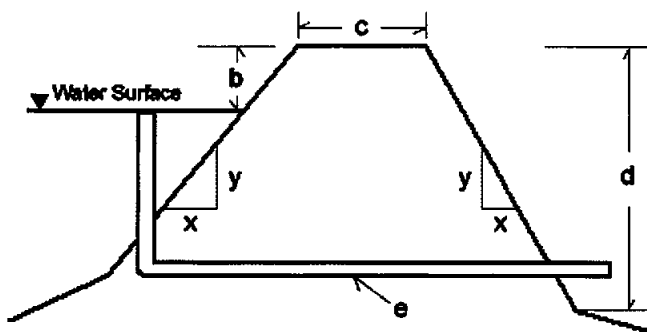
Upstream _____

Downstream _____

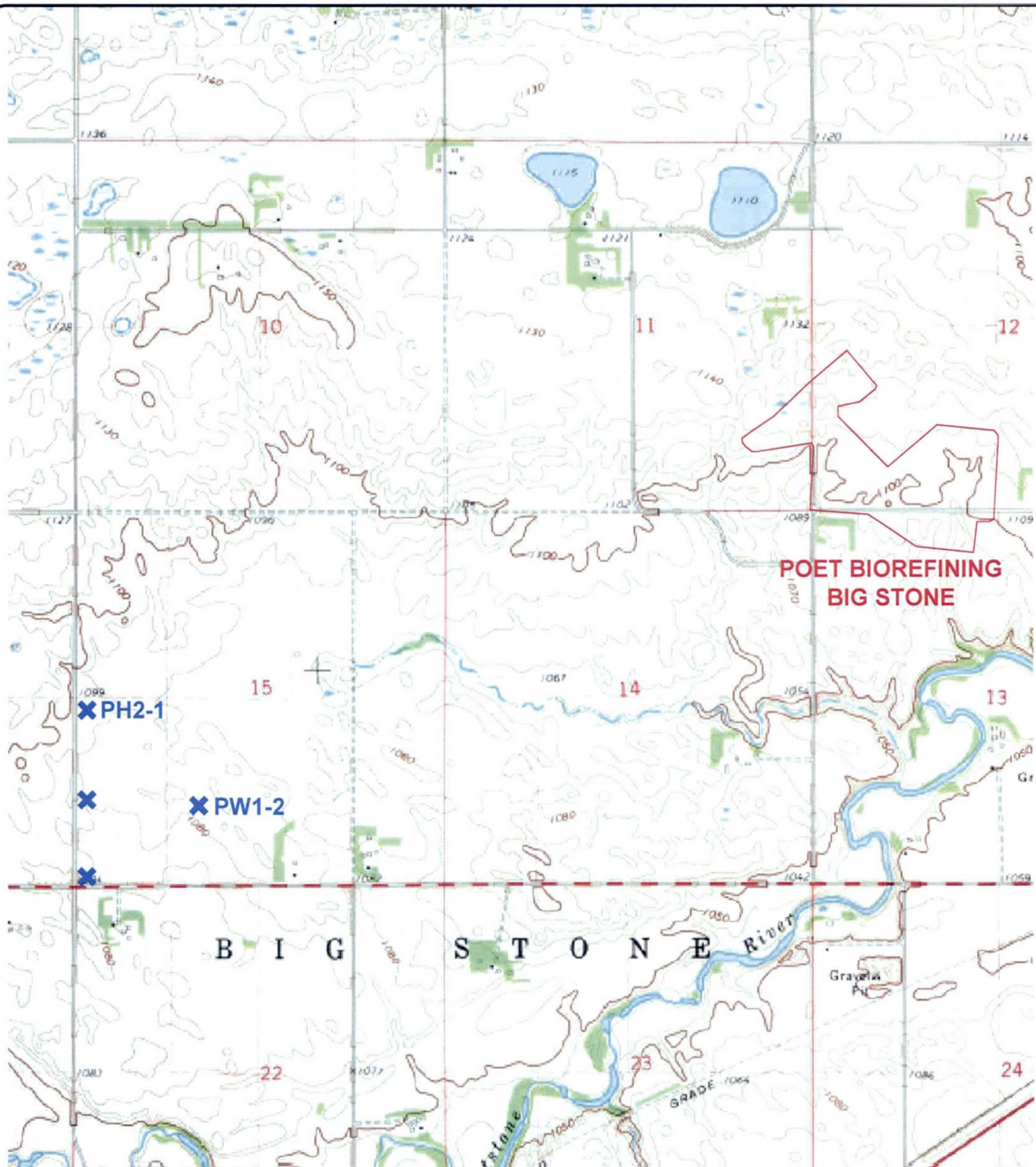
h) Surface Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



Plot Date: January 8, 2013 Plot Time: 7:02:20 AM File Name: X:\Biorefineries\BIG - Big Stone\Drawings\Civil\Environmental\BIG-C-Well-01.dwg Layout: Layout By: Singleton, David



GRAPHIC SCALE
0 2000
SCALE IN FEET

BIG STONE LAKE SE QUADRANGLE
T121N, R27W

RECEIVED
JAN - 9 2013



POET
design & construction

4615 N. Lewis Avenue
Sioux Falls, SD 57104
P/ 605.965.3575
F/ 605.965.2303
poet.com

Project Information:

NORTHERN LIGHTS ETHANOL, LLC
d.b.a.
POET BIOREFINING - BIG STONE
BIG STONE CITY, SD

Project:

BIG
Date:
01-02-13
Drawn By:
DBS
Checked By:
IJB

Sheet Title:

WATER RIGHTS
PROGRAM
PROPOSED
WELL LOCATION

Figure:

1

Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PW1-2**

SHEET 1 OF 4

Project Name Big Stone IIDrill Method RotasonicNumber 41/25-003 GWTR 200Drilling Started 12/3/06 Ended 12/5/06Elevation 1079.39636Location Big Stone City, SDLogged By Barr, EJCTotal Depth 196.0

DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
			0/40/60	2.5Y/3/2	Wet	OL		V dark grayish brown organic-rich sandy clay; topsoil	
						ML		V dark brown to olive gray silt with sand	
5		15/15/70	10YR/4/4	Wet	SP			V dark olive gray sand w/ silt, mg-cg	5
					SM			Dark yellowish brown sandy fat clay w/ gravel; fg	
					CH			Mottled w/ reddish oxidation; charcoal	
					CH			Yellowish red fat clay	
10		5/25/70	5YR/4/6	Moist				Dark red oxidation	10
								Yellowish red sandy lean clay; fg-mg	
								Charcoal	
15		5/25/70	5YR/4/6	Moist		CL			15
								Brown sandy lean clay; fg-mg	
20						CL		Dark reddish brown sandy lean clay; fg-cg	20
25		10/25/65	5YR/3/3	Moist		CL			25
								Black fat clay w/ fg gravel; diamicton	
30									30
						CH			
35		2/0/98	5Y/2.5/2	Moist					35
40		5/15/80	10YR/3/2	Moist		CL		V dark grayish brown lean clay w/ sand; fg-mg	40
45						CH		Dark reddish brown fat clay w/ fg-mg sand	45
						CH		V dark grayish brown fat clay	
						ML		Dark gray silt	
						SM		Very dark gray silty sand, fg	

(continued)

ENVIRO LOG 4 (LOGS CREATED PRE 5/24/04) 4125003.GPJ BARRLOG.GDT 3/21/07



Barr Engineering Co

Telephone:
Fax:

Remarks Sampled from 89' to 178'

Additional data may have been collected in the field which is not included on this log.

Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PW1-2**

SHEET 2 OF 4

Project Name Big Stone IIDrill Method RotasonicNumber 41/25-003 GWTR 200Drilling Started 12/3/06 Ended 12/5/06Elevation 1079.39636Location Big Stone City, SDLogged By Barr, EJCTotal Depth 196.0

DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
55		--	5/5/90	2.5Y/3/1	Moist	SM		Very dark gray silty sand, fg(continued)	
						ML		Dark gray silt	
						CL		V dark gray lean clay	
55								V dark gray fat clay	55
60									60
65									65
70		--	5/5/90	2.5Y/3/1	Moist	CH			70
75									75
80		--	30/20/50	2.5Y/2.5/1	Moist	CL		Black fat gravely clay w/ sand, fg-mg	80
								Dark grayish brown sand w/silt; fg-cg	
85						SP SM			85
						CH		V dark gray fat clay w/ lenses of SP-SM	
						ML		V dark gray silt	
90						SP		Dark grayish brown sand; mg-cg	90
95		--	0/0/100	10YR/4/2	Moist	ML		Dark grayish brown silt	95
						SP		Dark grayish brown sand mg-cg at top, grading to fg at bottom	
								(continued)	

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DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
105		-	0/98/2	5Y/4/1	Wet	SP		Dark grayish brown sand mg-cg at top, grading to fg at bottom(continued)	105
110						SP		Dark gray sand; mg	110
115		-	0/98/2	5Y/4/1	Wet			Dark gray sand; mg-cg	115
120						SP			120
125									125
130						SP		Gray sand, fg-mg	130
135		-	0/100/0	2.5Y/4/1	Wet	GP		Dark gray gravel (fg-cg) w/ sand (mg-cg)	135
						SP		Gray sand; mg-cg	
								Clean gray sand; mg	
140						SP			140
145									145
(continued)									

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SHEET 4 OF 4

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DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
155		--	15/85/0	2.5Y/4/1	Wet	SP		Clean gray sand; mg(<i>continued</i>)	155
						SP		V dark gray sand (mg-cg) w/ gravel (fg-cg)	
						SP		Gray sand (cg) w/ gravel (fg)	
								Grayish brown sand; mg	
160									160
165						SP			165
170									170
175		--	0/100/0	5Y/4/1	Wet	SP		Grayish brown sand; cg	175
						SP		Dark gray sand; mg-cg	
180						CH		Black sandy fat clay; fg-cg	180
						SC		V dark gray clayey sand w/ gravel and cobbles 3" in diameter	
185						SC		Greenish gray clayey sand mg-cg at top, grading to fg-mg at bottom w/ increasing cementation	185
190		--	0/80/20	5Y/4/1	Moist			Greenish gray sandstone; fg	190
195						SC			195

ENVIRO LOG 4 (LOGS CREATED PRE 5/24/04) 4125003.GPJ BARRLOG.GDT 3/21/07



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Fax:

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Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PH2-1**

SHEET 1 OF 6

Project Name Big Stone IIDrill Method RotasonicNumber 41/25-003 GWTR 200Drilling Started 2/6/07 Ended 2/7/07Elevation 1102.36224Location Big Stone City, SDLogged By Barr, EJCTotal Depth 260.0

DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
		1	0/2/98	10YR3/2	Frozen	OL		V dark grayish brown organic-rich topsoil w/ <5% sand, fg	
								Light olive brn sandy lean clay, fg-cg; reddish oxidation; charcoal	
5		--	0/35/65	2.5Y5/4	Moist	CL			5
10		--	0/20/80	2.5Y5/4	Moist	SW CL SP		Light yellowish brn sand, fg; fg-cg w/ 10% gravel Light olive brown lean clay w/ sand, fg-mg; reddish oxidation; charcoal Yellowish brn sand, fg	10
						CL		Yellowish brn lean clay w/ 10% sand, fg; reddish oxidation	
15		--	0/10/90	10YR1/4	Moist	CL		Dark yellowish brn lean clay w/ 10% sand, cg; reddish oxidation; sand lens, mg. @ 14"; charcoal	15
						SP		Dark yellowish brn sandy lean clay	
20						CL		Dark yellowish brn sandy lean clay, mg-cg; charcoal; reddish oxidation	20
25		--	0/80/20	10YR4/3	Moist	SP		Dark yellowish brn sand, cg, w/ fg gravel; <5% fines; charcoal;	25
						SP		Alternating lenses of fg-cg sand and fg gravel	
30						SC		Dark yellowish brn gravel and sand cemented in low-med plasticity fines	30
								V dark gray clay w/ 5% angular gravel; diamicton	
35		--	5/1/94	10YR3/1	Moist				35
40						CH			40
45		--	5/1/94	10YR3/1	Moist				45

(continued)

ENVIRO LOG 4 (LOGS CREATED PRE 5/24/04) 4125003.GPJ BARRLOG.GDT 3/21/07



Barr Engineering Co

Telephone:
Fax:

Remarks Sampled from 85' to 253'

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Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PH2-1**

SHEET 2 OF 6

Project Name Big Stone IIDrill Method RotasonicNumber 41/25-003 GWTR 200Drilling Started 2/6/07 Ended 2/7/07Elevation 1102.36224Location Big Stone City, SDLogged By Barr, EJCTotal Depth 260.0

DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/S&F FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
55		—	5/1/94	10YR3/1	Moist			V dark gray clay w/ 5% angular gravel; diamicton(continued)	55
60						CH			60
65		—	5/1/94	10YR3/1	Moist				65
70									70
75		—	0/100/0	GLE14/N	Moist	SP		Dark gray sand, fg-mg	75
						ML		Dark gray silt w/ 10% sand, cg	
						CL		V dark gray lean clay w/ 5% angular gravel; diamicton	
80						ML		Dark gray silt w/ 10% fg-mg sand	80
						CH		V dark gray fat clay w/ sand and gravel; diamicton	
85		—	5/90/5	2.5Y3/1	Wet	SP		V dark gray sand; cg	85
90						GC		V dark gray gravel to 2" in diameter w/ fg-cg sand and 20% fines	90
95		—	5/20/75	2.5Y3/1	Moist	CH		V dark gray fat clay w/ 20% sand, mg; diamicton	95
(continued)									

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SHEET 3 OF 6

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DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
105		—	0/98/2	2.5Y4/4	Wet	CH		V dark gray fat clay w/ 20% sand, mg; diamicton(continued)	105
						SP		Olive brown sand, cg	
110						SP		Olive brown sand, mg-cg	110
115		—	0/95/5	2.5Y4/1	Wet	SP			115
						SP		Dark gray sand, mg-cg	
120						SP			120
						SP		Dark gray sand, fg	
125						SP		Dark gray sand, mg-cg	125
						SP			
130						MI		V dark gray silt w/ 5% sand, fg	130
						SP		V dark gray sand, mg-cg	
						SP		V dark gray sand, grading from cg to fg at bottom	
135		—	0/100/0	2.5Y4/1	Wet	SP		V dark gray sand, fg to cg	135
						SP			
140						SP			140
						SP			
145						SP			145
						SP			
						SP			

(continued)

ENVIRO LOG 4 (LOGS CREATED PRE 5/24/04) 4125003.GPJ BARRLOG.GDT 3/21/07



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Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PH2-1**

SHEET 4 OF 6

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DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
155		—	0/98/2	2.5Y4/2	Wet	SP		V dark gray sand, fg to cg(continued)	155
160								Olive gray sand, mg-cg	160
165						SP			165
170									170
175		---	0/95/5	5Y3/1	Wet	SP		V dark gray sand, cg	175
180						ML		V dark gray sandy silt, fg	180
185						SP		V dark gray sand, v. fg	185
190								Dark gray sand, mg-cg	190
195		—	0/98/2	5Y4/1	Wet	SP			195
						CH		V dark gray fat clay w/ 5% v. fg sand	
						SP		V dark gray sand, fg	
						SP		Dark gray sand, mg	

(continued)

ENVIRO LOG 4 LOGS CREATED PRE 5/24/04 4125003.GPJ BARRLOG.GDT 3/21/07



Barr Engineering Co

Telephone:
Fax:

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Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PH2-1**

SHEET 5 OF 6

Project Name Big Stone IIDrill Method RotasonicNumber 41/25-003 GWTR 200Drilling Started 2/6/07 Ended 2/7/07Elevation 1102.36224Location Big Stone City, SDLogged By Barr, EJCTotal Depth 260.0

DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
205						SP		Dark gray sand, mg(<i>continued</i>)	205
210						SP		Dark gray sand, fg-mg	210
215		1	25/75/0	5Y4/2	Sat.	SP		Dark gray sand, cg	215
220						SP		Olive gray sand, cg, w/ 25% fg gravel	220
225						SP		Olive gray sand, cg w/ 10% fg gravel	225
230						SP		Gray sand, fg	230
235		2	60/40/0	5Y4/2	Sat.	SP		Olive gray sand, mg-cg w/ 35% gravel to 2" in diameter	235
240						GP		Olive gray gravel w/ cobbles to 4" in diameter and sand, cg	240
245									245
(continued)									

ENVIRO LOG 4 LOGS CREATED PRE 5/24/04 4125003.GPJ BARRLOG.GDT 3/21/07



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Client Otter Tail Power CompanyDrill Contractor Boart Longyear**LOG OF Boring PH2-1**

SHEET 6 OF 6

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DEPTH FEET	SAMPLE RECOVERY NUMBER	BLOWS/6 in.	%GR/SA/ FINES	Color	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
255		1			Dry	GP		Olive gray gravel w/ cobbles to 4" in diameter and sand, og(continued)	255
260						GP		Heterogeneous cobbles to 1 1/2" in diameter in a sand/silt matrix; conglomerate?	260
								Granite bedrock	
265									265
270									270
275									275
280									280
285									285
290									290
295									295

ENVIRO LOG 4 (LOGS CREATED PRE 5/24/04) 4125003.GPJ BARRLOG.GDT 3/2/07



Barr Engineering Co

Telephone:
Fax:

Remarks Sampled from 85' to 253'

Additional data may have been collected in the field which is not included on this log.



48416 - 144th St. PO Box 356
Big Stone City, SD 57216
poet.com

PHONE: 605.862.7902
FAX: 605.862.7904

RECEIVED

JAN - 9 2013

WATER RIGHTS
PROGRAM

January 8, 2013

PMB 2020
DENR - Water Rights
523 East Capital Ave.
Pierre, SD 57501-3182

Dear Sir or Madam:

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone (POET) operates a corn ethanol plant located in Section 12, T121N, R47W in Grant County. Our current source of water is from the Big Stone Power Plant who diverts water from Big Stone Lake. The water supply agreement allows Big Stone Power to curtail water to POET when the elevation of Big Stone Lake is below 967 feet for more than 90 continuous days. Because of drought conditions during 2012, POET is on notice that Big Stone Power may not be able to supply water to POET if drought conditions persist into 2013.

As a result, POET is requesting a water appropriation for a backup/alternate supply of water from the Veblen aquifer in Grant County, South Dakota. The enclosed application consist of Form 2, Form 2A, a map which locates the proposed wells, two well logs, an attachment of supplemental information and the application fee.

To ensure an adequate water supply for the plant, POET is expediting this project. One of the first priorities is to obtain a water appropriation permit. To assist the DENR in the processing of the enclosed application, Iona Branscum will be submitting additional information and analysis on the water resources from the Veblen aquifer in Grant County. I respectfully request the DENR expedite the processing of the enclosed application so that POET may develop an alternate supply of water as quickly as possible.

Please do not hesitate to contact me at 605-862-7902 or Iona Branscum at 605-965-2392 with questions or requests.

Sincerely,

Blaine Gomer, General Manager

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone

Enclosure: Appropriation Application

cc: Iona Branscum, POET Design & Construction



48416 - 144th St. PO Box 356
Big Stone City, SD 57216
poet.com

PHONE: 605.862.7902
FAX: 605.862.7904

RECEIVED
JAN - 9 2013
WATER RIGHTS
PROGRAM

**Supplemental Information
Application For Permit to Appropriate Water Within the State of South Dakota
Groundwater from Veblen Aquifer, Grant County
Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone
January 8, 2013**

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone (POET) is requesting water appropriations for up to four wells in Section 15, T121N, R47W in Grant County. This location was selected based on past water investigations completed by Barr Engineering for Otter Tail Power Company regarding their proposed Big Stone II project. On November 6, 2007, the DENR issued Water Permit No. 6636-3 to Otter Tail Power Company which allowed up to 14 wells to divert 13.81 cfs from the Veblen aquifer. Up to 10,000 acre-feet was allowed to be diverted annually. Based on recent discussions with Eric Gronlund, the DENR is currently pursuing cancellation of this water right.

In Barr's investigation, multiple pilot holes were completed, and aquifer pump tests were performed at two locations. POET is proposing to develop wells at the location where Pumping Well (PW) 1-2 and Pilot Hole (PH) 2-1 were located. Well logs for these locations are enclosed.

The requested diversion rate of 1,500 gallons per minute and an annual quantity of 2,000 acre-feet is based on the current water need of the corn ethanol facility and the need of a cellulosic ethanol addition to the Big Stone site. Project LIBERTY, our first commercial scale, cellulosic ethanol facility, is currently under construction in Emmetsburg, Iowa. Cellulosic ethanol plants are anticipated to be built next to POET associated plants, including POET Biorefining – Big Stone.

POET is planning to submit a water appropriation application for surface water from Big Stone Lake. Additional time is needed to prepare that application. And although this application is being submitted to function as a backup supply to the current source, POET may utilize the groundwater source for more than backup purposes. Therefore, POET requests that this application be considered as if it is potentially the only source or the primary source of water.

Big Stone Power has filled their storage ponds in the fall of 2012 and currently they are expected to be able to provide POET with water up to May 1, 2013. Therefore, POET is hoping to have an approved appropriation permit, wells drilled and the needed pipeline/infrastructure installed to ensure a groundwater source is available by that time, should the drought continue.

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 1/10, 20 13

RECEIVED OF Poet Biorefining 48416 144th St Big Stone City SD 57216

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>7649-3</u> to Appropriate Water, to construct and to put water to beneficial use	2550	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>7649-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. <u>Y</u>		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. <u>Y</u>		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	2750 00

No. **05928**

By

Salvatore E. [Signature]
Chief Engineer

Gronlund, Eric

From: Branscum, Iona <Iona.Branscum@POET.COM>
Sent: Tuesday, January 22, 2013 9:03 PM
To: Gronlund, Eric; Buhler, Ken
Cc: Gomer, Blaine
Subject: Supplemental information for Application No. 7649-3 (Northern Lights Ethanol, LLC d.b.a. POET Biorefining - Big Stone)
Attachments: Supplemental Information for Application No. 7649-3.pdf

Eric and Ken,

Thank you for your time and guidance during our meeting last week regarding Pending Application No. 7649-3 for water from the Veblen aquifer for Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone. As we discussed, I have finalized and attached the supplemental information regarding the potential for the Veblen aquifer to provide an adequate water supply for this application.

For a publication path, please proceed with this application being considered by the Water Management Board at their March 6 & 7, 2013 meeting. We recognize that this bypasses the typical process of the Chief Engineer potentially issuing a permit after a public notice with no comments. However, due to our compressed timelines, we wish to minimize the potential for any delays in the application processing.

As you requested, the name and address of the two land owners where the wells will be located (SW ¼ of S15, T121N, R47W) are:

East 80 acres:
Tyler Fredrichsen
48254 145th St.
Big Stone City, SD 57216

West 80 acres:
Brian Kasuske
614 Ashland Rd
Ashland, NE 68003

Please contact me if you have any problems opening the attached file, or you have questions that need to be addressed. I will be traveling to Iowa on Wednesday (tomorrow), please contact me on my cell phone (605-988-4374) if you need to speak with me.

I enjoyed meeting you and appreciate the DENR's responsiveness to expedite the processing of this application. Have a nice day.

Iona Branscum, P.E.
Senior Environmental Engineer

POET
design & construction
4615 N. Lewis Ave

Sioux Falls, SD 57104
P/ (605) 965-2392
F/ (605) 965-4903
poet.com

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**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7649-3, Northern Lights Ethanol, LLC**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 7649-3, Northern Lights Ethanol, LLC, dba POET Biorefining – Big Stone, c/o Blain Gomer, General Manager, PO Box 356, Big Stone City SD 57216.

The Chief Engineer is recommending APPROVAL of Application No. 7649-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 7649-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Water Permit No. 7649-3 authorizes a maximum annual withdrawal from the Veblen Aquifer of 2,000 acre feet of water.
4. Northern Lights Ethanol, LLC shall report to the Chief Engineer annually the amount of water withdrawn from the Veblen Aquifer.

See report on application for additional information.

Garland Erbele, Chief Engineer
February 5, 2013

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 7649-3
NORTHERN LIGHTS ETHANOL, LLC d.b.a. POET BIOREFINING-BIG STONE
FEBRUARY 3, 2013

Water Permit Application No. 7649-3 proposes to appropriate up to 2,000 acre-feet annually at a maximum diversion rate of 3.34 cubic feet of water per second from four wells completed into the Veblen aquifer. The wells are to be located in the SW¼ Section 15, T121N-R46W and are expected to be less than 260 feet deep. Water is to be used for industrial use for a corn ethanol plant and a potential cellulosic ethanol expansion at the site.

AQUIFER: Veblen (VEB)

The applicant has provided a report by Iona J. Branscum, P.E. titled "Supplemental Information for Water Permit Application No. 7649-3, Northern Lights Ethanol, LLC d.b.a. POET Biorefining-Big Stone, Groundwater Wells from the Veblen Aquifer" as part of their application. The report addressed the issues of water availability, impairment of existing rights, public interest and beneficial use to address the requirements of South Dakota Codified Law 46-2A-9. The Branscum report was reviewed from the water availability and existing right issues perspective. In general I concur with the Branscum report. There is one item of the report that appears errant. The Branscum report indicates that "There are no domestic wells identified in DENR records." Review of the well completion reports on file with the DENR-Water Rights Program identified a number of wells within approximately two miles of the well sites proposed by this application. The approximate locations of the wells are shown on Figure 1.

The presence of these nearby domestic wells does not change the final analysis regarding the potential impact to existing rights. It is possible that drawdown from this appropriation may affect water levels in nearby domestic wells and in some cases; the domestic well owner may need to lower his pump intake. However, South Dakota Codified Law (SDCL) 46-1-5 establishes that domestic use takes precedence over all appropriative rights. This water permit, if approved, will be conditioned with a standard permit qualification applied to most groundwater permits/rights which states that:

"The well approved under this permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights".

SDCL 46-6-6.1 does not protect artesian head pressure as a means of delivery and the Water Management Board has consistently recognized that to place water to maximum beneficial use a certain amount of drawdown may occur. To balance interests between irrigation use and delivery of water by artesian pressure the Water Management Board has defined an "adversely impacted domestic well" in ARSD 74:02:04:20(7) as:

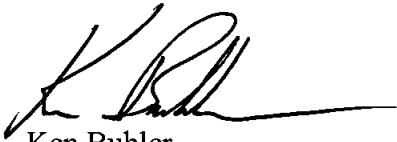
"a well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as

near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner's needs”

Considering the protection afforded domestic use wells by South Dakota Water Law and the likely “standard” qualification on the permit. There is a reasonable probability that the domestic wells on in the area will not be adversely impacted.

CONCLUSIONS:

1. The report by Iona J. Branscum, P.E. titled “Supplemental Information for Water Permit Application No. 7649-3, Northern Lights Ethanol, LLC d.b.a. POET Biorefining-Big Stone, Groundwater Wells from the Veblen Aquifer” as part of this water permit application is a valid assessment for this application and the Chief Engineer should rely on it in developing his recommendation.



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

Water Rights, 2013, Well Completion Report Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

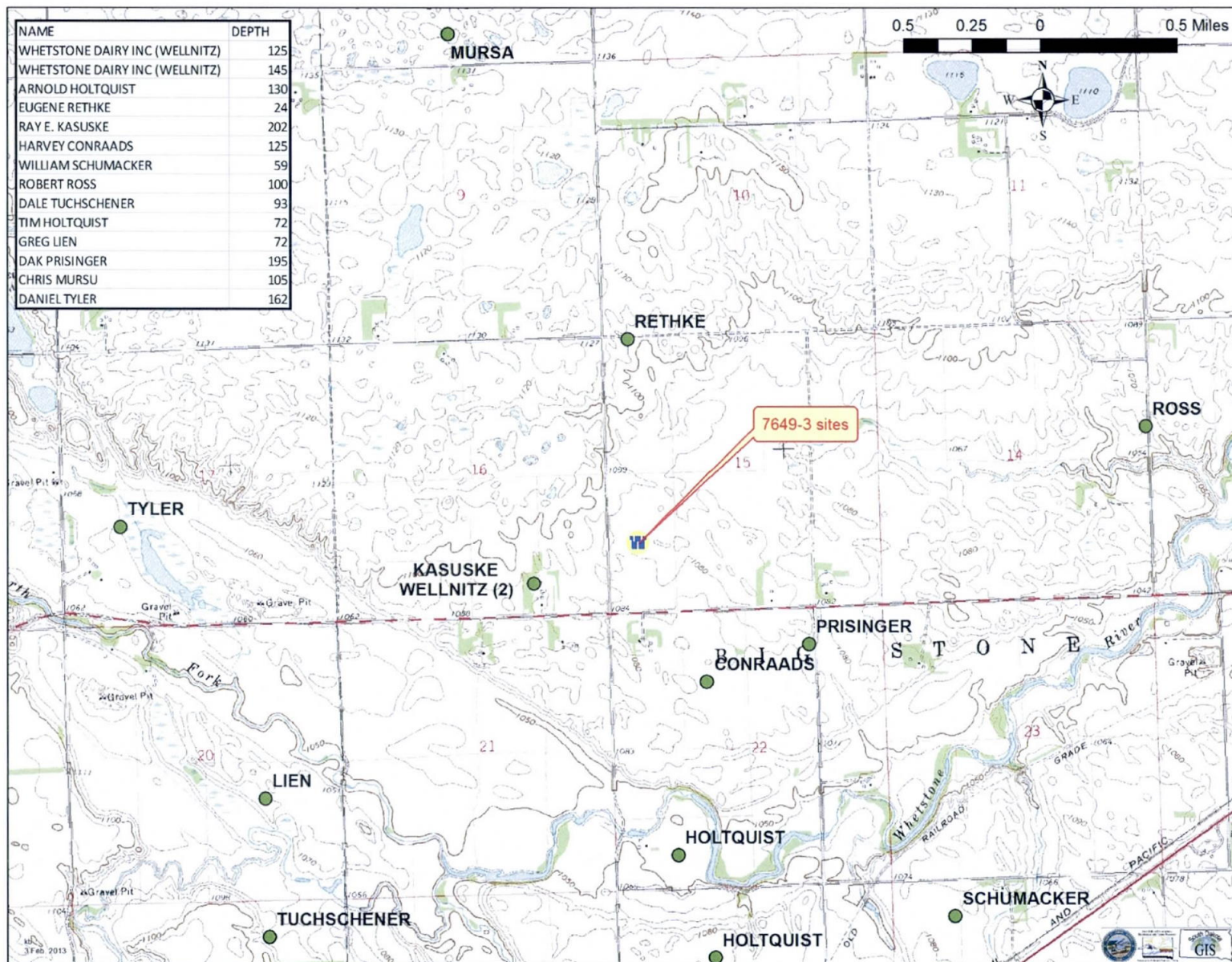


Figure 1. Approximate location of domestic wells on file within approximately two miles of the well sites proposed by Application No. 7649-3

Gronlund, Eric

From: Branscum, Iona <Iona.Branscum@POET.COM>
Sent: Tuesday, February 05, 2013 5:02 PM
To: Gronlund, Eric; Buhler, Ken
Cc: Gomer, Blaine
Subject: Update on landowners - Application No. 7649-3 (Northern Lights Ethanol, LLC d.b.a. POET Biorefining - Big Stone)

Eric, As we discussed today.....

Mr. Kasuske, the owner of the west 80 acres of the SW ¼ of Section 15, has informed POET he will not be allowing POET to access his land for a water supply well.

West 80 acres:
Brian Kasuske
614 Ashland Rd
Ashland, NE 68003

Therefore, POET will be working with Tyler Fredrichsen, which owns the east 80 acres.

East 80 acres:
Tyler Fredrichsen
48254 145th St.
Big Stone City, SD 57216

Therefore, your notifications should identify Mr. Fredrichsen as the owner of the land of the proposed wells. I appreciate your ability to make adjustments at this time. I will be looking for your public notice instructions.

Have a nice day.

Iona Branscum, P.E.
Senior Environmental Engineer

POET
ethanol & construction
4615 N. Lewis Ave
Sioux Falls, SD 57104
P/ (605) 965-2392
F/ (605) 965-4903
poet.com

From: Branscum, Iona
Sent: Tuesday, January 22, 2013 9:03 PM
To: Gronlund, Eric (Eric.Gronlund@state.sd.us); 'Ken.Buhler@state.sd.us'
Cc: Gomer, Blaine
Subject: Supplemental information for Application No. 7649-3 (Northern Lights Ethanol, LLC d.b.a. POET Biorefining - Big Stone)

Eric and Ken,

Thank you for your time and guidance during our meeting last week regarding Pending Application No. 7649-3 for water from the Veblen aquifer for Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone. As we discussed, I have finalized and attached the supplemental information regarding the potential for the Veblen aquifer to provide an adequate water supply for this application.

For a publication path, please proceed with this application being considered by the Water Management Board at their March 6 & 7, 2013 meeting. We recognize that this bypasses the typical process of the Chief Engineer potentially issuing a permit after a public notice with no comments. However, due to our compressed timelines, we wish to minimize the potential for any delays in the application processing.

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48254 145th St.
Big Stone City, SD 57216

West 80 acres:

Brian Kasuske
614 Ashland Rd
Ashland, NE 68003

Please contact me if you have any problems opening the attached file, or you have questions that need to be addressed. I will be traveling to Iowa on Wednesday (tomorrow), please contact me on my cell phone (605-988-4374) if you need to speak with me.

I enjoyed meeting you and appreciate the DENR's responsiveness to expedite the processing of this application. Have a nice day.

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**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

February 6, 2013

Tyler Fredrichsen
48254 145th Street
Big Stone City SD 57216

Dear Mr. Fredrichsen:

Please find enclosed the report, recommendation and notice of hearing for a water permit application filed by Northern Lights Ethanol to appropriate water from the Veblen Aquifer in Grant County. The notice is to be published in the Grant County Review and Watertown Public Opinion on February 13, 2013 scheduling a 1:00 PM hearing on Thursday, March 7, 2013 before the Water Management Board in Pierre South Dakota. The date for petitions to intervene in the hearing process is February 25, 2013 as set for in the notice of hearing

Northern Lights Ethanol identified you as the owner of the E ½ SW ¼ Section 15, T121N, R47W. Therefore, DENR wanted to provide you personal notification of this application.

Please contact me if you have any questions.

Sincerely

Eric Gronlund
Water Rights Program, DENR
605 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

February 6, 2013

Brian Kasuske
614 Ashland Rd
Ashland NE 68003

Dear Mr. Kasuske:

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Initially, the application included the W ½ SW ¼ of Section 15, T121N, R47W as the site of proposed wells and listed you as the landowner. However, the applicant has since amended their application to delete the W ½ SW ¼ and the proposed wells are to be located only in the E ½ SW ¼ of this section. However, DENR still wanted to inform you of this application.

Please contact me if you have any questions.

Sincerely

Eric Gronlund
Water Rights Program, DENR
605 773-3352

Enclosures

**WATER RIGHTS
PROGRAM**

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MAR - 6 2013

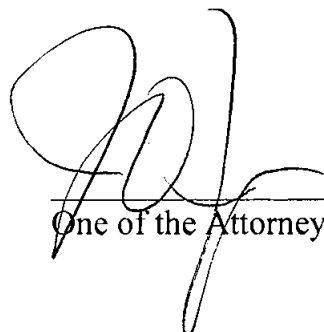
WATER RIGHTS
PROGRAM

CERTIFICATE OF SERVICE

I hereby certify that on the 4th day of March, 2013, I caused to be served by United States first-class mail, postage prepaid, and by email a true and correct copy of the foregoing Notice of Appearance upon the following:

Ms. Diane Best
Office of the Attorney General
1302 E Hwy 14
Suite 1
Pierre SD 57501-8501

Mr. Garland Erbele, Chief Engineer
Water Rights Program
Foss Building
523 East Capitol
Pierre, SD 57501



One of the Attorneys for Applicant

Printer's Affidavit of Publication

RECEIVED

STATE OF SOUTH DAKOTA
COUNTY OF GRANT

} ss.

FEB 15 2013

WATER RIGHTS
PROGRAM

Ann Tuchscherer

of said County and State, being first duly sworn, on oath says that the Grant County Review is a legal weekly newspaper of general circulation, printed and published in Milbank, in said County of Grant and State of South Dakota, by Phyllis Justice, and has been such newspaper during the times hereinafter mentioned; that said newspaper is a legal newspaper; and that it has a bona fide circulation of more than two hundred copies weekly, and has been published within said County of Grant in the English language and has been admitted to the United States mail under second class mailing privilege, for at least one year next prior to the publication of the Notice herein mentioned, and has been printed wholly in an office maintained at the said place of publication, that I, the undersigned, Bookkeeper of said newspaper, in charge of the advertising department thereof, have personal knowledge of all the facts stated in this affidavit; that the advertisement headed Notice of

Application No. 7649-3 to Appropriate
Water POET Biorefining

a printed copy of which, taken from the paper in which the same was published, is attached to this sheet and is made a part of this Affidavit, was published in said newspaper at least once each week for one successive weeks, on the day of each week on which the said newspaper was regularly published, to-wit:

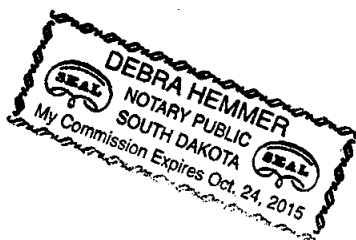
<u>February 13 2013</u>	<u>20</u>
<u>20</u>	<u>20</u>
<u>20</u>	<u>20</u>

That \$ 56.43, being the full amount of the fee charged for the publication of said Notice, inures to the benefit of the publisher of the Grant County Review; that no agreement or understanding for the division thereof has been made with any person, and that no part has been agreed to be paid to any person whomsoever.

Ann Tuchscherer

Subscribed and sworn to before me this 13th day of Feb 20 13

Debra Hemmer
Notary Public, Grant County, South Dakota



Publication Fee \$ 56.43
Notarial Fee \$ _____
Total \$ 56.43

NOTICE OF
NO. 7649-3 to A

Notice is given that Northern Lights Ethanol, LLC dba POET Biorefining - Big Stone, PO Box 356, Big Stone City, SD, 57216, has filed an application for a water permit to appropriate 2,000 acre feet of water at a maximum diversion rate of 3.34 cubic feet of water per second from four wells completed into the Veblen Aquifer (260 feet deep) located in the E 1/2 SW 1/4 Section 15-T12N-R47W for industrial use.

SDCL 46-2A-4(10) provides that "if the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the Chief Engineer's recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board." In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7649-3 because 1) unappropriated water is available; 2) existing rights will not be unlawfully impaired; 3) it is a beneficial use of water; and 4) it is in the public interest.

The Water Management Board will consider this application at 1:00 p.m. on March 7, 2013 in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave., Pierre, SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any interested person who intends to participate in the hearing shall file a petition to oppose or support the application and the petition shall be filed with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E. Capitol, Pierre, SD, 57501, (605-773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by February 25, 2013. The petition may be informal, but shall be in writing and shall include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. The hearing is an

Printer's Affidavit of Publication
and Attorney's Affidavit Ex-Rel. Fees

In _____ Court

STATE OF SOUTH DAKOTA
COUNTY OF GRANT

} ss.

Filed in the office of _____

_____ on the _____

_____ day of _____, 20____

Attorney for _____

Under SDCL 1-26-17(7) notices must state that "if the amount in controversy exceeds \$2,500.00 or if a property right may be terminated, any party to the contested case may require the agency to use the Office of Hearing Examiners by giving notice of the request to the agency no later than ten days after service of a notice of hearing issued pursuant to SDCL 1-26-17. This is a Notice of Hearing, service is being provided by publication, and the applicable date to give notice to the Chief Engineer is February 25, 2013. However, since this particular matter is a water permit application and not a monetary controversy in excess of \$2,500.00 or termination of a property right the Chief Engineer disputes the applicability of this provision and maintains that the hearing must be conducted by the Board.

As applicable, the following provisions the legal authority and jurisdiction under which the hearing will be held and the particular statutes and rules pertaining to this application: SDCL 1-26-16 thru 1-26-28; SDCL 46-1-1 thru 46-1-13 thru 46-1-16; 46-2-3, 46-2-9, 46-2-11, 46-2-17, 46-2A-1 thru 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21, 46-2A-23, 46-5-1.1, 46-5-2 thru 46-5-26, 46-5-30.2 thru 46-5-31, 46-5-33, 46-5-34, 46-5-35 thru 46-5-38, 46-5-46, 46-5-47, 46-6-1, 46-6-13, 46-6-31, 46-6-6-1, 46-6-10, 46-6-14, 46-6-21, 46-6-26, and Board Rules ARSD 74-02-01:01 thru 74-02-01:25.02, 74-02-01:35.01

Steven M. Pirner, Secretary
Department of Environment and Natural Resources
Published once at an approximate cost of \$56.43.

APPLICATION
Proprietary Water

adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The March 7, 2013 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose or support the application. The request for an automatic delay must be filed by February 25, 2013. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to all petitioners regarding the time, date and location.

Contact Eric Gronlund by February 25, 2013 at the above Chief Engineer's address to request copies of the staff report, recommendation, application or other information. Notice is given to individuals with disabilities that this hearing is being held in a physically accessible place. Please notify the Department of Environment and Natural Resources at least 48 hours before the hearing if you have a disability for which special arrangements must be made at the hearing. The telephone number for making arrangements is (605) 773-3352.

RECEIVED

FEB 21 2013

Form 8

WATER RIGHTS
PROGRAM

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
) SS
County of Codington)

I, Monica K. Saathoff

certify that the attached printed Notice was
taken

from the Watertown Public Opinion

printed and published in Watertown

County of Codington and

state of South Dakota. The notice was
published

in the newspaper on the following date:

February 13th, 2013

Cost of Printing \$128.46

Monica K. Saathoff
(Signature)

Bookkeeper
(Title)

February 13th, 2013
(Date Signed)

DEPARTMENT OF ENVIRON- MENT AND NATURAL RESOURCES

NOTICE OF HEARING ON Application No. 7649-3 to Appropriate Water

Notice is given that Northern
Lights Ethanol, LLC dba
POET Biorefining - Big
Stone, PO Box 356, Big
Stone City SD 57216 has
filed an application for a
water permit to appropriate
2,000 acre feet of water at a
maximum diversion rate of
3.34 cubic feet of water per
second from four wells com-
pleted into the Veblen Aquifer
(260 feet deep) located in the
E 1/2 SW 1/4 Section 15-
T121N-R47W for industrial
use.

SDCL 46-2A-4(10) provides
that "if the applicant does not
contest the recommendation
of the Chief Engineer and no
petition to oppose the appli-
cation is received, the Chief
Engineer shall act on the
application pursuant to the
Chief Engineer's recommen-
dation and no hearing may
be held before the board,
unless the Chief Engineer
makes a finding that an appli-
cation, even if uncontested,
presents important issues of
public policy or public inter-
est that should be heard by
the board." In this case, the
Chief Engineer finds that this
application presents impor-
tant issues of public interest
that should be heard by the
Water Management Board.

Pursuant to SDCL 46-2A-2,
the Chief Engineer recom-
mends APPROVAL of
Application No. 7649-3
because 1) unappropriated
water is available, 2) existing
rights will not be unlawfully
impaired, 3) it is a beneficial
use of water, and 4) it is in
the public interest.

The Water Management
Board will consider this appli-
cation at 1:00 p.m. on March
7, 2013 in the Matthew
Training Center, Joe Foss
Bldg, 523 E. Capitol Ave.
Pierre SD. The Chief
Engineer's recommendation
is not final or binding upon
the Board. The Board is
authorized to 1) approve, 2)
approve with qualifications,
3) defer, or 4) deny this appli-

cation based on the facts
presented at the public hear-
ing.

Any interested person who
intends to participate in the
hearing shall file a petition to
oppose or support the appli-
cation and the petition shall
be filed with BOTH the appli-
cant and Chief Engineer.
The applicant must also file a
petition if opposed to the
Chief Engineer's recommen-
dation. The Chief Engineer's
address is "Water Rights
Program, Foss Building, 523
E. Capitol, Pierre SD 57501
(605) 773-3352" and the
applicant's mailing address is
given above. A petition
filed by either an interested
person or the applicant must
be filed by February 25,
2013. The petition may be
informal, but shall be in writ-
ing and shall include a state-
ment describing the petition-
er's interest in the applica-
tion, the petitioner's reasons
for opposing or supporting
the application, and the sig-
nature and mailing address
of the petitioner or the peti-
tioner's legal counsel, if legal
counsel is obtained. The
hearing is an adversary pro-
ceeding and any party has
the right to be present at the
hearing and to be represent-
ed by a lawyer. These and
other due process rights will
be forfeited if they are not
exercised at the hearing and
decisions of the Board may
be appealed to the Circuit
Court and State Supreme
Court as provided by law.

The March 7, 2013 hearing
date will be automatically
delayed for at least 20 days
upon written request to the
Chief Engineer from the
applicant or any person who
has filed a petition to oppose
or support the application.
The request for an automatic
delay must be filed by
February 25, 2013. If an
automatic delay is request-
ed, the hearing will be
rescheduled for a future
Board meeting and personal
notice will be provided to all
petitioners regarding the
time, date and location.

Contact Eric Gronlund by
February 25, 2013 at the
above Chief Engineer's
address to request copies of
the staff report, recommen-
dation, application or other
information. Notice is given
to individuals with disabilities
that this hearing is being held
in a physically accessible
place. Please notify the
Department of Environment
and Natural Resources at
least 48 hours before the
hearing if you have a disabili-
ty for which special arrange-
ments must be made at the
hearing. The telephone
number for making arrange-
ments is (605) 773-3352.

Under SDCL 1-26-17(7)
notices must state that "if
the amount in controversy
exceeds \$2,500.00 or if a
property right may be termi-
nated, any party to the con-
tested case may require the
agency to use the Office of
Hearing Examiners by giving
notice of the request to the
agency no later than ten
days after service of a notice
of hearing issued pursuant to
SDCL 1-26-17." This is a
Notice of Hearing, service is
being provided by publica-
tion, and the applicable date

to give notice to the Chief
Engineer is February 25,
2013. However, since this
particular matter is a water
permit application and not a
monetary controversy in
excess of \$2,500.00 or termi-
nation of a property right the
Chief Engineer disputes the
applicability of this provision
and maintains that the hear-
ing must be conducted by the
Board.

As applicable, the following
provides the legal authority
and jurisdiction under which
the hearing will be held, and
the particular statutes and
rules pertaining to this appli-
cation: SDCL 1-26-16 thru 1-
26-28; SDCL 46-1-1 thru 46-
1-9, 46-1-13 thru 46-1-18;
46-2-3.1, 46-2-9, 46-2-11,
46-2-17, 46-2A-1 thru 46-2A-
12, 46-2A-14, 46-2A-15, 46-
2A-20, 46-2A-21, 46-2A-23;
46-5-1.1, 46-5-2 thru 46-5-
26, 46-5-30.2 thru 46-5-30.4,
46-5-31, 46-5-32 thru 46-5-
34.1, 46-5-38 thru 46-5-39,
46-5-46, 46-5-47, 46-5-49,
46-6-1 thru 46-6-3.1, 46-6-
6.1, 46-6-10, 46-6-13, 46-6-
14, 46-6-21, 46-6-26; and
Board Rules ARSD
74:02:01:01 thru
74:02:01:35.01.

Steven M. Pimer, Secretary,
Department of Environment
and Natural Resources.
Published once at the
approximate cost of \$126.50.
(February 13, 2013)

All legal notices in the Public
Opinion and other South
Dakota newspapers can be
found at
www.sdpublishnotices.com



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

February 6, 2013

Grant County Review
PO Box 390
Milbank SD 57252

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7649-3 to Appropriate Water. Please publish the notice once on February 13, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Northern Lights Ethanol, LLC dba POET biorefining, Big Stone, c/o Blaine Gomer, PO Box 356, Big Stone City SD 57216 (Ph # 605-862-7902).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

February 6, 2013

Public Opinion
PO Box 10
Watertown SD 57201

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7649-3 to Appropriate Water. Please publish the notice once on February 13, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Northern Lights Ethanol, LLC dba POET biorefining, Big Stone, c/o Blaine Gomer, PO Box 356, Big Stone City SD 57216 (Ph # 605-862-7902).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATE, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.

February 6, 2013

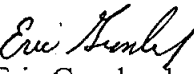
Northern Lights Ethanol LLC
dba POET biorefining Big Stone
Blaine Gomer
PO Box 356
Big Stone City SD 57216

Dear Mr. Gomer:

Water Permit Application No. 7649-3 for industrial use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Grant County Review printed at Milbank SD (Ph # 605-432-4516) and the Public Opinion printed at Watertown SD (Ph # 605-886-6901). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper – Publish the Notice on February 13, 2013. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF HEARING on Application No. 7649-3 to Appropriate Water

Notice is given that Northern Lights Ethanol, LLC dba POET Biorefining – Big Stone, PO Box 356, Big Stone City SD 57216 has filed an application for a water permit to appropriate 2,000 acre feet of water at a maximum diversion rate of 3.34 cubic feet of water per second from four wells completed into the Veblen Aquifer (260 feet deep) located in the E 1/2 SW 1/4 Section 15-T121N-R47W for industrial use.

SDCL 46-2A-4(10) provides that “if the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the Chief Engineer’s recommendation and no hearing may be held before the board, unless the Chief Engineer makes a finding that an application, even if uncontested, presents important issues of public policy or public interest that should be heard by the board.” In this case, the Chief Engineer finds that this application presents important issues of public interest that should be heard by the Water Management Board.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7649-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest.

The Water Management Board will consider this application at 1:00 p.m. on March 7, 2013 in the Matthew Training Center, Joe Foss Bldg, 523 E. Capitol Ave. Pierre SD. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer, or 4) deny this application based on the facts presented at the public hearing.

Any interested person who intends to participate in the hearing shall file a petition to oppose or support the application and the petition shall be filed with BOTH the applicant and Chief Engineer. The applicant must also file a petition if opposed to the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by February 25, 2013. The petition may be informal, but shall be in writing and shall include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. The hearing is an adversary proceeding and any party has the right to be present at the hearing and to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing and decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law.

The March 7, 2013 hearing date will be automatically delayed for at least 20 days upon written request to the Chief Engineer from the applicant or any person who has filed a petition to oppose or support the application. The request for an automatic delay must be filed by February 25, 2013. If an automatic delay is requested, the hearing will be rescheduled for a future Board meeting and personal notice will be provided to all petitioners regarding the time, date and location.

Contact Eric Gronlund by February 25, 2013 at the above Chief Engineer’s address to request copies of the staff report, recommendation, application or other information. Notice is given to individuals with disabilities that this hearing is being held in a physically accessible place. Please notify the Department of Environment and Natural Resources at least 48 hours before the hearing if you have a disability for which special arrangements must be made at the hearing. The telephone number for making arrangements is (605) 773-3352.

Under SDCL 1-26-17(7) notices must state that “if the amount in controversy exceeds \$2,500.00 or if a property right may be terminated, any party to the contested case may require the agency to use the Office of Hearing

Examiners by giving notice of the request to the agency no later than ten days after service of a notice of hearing issued pursuant to SDCL 1-26-17.” This is a Notice of Hearing, service is being provided by publication, and the applicable date to give notice to the Chief Engineer is February 25, 2013. However, since this particular matter is a water permit application and not a monetary controversy in excess of \$2,500.00 or termination of a property right the Chief Engineer disputes the applicability of this provision and maintains that the hearing must be conducted by the Board.

As applicable, the following provides the legal authority and jurisdiction under which the hearing will be held and the particular statutes and rules pertaining to this application: SDCL 1-26-16 thru 1-26-28; SDCL 46-1-1 thru 46-1-9, 46-1-13 thru 46-1-16; 46-2-3.1, 46-2-9, 46-2-11, 46-2-17; 46-2A-1 thru 46-2A-12, 46-2A-14, 46-2A-15, 46-2A-20, 46-2A-21, 46-2A-23; 46-5-1.1, 46-5-2 thru 46-5-26, 46-5-30.2 thru 46-5-30.4, 46-5-31 46-5-32 thru 46-5-34.1, 46-5-38 thru 46-5-39, 46-5-46, 46-5-47, 46-5-49; 46-6-1 thru 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, 46-6-21, 46-6-26; and Board Rules ARSD 74:02:01:01 thru 74:02:01:25.02; 74:02:01:35.01.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at an approximate cost of _____.

PAYMENT REQUEST FORM

PAYEE: Northern Lights Ethanol LLC
Blaine Gomer - Gen Manager
PO Box 356
Big Stone City SD 57216

FROM: DENR Water Rights Program
523 E. Capitol Ave
Pierre, SD 57501-3181

DESCRIPTION OF SERVICE, PRODUCE OR TRANSFER

Refund on Water Permit No. 7649-3

AMOUNT: \$300.00

FUNDING SOURCE:

GENERAL: X

FEDERAL:

COMMENTS:

AUTHORIZATION:

Paul Jackson 4/12/13

I declare and affirm under the penalties of perjury that this claim is in all things, true and correct. I further agree to comply with the provisions of the Civil Rights Act of 1964 and regulations issued thereunder relating to nondiscrimination in federal assisted programs.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

APR 12 2013

Northern Lights Ethanol LLC
dba POET Biorefining
c/o Blaine Gomer, General Manager
PO Box 356
Big Stone City SD 57216

Dear Mr. Gomer:

Enclosed is Water Permit No. 7649-3 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

This application was submitted with a \$2,750.00 fee. The correct fee is \$2,450.00. Therefore, \$300.00 will be refunded to POET Biorefining. The refund check should be received within the next couple of weeks.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet ? *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

Supplemental Information for Water Permit Application No. 7649-3

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone

Groundwater Wells from the Veblen Aquifer

Water Permit Application No. 7649-3 proposes to appropriate 1,500 gallons per minute of water from up to four wells completed into the Veblen aquifer. The proposed locations of the wells are in the SW ¼ of Section 15, T121N, R47W, of Grant County. The wells are proposed to be up to 260 feet deep. The proposed, maximum amount of water to be diverted in a calendar year is 2,000 acre feet. The water is to be used as an alternate supply for a corn ethanol plant.

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone is a corn ethanol plant located in Section 12, T121N, R47W, Grant County. Their current source of water is from the Big Stone Power Plant who diverts water from Big Stone Lake under multiple water rights. The agreement between Northern Lights Ethanol and Big Stone Power Plant allows Big Stone Power to curtail the water supply when the elevation of Big Stone Lake is below 967 feet for more than 90 continuous days. Because of drought conditions during 2012 the elevation in Big Stone Lake had dropped below 967 feet. Northern Lights Ethanol submitted this application to develop an alternate supply of water.

Northern Lights Ethanol has requested that the processing of the application be expedited so that the groundwater source is available as quickly as possible. If drought conditions persist into 2013, the facility may not be able to operate due to the lack of surface water from their current water supplier.

AQUIFER: Veblen

GEOLOGY AND AQUIFER CHARACTERISTICS:

The Veblen aquifer is a buried glacial outwash consisting of unconsolidated sand and gravel deposited by melt waters from receding glaciers. In eastern Grant County, the aquifer is under predominantly confined conditions. Hansen (1990) reported a portion of the aquifer is at or near land surface and under water-table conditions in T120N, R47W and the southern part of T121N, R46 and 47W. The Veblen is areally extensive into Roberts County to the north, Minnesota to the east and Deuel County to the south. Ground water movement is generally from west to east through the area. The Veblen is the source of water utilized by the proposed diversions in Section 15, T121N, R47W.

Maps of the Veblen aquifer in Grant County, as interpreted by Hansen (1990) show the extent and thickness of the Veblen aquifer in Figure 1 and the potentiometric surface in Figure 2.

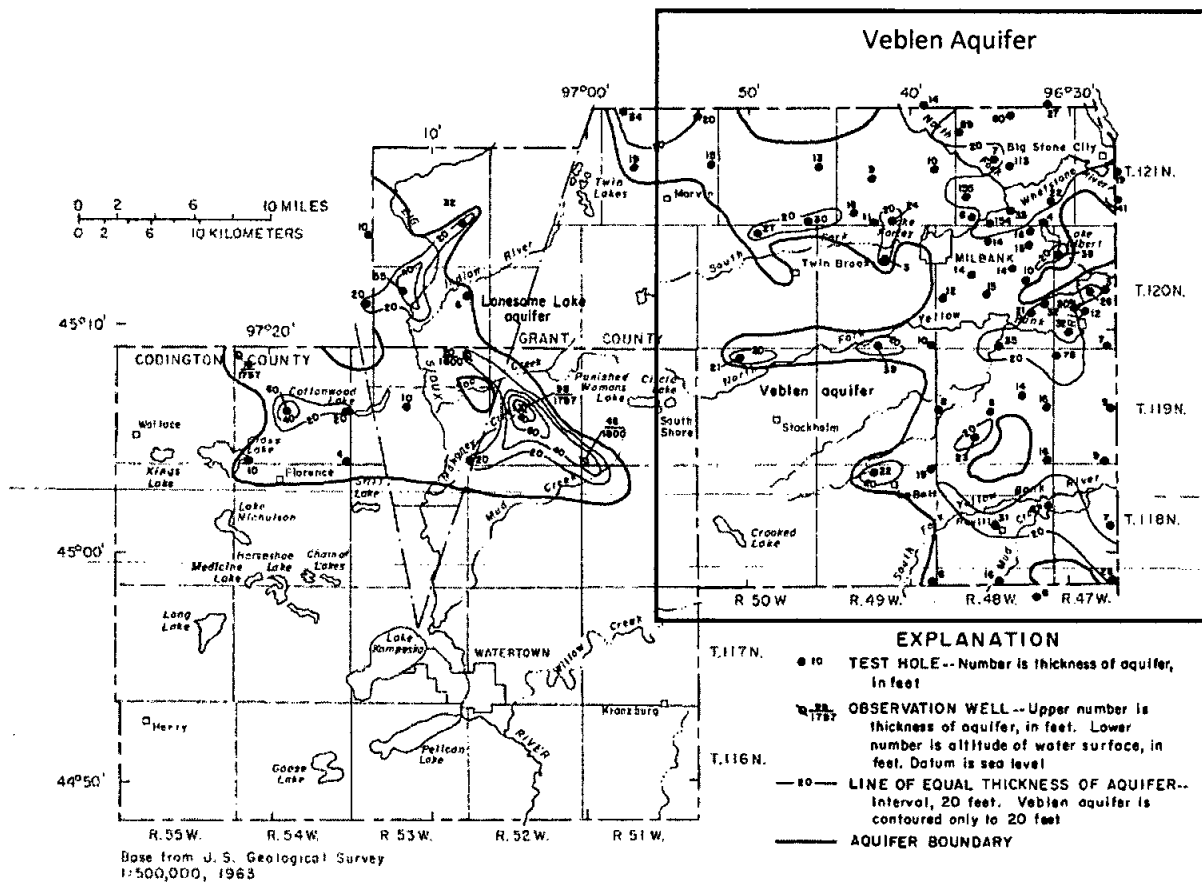


Figure 1. Extent, thickness and water-surface altitude of the Lonesome Lake and Veblen aquifers in Codington and Grant Counties, October 1985. Source: Hansen, 1990.

deposits and typically considers them hydraulically separate from shallower deposits, although the study concedes that in some locations they may be connected.

For the purpose of appropriations by South Dakota Department of Environment and Natural Resources from northern Grant County, the “Veblen” aquifer can be considered a group of outwash deposits that are found within the areal extent and interval of altitude defined by Hansen (1990). This probably includes Thompson’s Wilmot Outwash Group. The aquifer is generally under confined conditions and groundwater movement is from west to east. Individual sand and gravel units are not continuous throughout the entire mapped extent; however, interconnection between the outwash deposits is likely in places.

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued only if there is reasonable probability that there is unappropriated water available for the applicant’s proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest.

WATER AVAILABILITY:

The availability of unappropriated water in the Veblen aquifer in Grant County can be evaluated by considering SDCL 46-6-3.1. This statute requires that no application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of average estimated annual recharge to the groundwater source.

Withdrawals:

There are currently 35 Water Rights, Permits and pending applications appropriating water from the Veblen aquifer in Grant County (Water Rights, 2013). Water uses include: Industrial (two); Commercial (five); Municipal (Big Stone City, and Milbank); and Irrigation (twenty-six) which is the primary use of the aquifer. Irrigation utilization from 1979 to 2011 is shown in Table 1.

YEAR	NUMBER OF PERMITS	ANNUAL APPROPRIATION (ac-ft/yr)	REPORTED PUMPAGE (ac-ft/yr)
1979	15	6978	700
1980	15	6978	504
1981	19	8366	1062
1982	14	5962.6	704.84
1983	13	8171	793.72
1984	15	5463.6	1139
1985	15	5463.6	519.1
1986	16	6273.6	726.7
1987	16	6273.6	1030.8
1988	16	5996.6	1747.1
1989	18	6800.6	1222.9
1990	17	6451	1242.4
1991	20	7143	186.8
1992	17	6733	522.8
1993	17	6803	136.1
1994	17	6796.5	573.99
1995	15	6480	370.47
1996	14	5660	588.86
1997	14	5660	603
1998	15	6080	724.57
1999	16	6293	762.14
2000	16	6293	878.33
2001	16	6293	1039.06
2002	16	6293	952.03
2003	16	6293	1172.46
2004	16	6293	1089.12
2005	15	6213	1128.87
2006	15	6213	1275.2
2007	15	6213	1156.63
2008	19	7671	1238.45
2009	19	7671	1014.37
2010	19	7671	1037.5
2011	20	7760	261.71
Maximum	20	8366	1747.1
Minimum	13	5464	136.1
Average	16	6597	851.67

Table 1. Irrigation Utilization of the Veblen aquifer in Grant County.

Between 1979 through 2011 the average appropriations for irrigation from the Veblen aquifer in Grant County was 6,597 acre-feet annually. The average annual pumpage reported from the aquifer for irrigation during that time period was 851.67 acre-feet or 13% of appropriations. The current appropriations for irrigation total 8,048 acre-feet. In addition, three pending applications that are senior in priority to this application add another potential 574 acre-feet, for a total of 8,622 acre-feet. Future average annual pumpage from these water appropriations and pending applications should average about 1,120 acre-feet.

The municipal use appropriations total 3,909 acre-feet for the City of Big Stone City and the City of Milbank. The commercial use appropriations total 649 acre-feet. The industrial use appropriations total 4,779 acre-feet. Permit No. 6846-3 was issued in 2007 for Otter Tail Power Company as a backup supply of water during the proposed expansion of Big Stone Power Plant. There has been no construction of the proposed industrial diversion works and the cancellation of this permit will be considered by the Water Management Board at the March, 2013 meeting. Without the appropriations under Permit No. 6846-3, 79 acre-feet is appropriated for industrial use. The water appropriations and pending applications for the Veblen aquifer in Grant County are provided in Table 2.

Estimating municipal use as 60% of the maximum allowable, which is considered reasonable for water distribution systems, annual groundwater withdrawals from the Veblen aquifer in Grant County are estimated at 4,193 acre-feet per year. (1,120 for irrigation, 2,345 for municipal, 649 for commercial and 79 for industrial)

This application proposes to appropriate up to 2,000 acre-feet per year. The Veblen groundwater source will be used as an alternate supply to Northern Lights Ethanol's current water supply, which is provided by Big Stone Power Plant (operated by Otter Tail Power Company). Otter Tail Power Company holds several surface water rights for water from Big Stone Lake. Water will be used for the existing corn ethanol facility. In addition, water is requested for a potential cellulosic ethanol expansion at the site.

Permit No.	Name	Priority	Use	CFS	Irrigated Acres
WATER RIGHTS					
548-3	City of Milbank	1/1/1924	Municipal	2.1	
1939-3	Trapp, Kathleen A	4/13/1972	Irrigation	1	71
5469-3	Johnson, Michael	4/29/1976	Irrigation	2	230
2759-3	Liebe Irrigation	6/9/1976	Irrigation	2.23	198
2808-3	Trapp, Duane	6/29/1976	Irrigation	2	140
2994-3	Folk, Anthony G	9/9/1976	Irrigation	1.39	97
3133-3	Kruger, David	10/12/1976	Irrigation	2.01	260
3134-3	Kruger, David	10/12/1976	Irrigation	1.78	230
3234A-3	Johnson, Michael D	11/8/1976	Irrigation	2	116
3234B-3	Adler, Joel	11/8/1976	Irrigation	0	120
3412A-3	Johnson, Dana	12/10/1976	Irrigation	0.64	72
3412B-3	Rethke, Mark & Niki	12/10/1976	Irrigation	0.69	77
3627-3	Grorud, James Teresa	2/7/1977	Irrigation	1.94	136
3723-3	Rocky Meadows Inc.	2/14/1977	Irrigation	1.11	164
3954-3	McCullough, Roger	5/5/1977	Irrigation	2.11	176
4050-3	City of Big Stone City	7/5/1977	Municipal	3.3	
4084A-3	Will, Richard	6/20/1977	Irrigation	1	254
4502-3	Rocky Gardens	3/10/1980	Irrigation	0.17	40
4735-3	Johnson, Michael D	4/2/1981	Irrigation	1	74
4856-3	Johnson, Michael D	1/8/1982	Irrigation	1	70
5525-3	Mielitz Brothers	3/7/1991	Irrigation	1.78	140
5918-3	Victory Farms	3/19/1996	Commercial	0.33	
6161-3	Lou's Greenhouse	12/28/1999	Commercial	0.044	
6171-3	Cold Spring Granite Co.	1/18/2000	Industrial	0.111	
6230-3	Riverview LLP	9/20/2000	Commercial	0.39	
6358-3	Johnson, Michael & Nancy	8/6/2002	Commercial	0.11	
6636-3	Western Consolidated Coop	7/6/2005	Commercial	0.022	
PERMITS					
6846-3*	Otter Tail Power Company	3/29/2007	Industrial	13.81	
6947-3	Adler, Joel	1/10/2008	Irrigation	1.71	0
7216-3	Mielitz Brothers	10/6/2010	Irrigation	2.28	160
7439-3	Mielitz Brothers	9/19/2012	Irrigation	1.14	80
7446-3	Tuchscherer, Dale	9/25/2012	Irrigation	1.78	64
PENDING APPLICATIONS					
7498-3	Dale Tuchscherer		Irrigation	1.78	116
7529-3	Rusty Dimberg		Irrigation	0.89	36
7541-3	Roger Schuelke		Irrigation	2	135

*Permit 6846-3 is currently being considered for cancellation.

Table 2. Water Rights/Permits/Pending Applications shown in Figure 4.

Recharge:

Recharge to the Veblen aquifer in Grant County is by direct infiltration and subsequent percolation of rainfall and snowmelt where the aquifer is at land surface (Hansen, 1990). Recharge can also occur by leakage through the till. The Veblen aquifer underlies 260 square miles (166,400 acres) and contains an estimated 700,000 acre feet of water in storage in Grant County (Hansen, 1990).

Average annual recharge has not been quantified for the glacial aquifers of Grant County. Hedges (1983) used multiple methods to estimate recharge to aquifers in eastern South Dakota. The range from different methods of estimating the recharge to confined aquifers was 0.24 to 0.83 inches per year. However, he concluded for management and development programs the minimum recharge rate to confined aquifers is estimated to be 0.15 inches per year and the maximum rate is 0.60 inches per year. (Hedges, 1983). Hedges recognized that recharge rates will be higher where confined aquifers encounter unconfined conditions and that such conditions be evaluated separately.

Assuming average annual withdrawals from the Veblen aquifer in Grant County will equal the maximum proposed by this application plus the average of existing users with earlier priorities (2,000 acre-feet/year + 4,193 acre-feet/year = 6,193 acre-feet/year), an average annual recharge rate of 0.45 inches per year would be needed to balance withdrawals. An annual recharge rate of 0.45 inches per year is within the ranges of Hedges (1983) estimated recharge rates for confined aquifers.

Therefore, there is reasonable probability that average annual withdrawals will not exceed average annual recharge for this area and unappropriated water is available for this proposed appropriation.

Observation Well Data:

The best information available to evaluate development, as it relates to recharge, is historical records and data from observation wells. The difference between withdrawal from an aquifer and recharge is reflected by the water level of the aquifer. If the water level of an aquifer continues to decline, it may suggest that withdrawals exceed recharge. The Water Rights Program monitors 34 observation wells completed into the Veblen aquifer (Water Rights, 2013). Three wells are located in Marshall County, sixteen are located in Roberts County and fifteen observation wells are located in Grant County, including Observation Well GT-77N which is located within one quarter mile of the proposed well locations. A hydrograph for Observation Well GT-77N is shown in Figure 3. Over the period of record, well withdrawals are masked by precipitation and natural discharge from the aquifer.

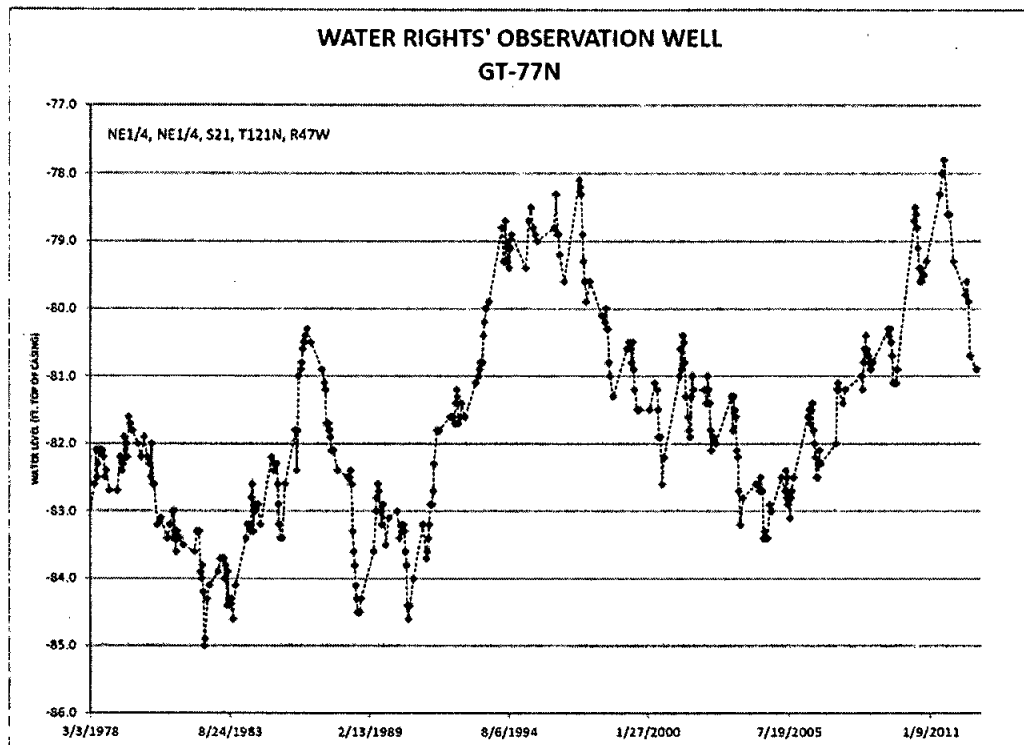


Figure 3. Hydrograph of observation well completed into the Veblen aquifer approximately one quarter mile southwest of the wells this application proposes to use. Readings are from top of well casing.

Additional hydrographs for other observation wells completed in the Veblen aquifer within Grant County are attached to this report. Water levels for these wells clearly fluctuate with climatic conditions, that is, rising water levels due to wet years (recharge) and gradually declining water levels during dry years. The observation well data indicates the aquifer is capable of sustaining additional withdrawals and there is unappropriated water available to support this appropriation.

REVIEW OF EXISTING WATER RIGHTS/PERMITS/APPLICATION:

Table 2 lists the existing water rights, permits and pending applications from the Veblen aquifer in Grant County with priorities earlier than this application. Twenty seven water rights, five permits and three pending applications are listed in Table 2 (Water Rights, 2013). The location of each is mapped in Figure 4.

There are six water rights, one permit and one pending application within the vicinity of the wells that this application proposes to use. Water Right No. 1939-3 diverts water from a gravel pit and Water Right No. 2808-3 diverts water from an 18 foot deep dugout, (these diversions may not be considered

adequate wells as defined by ARSD 74:02:04:20(6)). Three water rights, one permit and one pending application are/will be completed in the surficial deposits. Water Right No. 2994-3 diverts from a well 49 feet deep. Water Right No. 3954-3 diverts from a well 50 feet deep in an area where there is 26 feet of glacial till between the surficial deposit and the lower outwash. Water Right No. 4502-3 diverts from a well 27 feet deep. Water Permit No. 7446-3 is proposing a well of 38 feet deep, and Pending Application No. 7498-3 is proposing a well of 36 feet deep. It is not likely that the water rights supplied by the surficial outwash will be affected by wells proposed by this application.

Water Right No. 2759-3 pumps 1000 gallons per minute from a well 154 feet deep with a static water level of 45 feet and is located approximately 2.5 miles from the proposed wells. The Grant County Veblen aquifer is predominantly under confined conditions so the potential for interference between wells exists and drawdown could occur over a fairly large area. The distance between this proposed diversion and the existing well will minimize the potential for well interference.

There are no domestic wells identified in DENR records. The well logs provided with the application indicate that over 50 feet of clays are present between the surficial outwash and the lower outwash. Domestic wells that may be completed in the surficial outwash are not expected to be affected by the proposed diversion. Domestic wells that penetrate the lower outwash are expected to locate the pump at least 20 feet below the water table. The impact of this appropriation cannot be precisely predicted. In spite of the lack of a precise prediction of the impact of this appropriation, it is still possible to address whether this appropriation can be made without adversely affecting water rights including domestic wells. Water Management Board rules 74:02:04 and 74:02:05, which were promulgated pursuant to SDCL 46-6-6.1, provide protection to prior appropriators only to the degree necessary to maintain an adequate depth of water in wells that have the ability to produce water independent of artesian pressure.

Simply put, the pressure of a prior appropriator's well or even the well's pump placement is not necessarily protected. In fact, in past action, the Water Management Board has concluded that if increased cost or decreased production is considered an adverse impact, it could be in conflict with SDCL 46-1-4, which requires South Dakota's water resources to be put to beneficial use to the fullest extent of which they are capable. Therefore, the appropriation proposed by this application is not expected to adversely impact existing wells.

PUBLIC INTEREST:

This application is being requested as an alternative source of water for Northern Lights Ethanol because their current and only water supply is drought vulnerable. Area farmers that provide corn to Northern Lights Ethanol, employees and support businesses will benefit from the facility's ability to obtain groundwater from the Veblen aquifer in the event their surface water supply is unavailable.

CONCLUSIONS:

1. The Veblen is a viable aquifer in this area.
2. The Veblen aquifer is under predominantly confined conditions at this well site.
3. There is a reasonable probability that unappropriated water is available for this appropriation.
4. Existing water rights are not expected to be unlawfully impaired if this application is approved.
5. It is in the public interest to approve an alternate supply of water for Northern Lights Ethanol, LLC, as their current and only source of water is drought vulnerable.



Iona J. Branscum, P.E.

Senior Environmental Engineer

POET Design & Construction

4615 N. Lewis Ave.

Sioux Falls, SD 57104

REFERENCES:

Barr Engineering Company, 2007, Groundwater Supply Evaluation, Big Stone II Project, Grant County, South Dakota; Prepared for Otter Tail Power Company.

Hansen, D. S., 1990, *Water Resources of Codington and Grant Counties, South Dakota*, Water-Resources Investigations Report 89-4147, USGS, Huron, South Dakota.

Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., and Schoon, R.A., 1982, *Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa*: SD DENR-Geological Survey, U.S. Army Corps of Engineers Contract DAWC 45-80-C-0185

Hedges, L.S., Allen, J., Holly, D.E., 1983, *Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge*: SD DENR-Geological Survey, U.S. Army Corps of Engineers Contract DAWC 45-80-C-0185

Thompson, R.F., 2001, *Water Resources of the Lake Traverse Reservation, South and North Dakota, and Roberts County, South Dakota*: U.S. Geological Survey Water-Resources Investigation Report 01-4219.

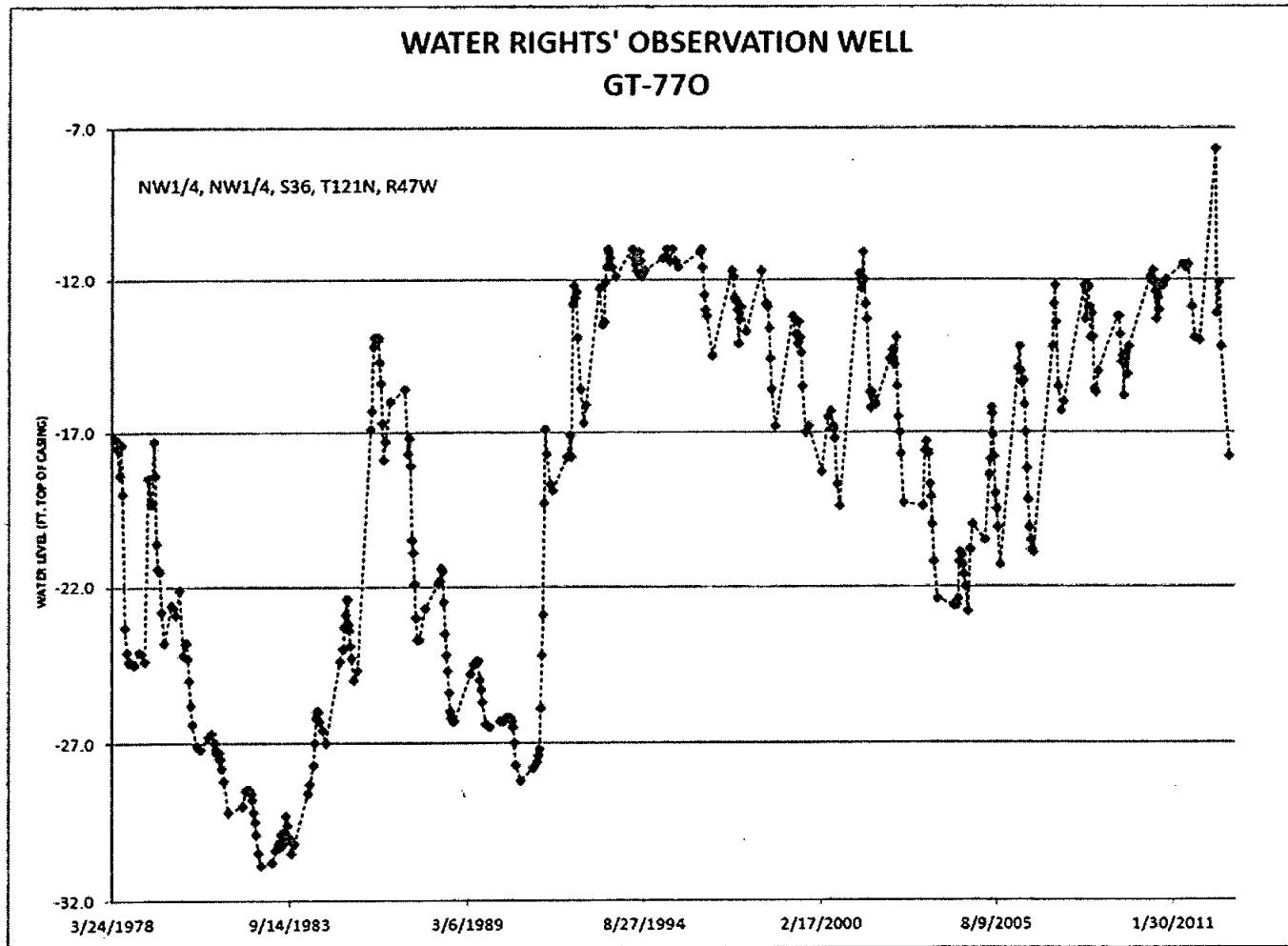
Water Rights Program, 2013, Water Right/Permit Files, DENR – Water Rights Program, Joe Foss Building, Pierre, SD 57501.

Water Rights Program, 2013, Observation Well Files, DENR – Water Rights Program, Joe Foss Building, Pierre, SD 57501.

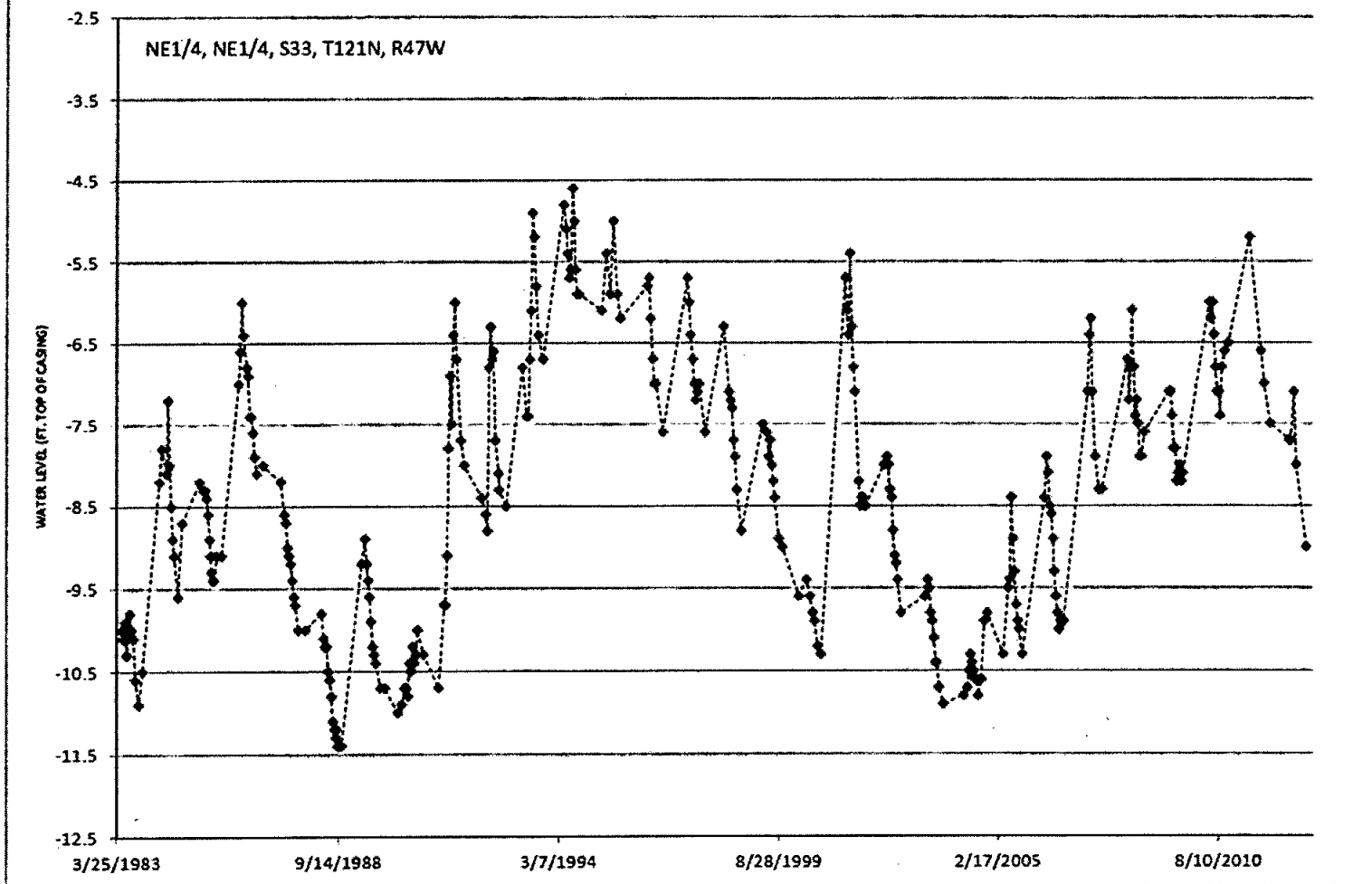
Water Rights' Observation Wells in Veblen Aquifer, Grant County

January, 2013

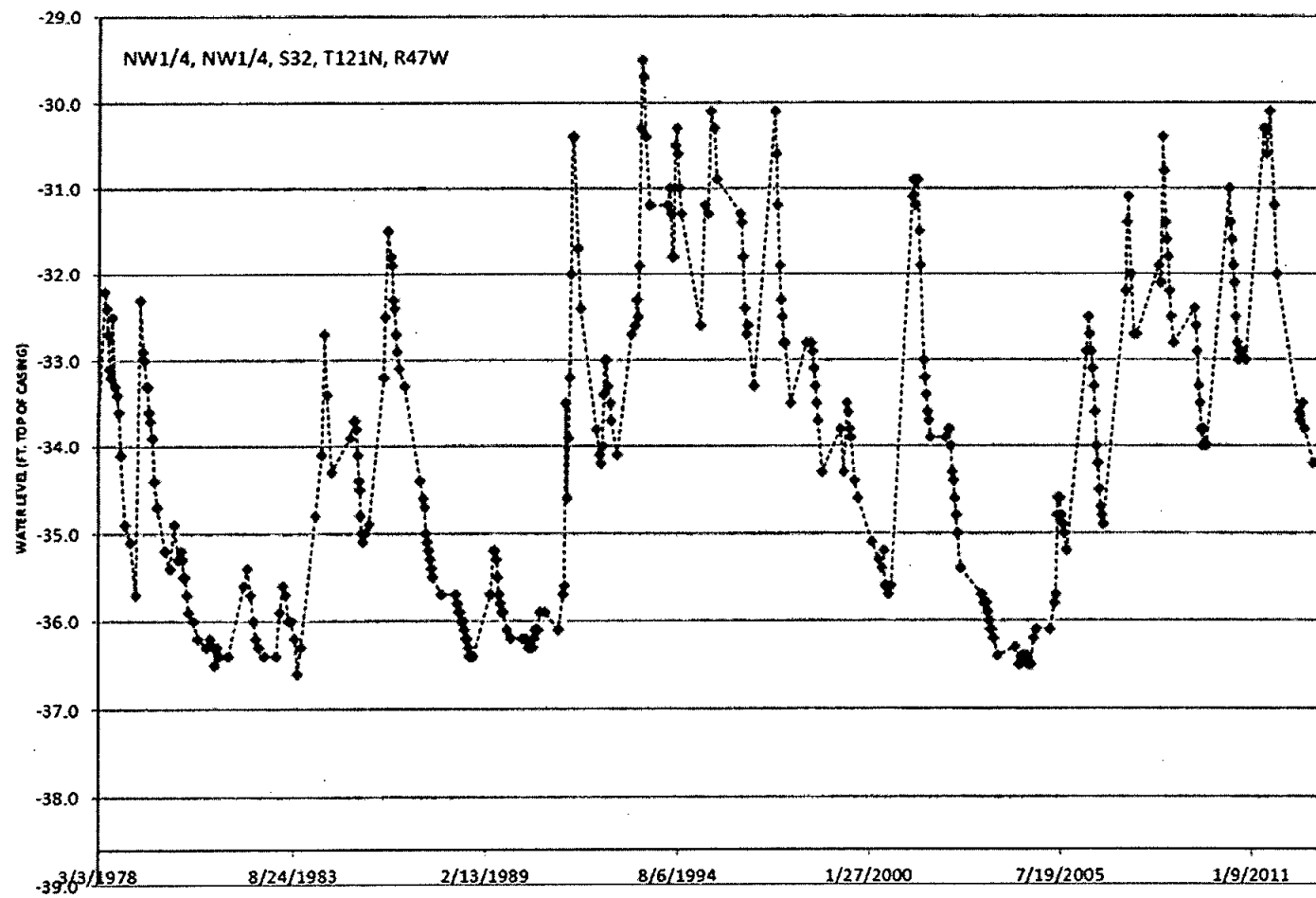
Hydrograph of fourteen additional observation wells completed into the Veblen aquifer in Grant County, South Dakota. Readings are from top of well casing.



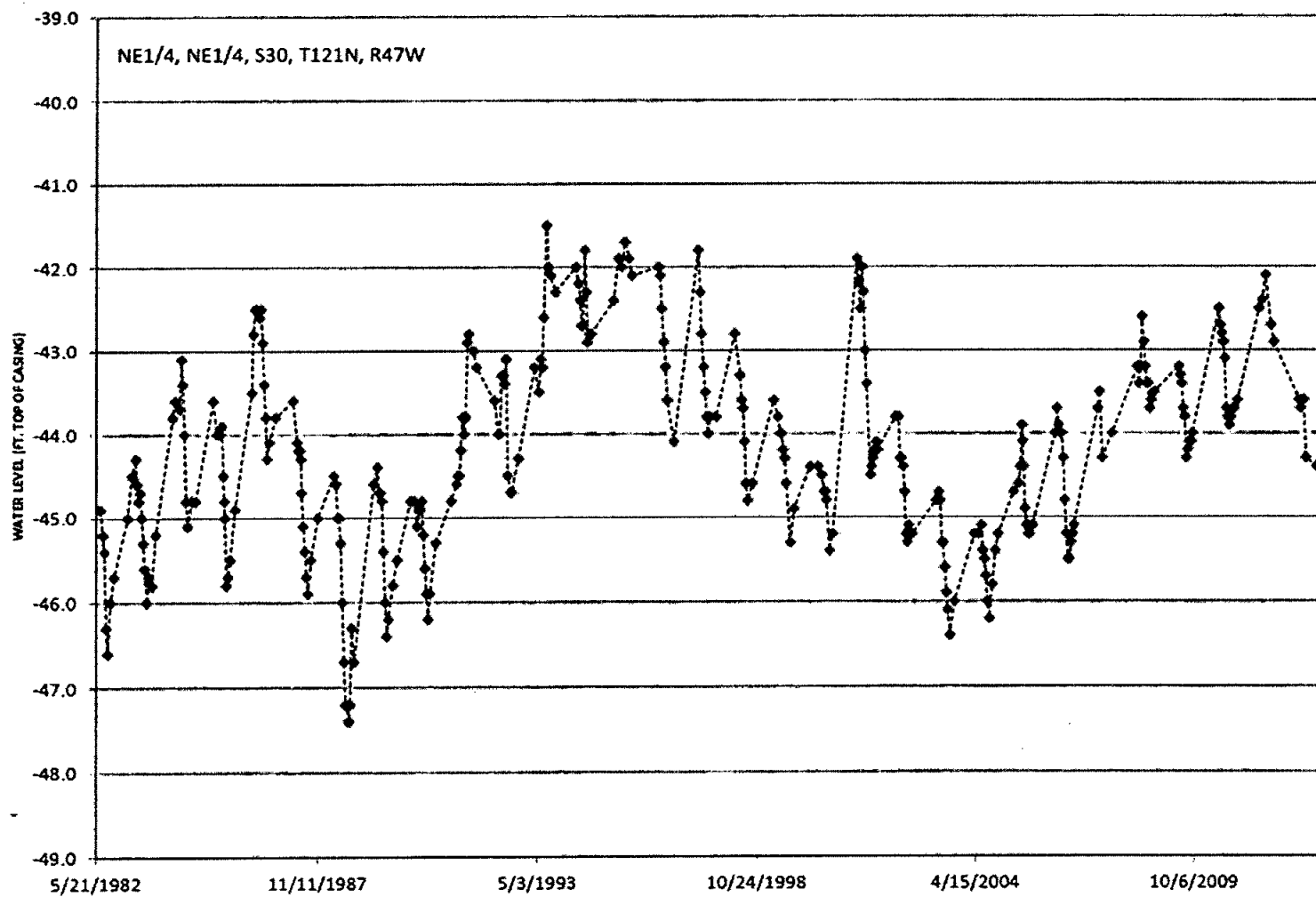
WATER RIGHTS' OBSERVATION WELL GT-83A



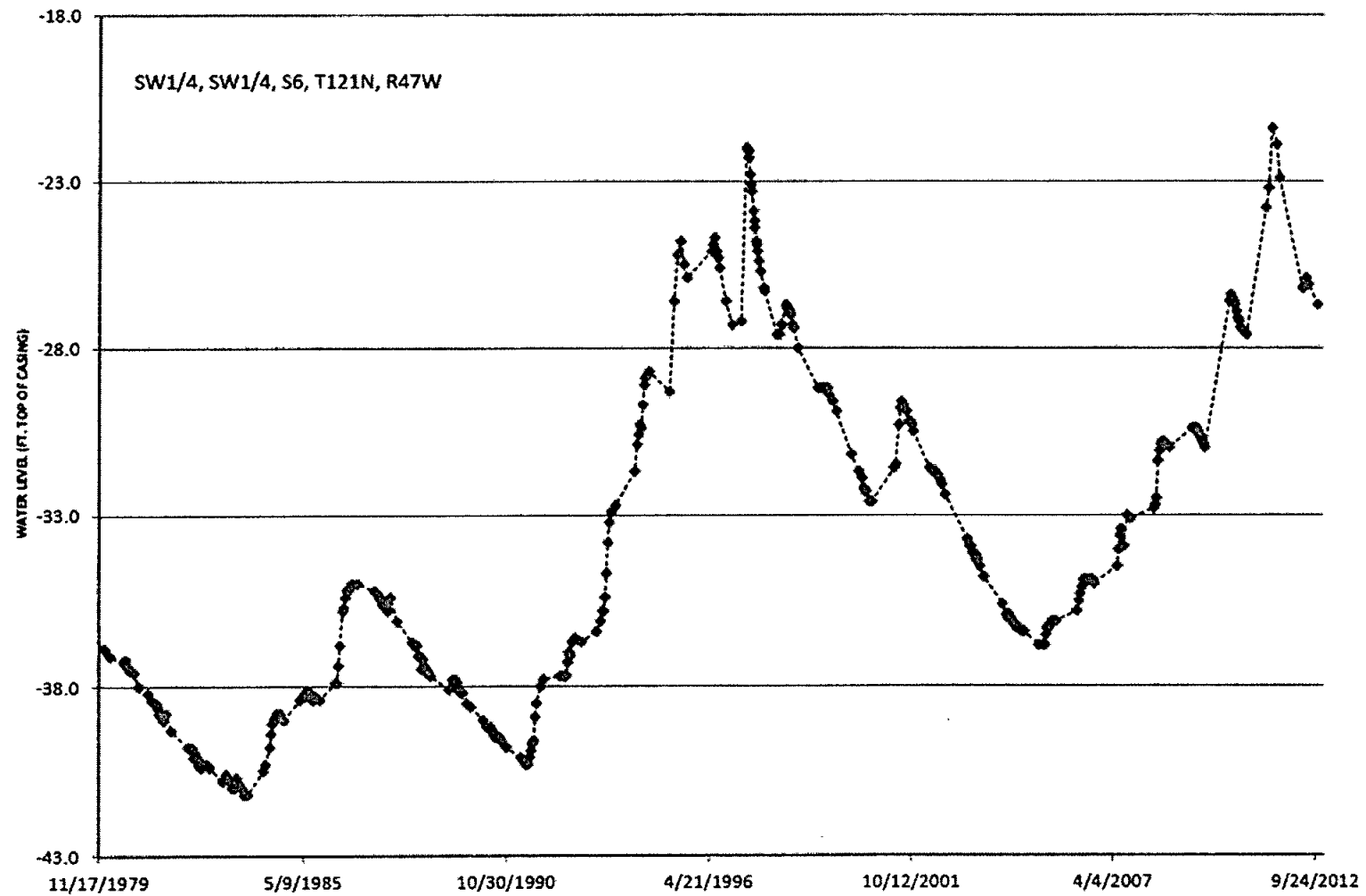
WATER RIGHTS' OBSERVATION WELL GT-77M



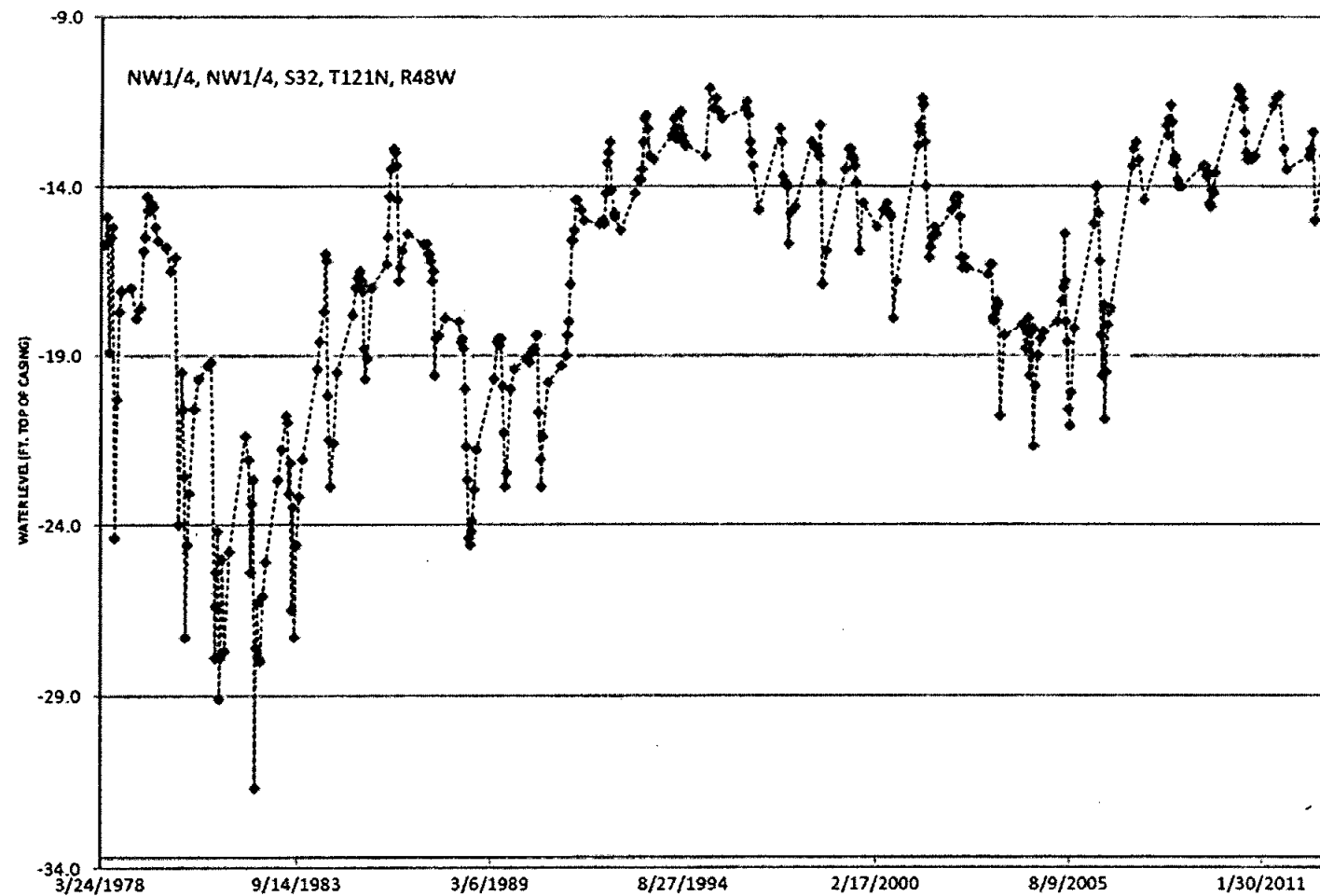
WATER RIGHTS' OBSERVATION WELL GT-82B



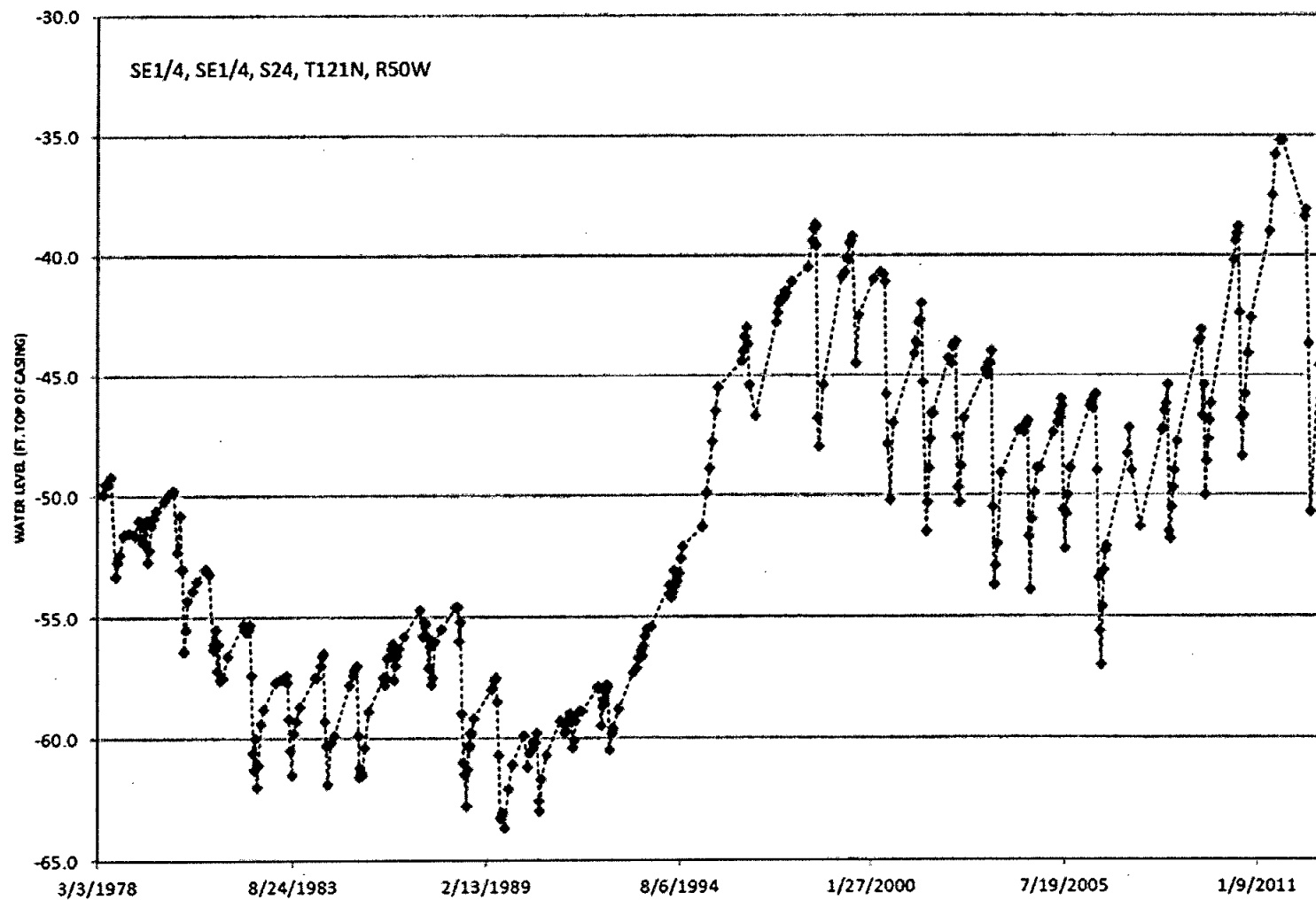
WATER RIGHTS' OBSERVATION WELL GT-79E



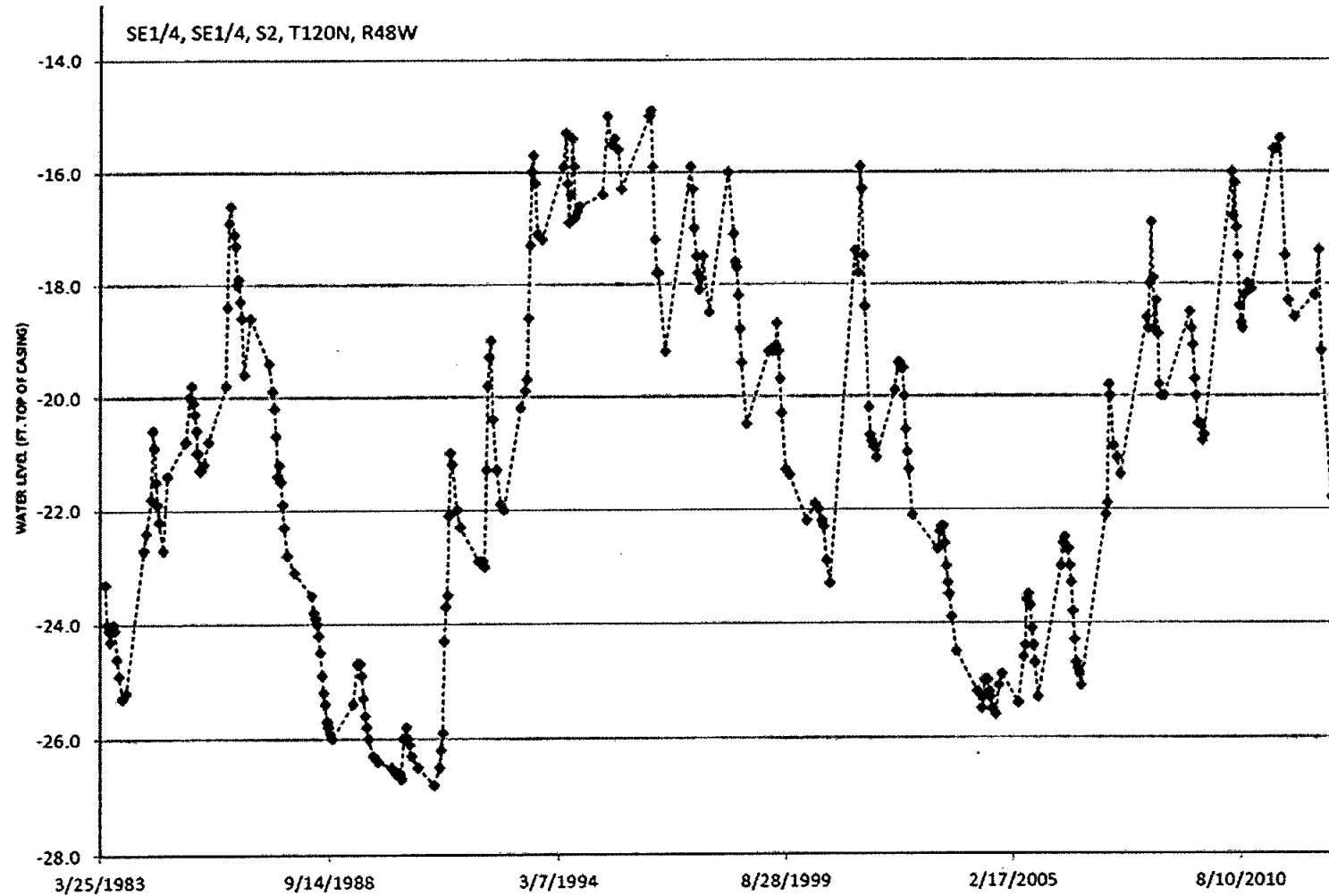
WATER RIGHTS' OBSERVATION WELL GT-77L



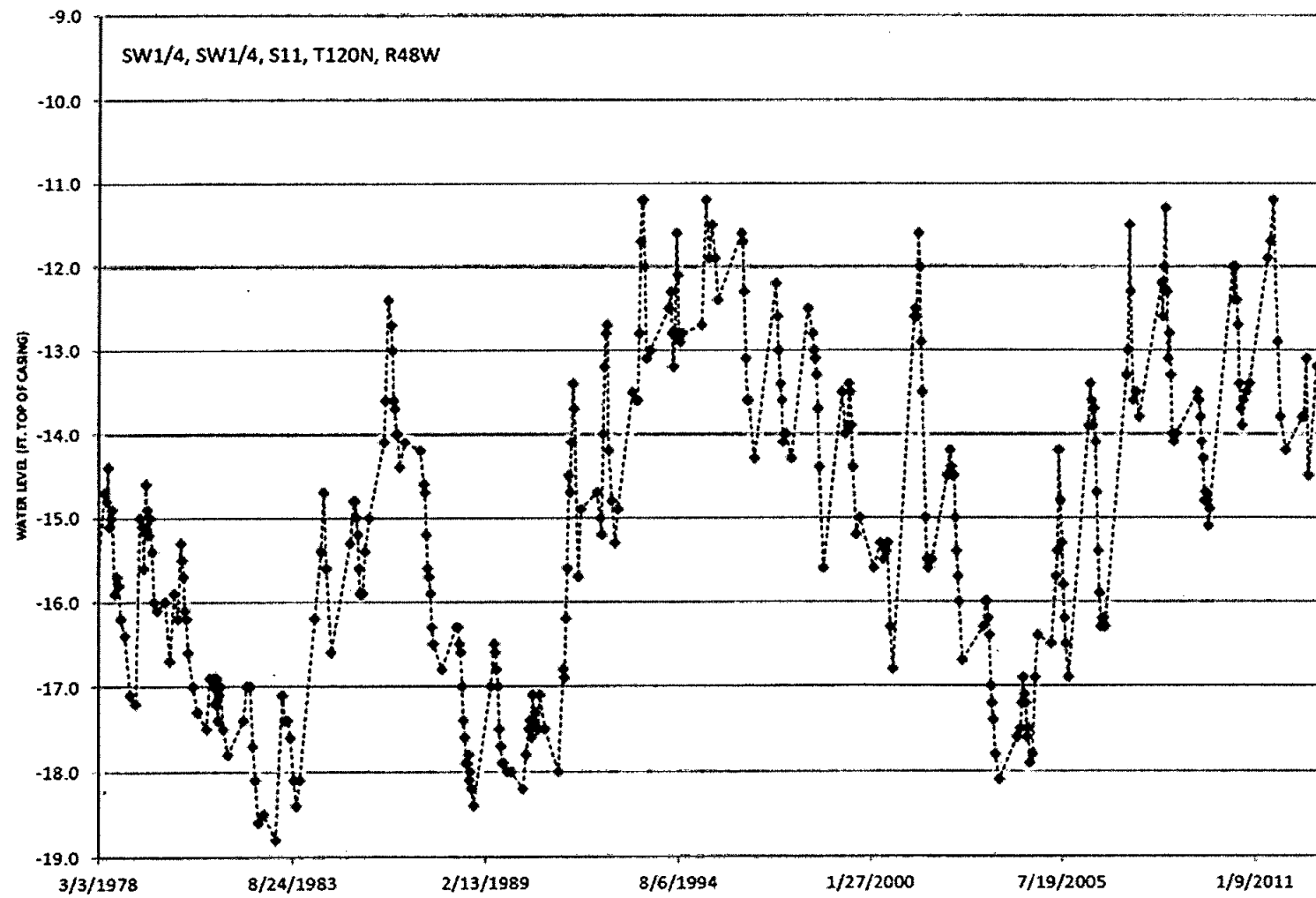
WATER RIGHTS' OBSERVATION WELL GT-77H



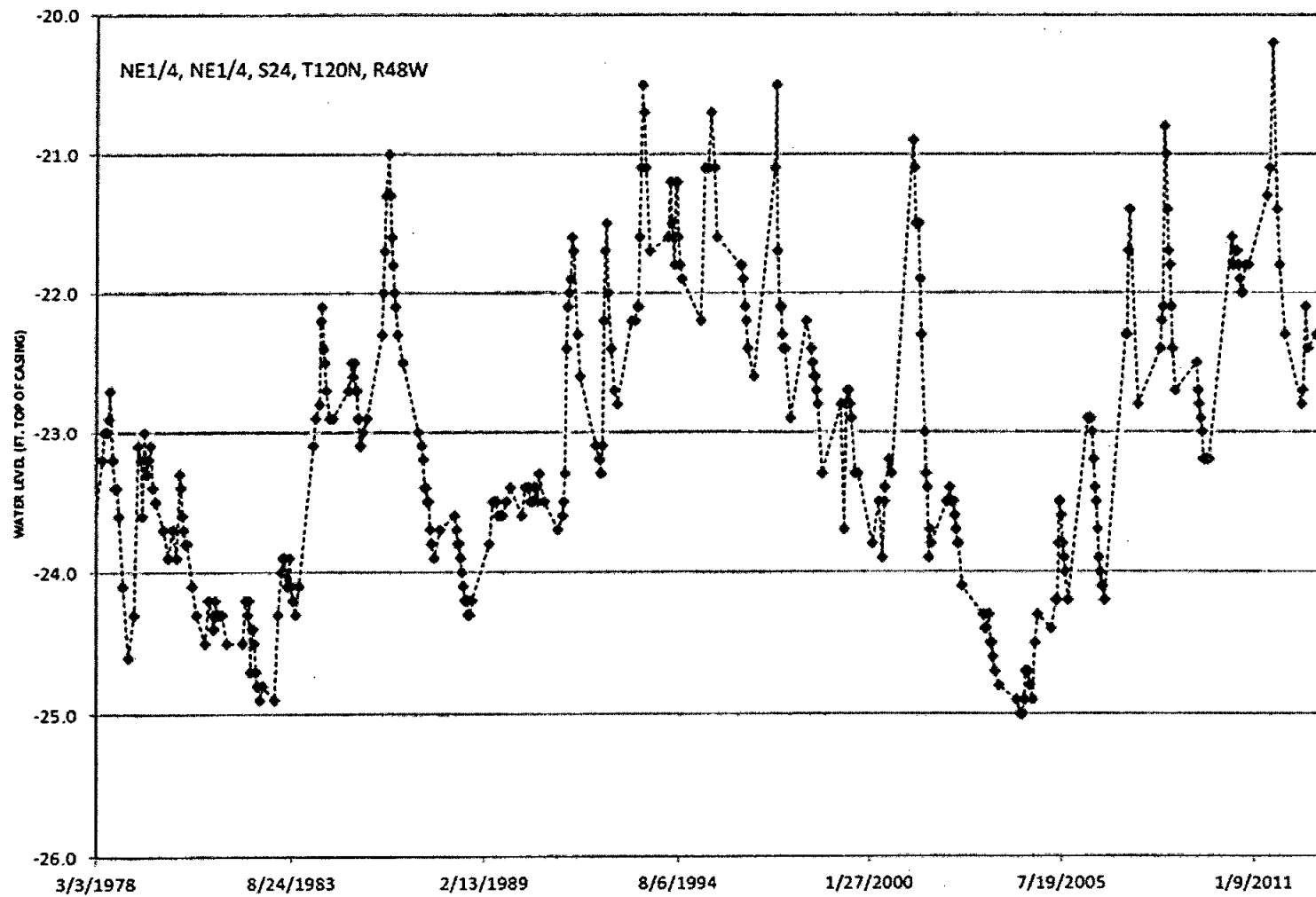
WATER RIGHTS' OBSERVATION WELL GT-83B



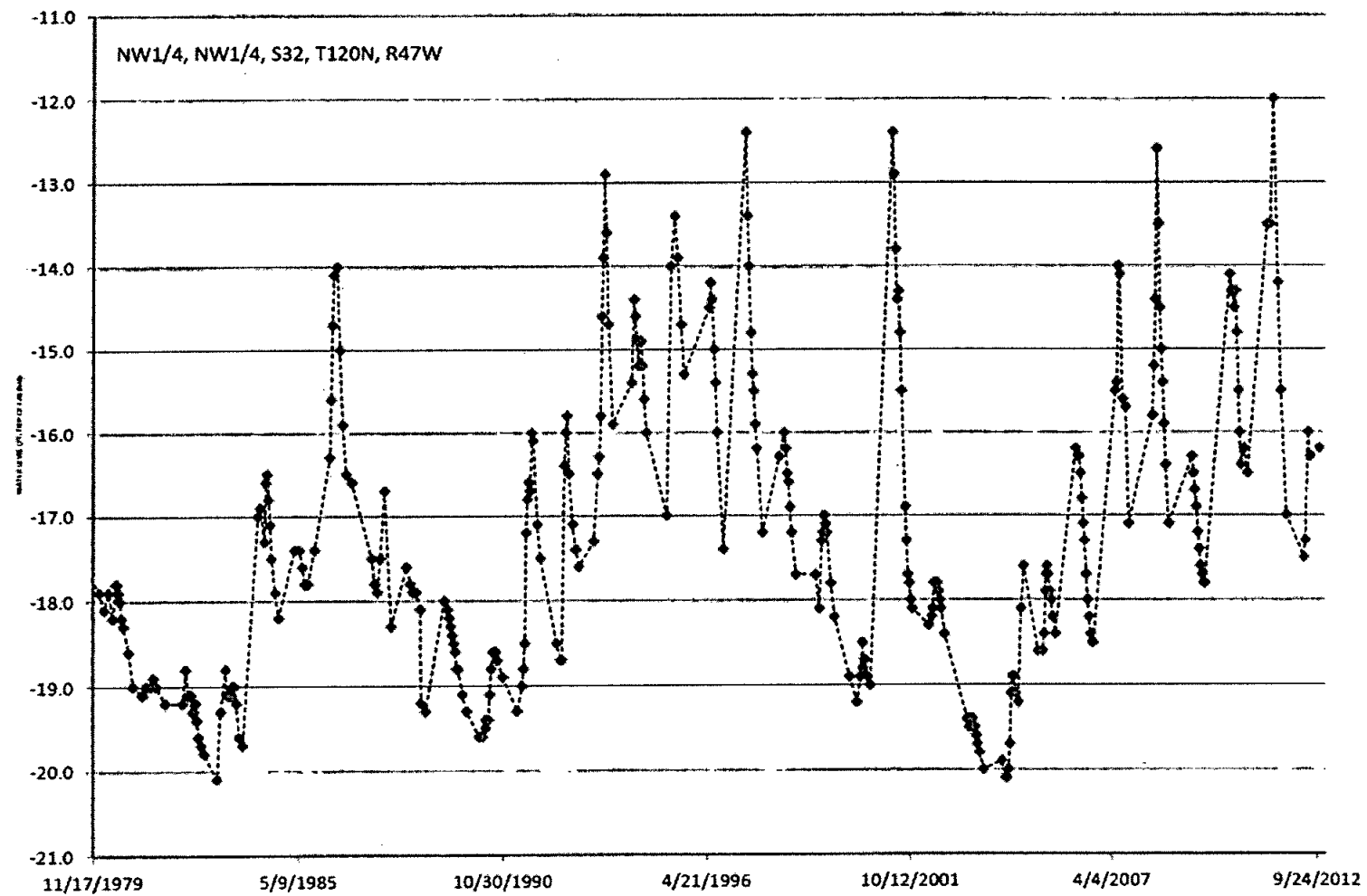
WATER RIGHTS' OBSERVATION WELL GT-77P



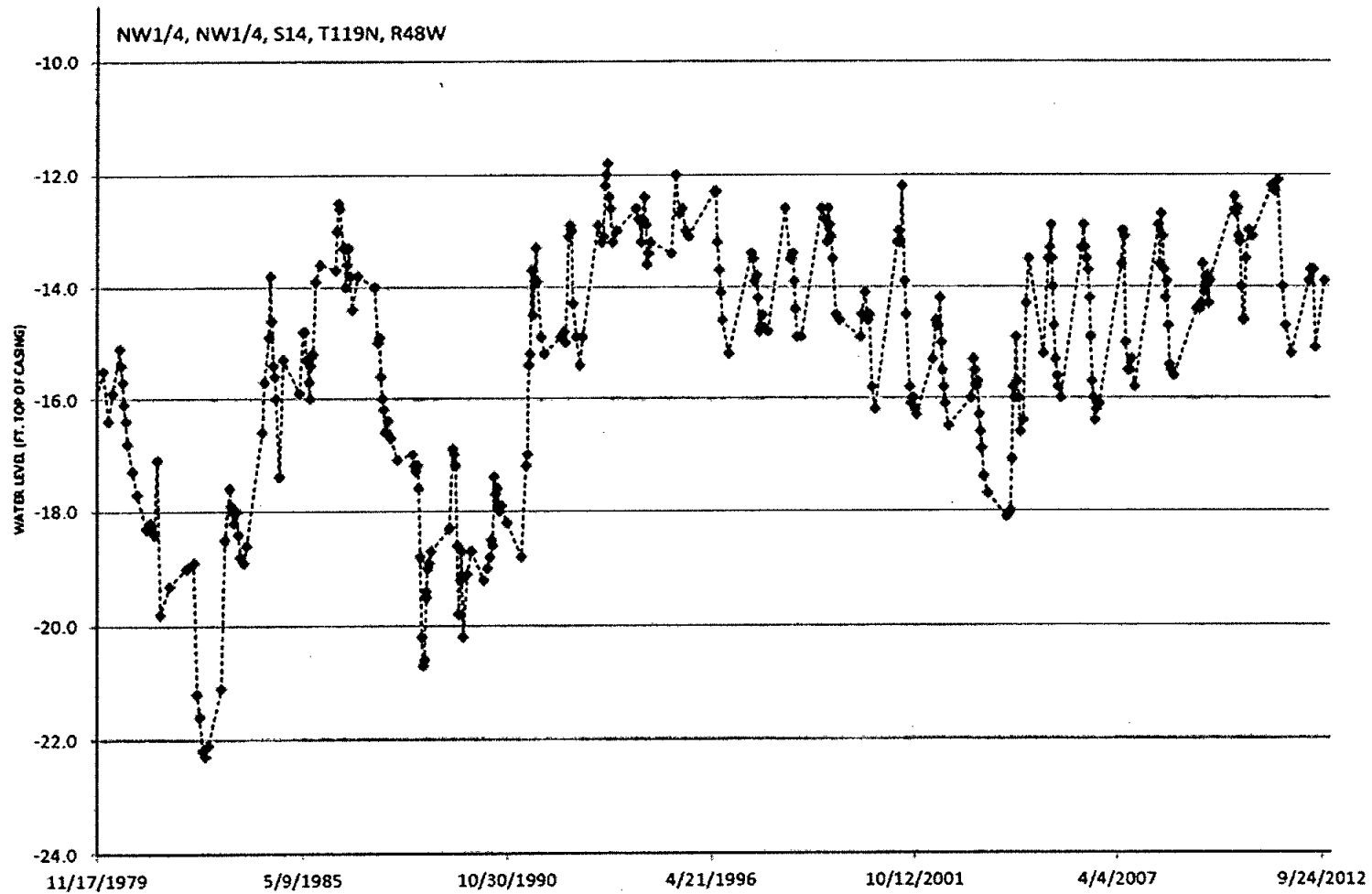
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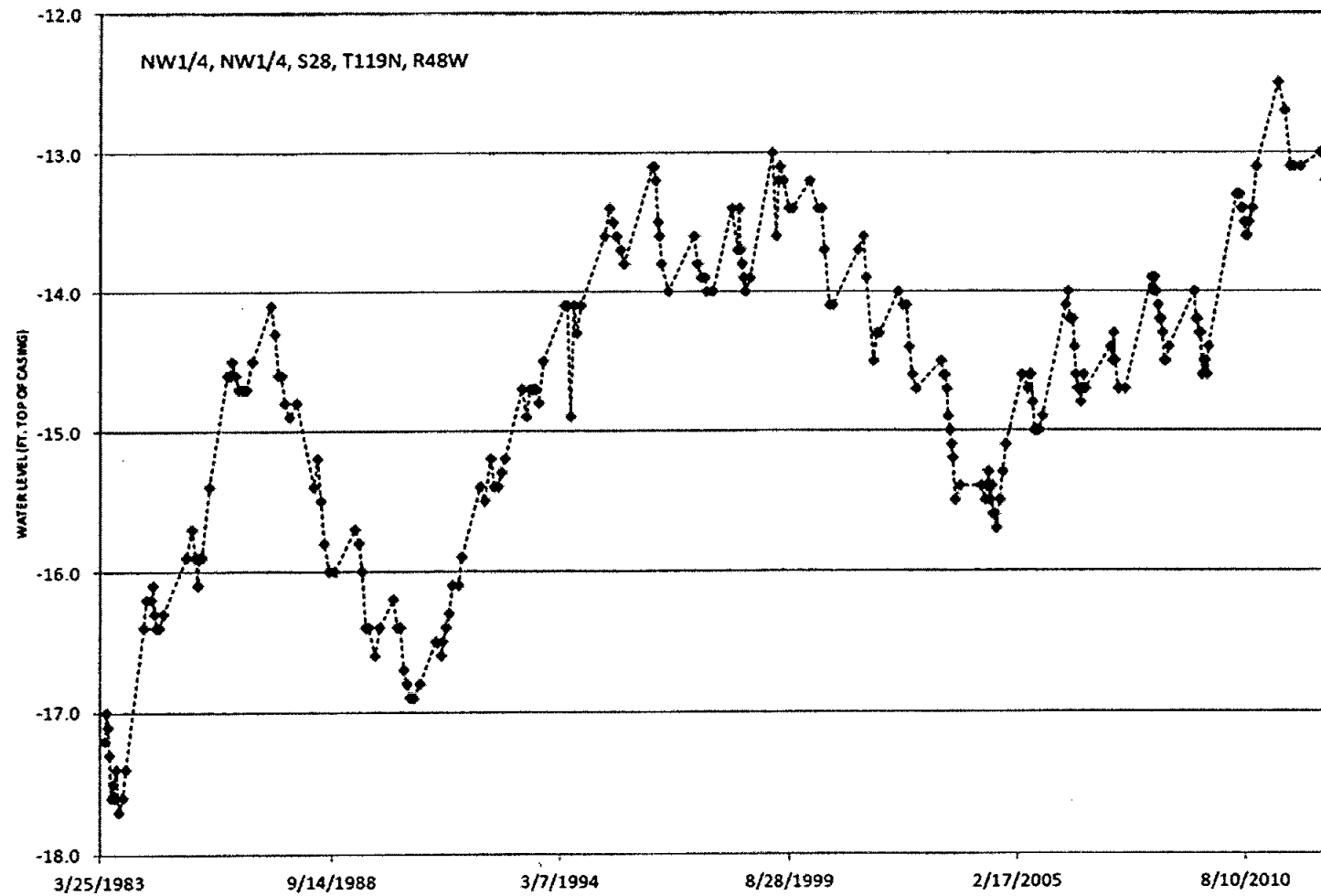
WATER RIGHTS' OBSERVATION WELL GT-79F



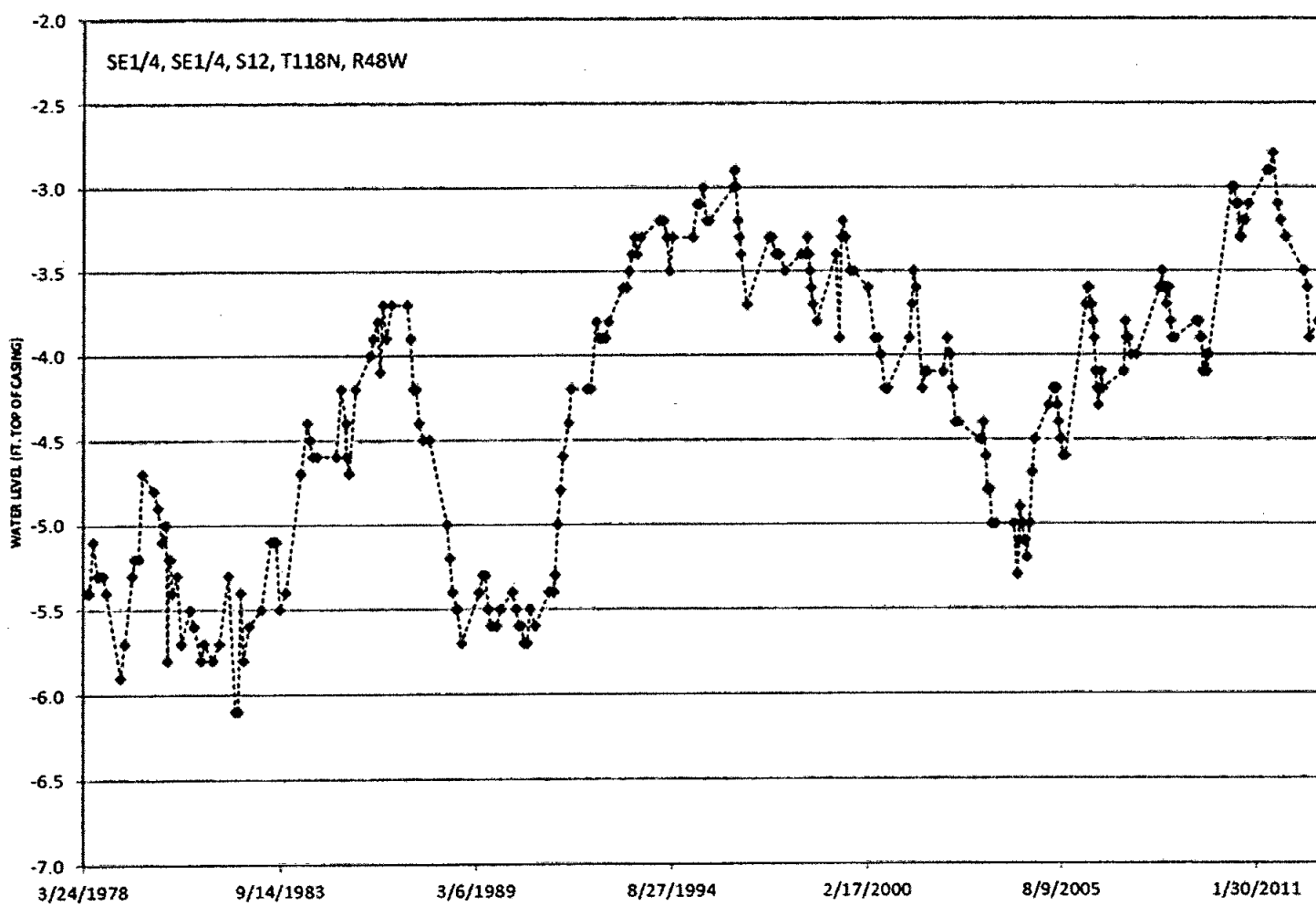
WATER RIGHTS' OBSERVATION WELL GT-79G



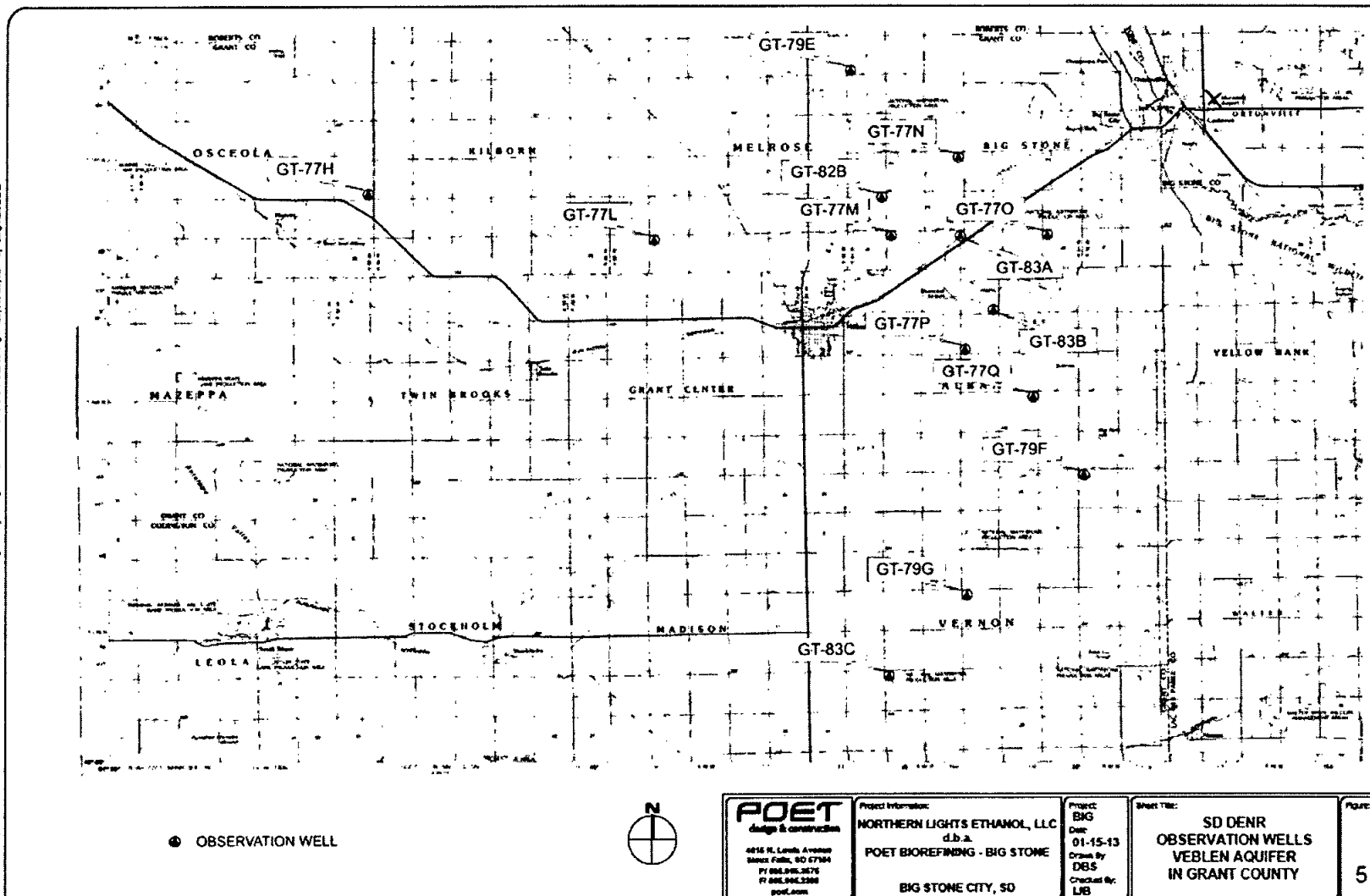
WATER RIGHTS' OBSERVATION WELL GT-83C



WATER RIGHTS' OBSERVATION WELL GT-77R



Plot Date: January 31, 2013 Plot Time: 11:48:57 AM Plot Name: J:\Shared\mxd\BIO - Big Stone - Drawings\CHW\ObservationWells\BIO C-Well.dwg Layout: Layout1 By: Benjamin Davis



● OBSERVATION WELL



POET
design & construction
4616 N. Lewis Avenue
Sioux Falls, SD 57104
P: 605.946.3575
F: 605.946.2308
poet.com

Project Information:
NORTHERN LIGHTS ETHANOL, LLC
d.b.a.
POET BIOREFINING - BIG STONE

BIG STONE CITY, SD

Project:
BIG
Date:
01-15-13
Drawn By:
DBS
Checked By:
LJB

Sheet Title:
**SD DENR
OBSERVATION WELLS
VEBLEN AQUIFER
IN GRANT COUNTY**

Page:
5

Gronlund, Eric

From: Gronlund, Eric
Sent: Thursday, August 20, 2015 2:11 PM
To: 'Branscum, Iona'
Subject: RE: Water permit No. 7649-3 - Northern Lights Ethanol - request for an extension

Iona:

DENR received Poet's request for an extension of the September 7, 2015 date to have one-fifth of the construction completed under Water Permit No. 7649-3.

One-fifth of construction is set forth in SDCL 46-5-25 for diligent prosecution of construction works. It applies in a situation where another application is filed for the use of water included in the issued permit. DENR views this as a situation where the fact that the existing permit (No. 7649-3) being in place prevents someone else from obtaining a permit (example – there is not unappropriated water available due to the existence of Permit No. 7649-3).

Under SDCL 46-5-25, there is the ability to obtain an extension of time on the one-fifth of construction but only for the time during which work was prevented by the operation of law beyond the power of the applicant to avoid. I am uncertain that the basis stated in your email meets the "operation of law" criteria. There is a separate statute for an extension of time specific to completion of construction or application to beneficial use (SDCL 46-5-26). In that situation, the criteria for granting an extension is broader to include physical or engineering difficulties, operation of law or exigent circumstance but this only applies to the completion of construction and placement of water to beneficial use as set for this SDCL 46-2A-8.

If Poet has completed one of the four authorized wells, Poet could assert they have met the criteria for one-fifth of the construction. I recognize Well No. 1 is not within the legal description stated on the Permit No. 7649-3. However, there is the ability for Poet to request a change or additional diversion point location under SDCL 46-5-13.1. This is an administrative review to determine if a finding can be made that the change does not increase the potential for interference with existing diversions. If that finding can be made the change/addition is authorized by the Chief Engineer without formal application or public notice.

If Poet desires to pursue an extension of time of the one-fifth of construction, DENR believes this requires a formal application, review and public notice. The application would need to include the "operation of law" that prevented the diligent prosecution of construction works and the period of time this "operation of law" prevented construction works. If Poet wants to request a change or additional diversion point to Permit No. 7649-3, a request needs to be made stating the diversion is from the same source of water, no additional water is appropriated, provide well construction and a map showing the location of Well No 1 (and the location on the permit that is no longer being pursued).

Below are the applicable statutes for your review. I hope this information is helpful.

Eric Gronlund PE
 Water Rights Program, DENR
 605 773-3352
Eric.gronlund@state.sd.us

46-2A-8. Time for completion of construction and use of water--Application for lesser amount of water or variance in periods of use. Any construction necessary to put the water to beneficial use shall be completed within five years of approval of the permit and the water shall be put to beneficial use within an additional four years. The Water Management Board may, in its discretion,

approve any application for a lesser amount of water or may vary the periods of annual use and the permit to appropriate water shall be regarded as limited accordingly.

46-5-25. Diligent prosecution of construction work--Forfeiture of rights--Extension. The work of construction shall be diligently prosecuted to completion. If one-fifth of the work is not completed within one-half the time allowed, as determined by the Water Management Board, the board may accept and approve an application for the use of any of the waters included in the permit issued to the prior applicant, and the right to use the waters under the former permit are forfeited. However, the Water Management Board shall allow an extension of time at the request of the prior applicant, equal to the time during which work was prevented by the operation of law beyond the power of the applicant to avoid. This section does not apply to permits or licenses issued under § 46-5-8.1.

46-5-26. Extension of time for completion of construction or application to beneficial use. A permit may be amended by extending the time for the completion of construction, or for application to beneficial use, for a reasonable time, but only on account of delays due to physical or engineering difficulties which could not have been reasonably anticipated, due to operation of law beyond the power of the applicant to avoid, or due to other exigent circumstances identified by the Water Management Board.

46-5-13.1. Change of location of diversion point. The location of a point of diversion may be changed or additional points of diversion may be approved if the new or additional point of diversion is from the same source of water, no additional water is appropriated, and, if the water use is for irrigation, no new land is to be irrigated. The change in location of diversion points may be allowed without application or publication pursuant to § 46-2A-4, if the chief engineer is contacted and makes a finding that the change does not increase the potential for interference with existing diversions.

From: Branscum, Iona [mailto:Iona.Branscum@POET.COM]
Sent: Thursday, August 20, 2015 1:08 PM
To: Gronlund, Eric
Cc: Gomer, Blaine
Subject: Water permit No. 7649-3 - Northern Lights Ethanol - request for an extension

Hello, Eric.

Northern Lights Ethanol d/b/a POET Biorefining – Big Stone (POET) continues to investigate alternative water supplies. Since the *Temporary Permit To Use Public Waters for Construction and Testing Purpose* was issued by the IDNR on June 1, 2015, Well #1 has been installed and a 7 day pump test has been completed. LBG has also completed an investigation of the North Fork of the Whetstone River. LBG is completing reports on these investigation.

Water permit No. 7649-3 allows the installation of up to four wells in the Veblen Aquifer in the E ½ of the SW ¼ of S15, T121N, R47W and requires that one-fifth of the construction be completed on or before September 7, 2015. Well #1 was installed in the NE ¼ of S14, T121N, R47W, which is not within the legal description of permit No. 7649-3. It is currently undetermined if POET will be pursuing the Well #1 location as their source or if other options need to be considered.

Give the current status of POET's investigation, Northern Lights Ethanol d/b/a POET Biorefining – Big Stone requests an extension of the September 7, 2015 date to have one-fifth of the construction completed. POET proposes a deadline of September 7, 2017.

If you need any additional information, please contact me. Have a nice day.

Iona Branscum, P.E.
Senior Environmental Engineer

POET

4615 N. Lewis Ave
Sioux Falls, SD 57104
P/ +1 (605) 965-2392
F/ +1 (605) 965-4903
poet.com



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SEP 08 2015

WATER RIGHTS
PROGRAM

September 2, 2015

PMB 2020
DENR – Water Rights
523 East Capital Ave.
Pierre, SD 57501-3182

Dear Sir or Madam:

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone (POET) requests the addition of a point of diversion to Water Permit No. 7649-3. The permit currently approves four wells located in the E ½ of The SW ¼ of Section 15-T121N-R47W. This new point of diversion, designated as Well #1, is located in the SW ¼ of the NE ¼ of Section 14-T121N-R47W.

Test holes were drilled within the vicinity of the location approved by the permit. Well #1 was drilled in the SW ¼ of the NE ¼ Section 14-T121N-R47W, as test holes showed it to be a preferred site. This well was constructed under a *Temporary Permit To Use Public Water for Construction and Testing Purposes*, dated June 1, 2015.

POET wishes to retain the potential to complete the original four wells approved by the permit. With this request, the amount of water requested will remain at 1500 gpm and 2000 acre-feet, as allowed under the existing permit.

If you have questions or need additional information, please contact Iona Branscum at iona.branscum@poet.com or 605-965-2392 or Mitch Kannenberg at mitchk@lbgsioux.com or 605-334-6000.

Sincerely,

Blaine Gomer, General Manager
Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone

Enclosure: Appropriation Application (six total pages)

cc: Iona Branscum, POET Design and Construction,
Mitch Kannenberg, Leggette, Brashears & Graham, Inc

Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	(office use only) No. _____ Hydrologic Unit _____
	Basin _____
	Newspaper _____

RECEIVED
SEP 08 2015
WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

☐ Municipal	☐ Suburban Housing	☐ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☐ Fish & Wildlife	☐ Geothermal Heat
☐ Domestic (over 18 gpm)	☒ Industrial	☐ Other _____	

Type of Application: (check one)

☐ New ☐ Vested Right (Use predates Mar 2, 1955) ☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____
☒ Amendment/Correction to Permit No. 7649-3

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Request addition of a point of diversion for Well #1 constructed in nearby section. No additional water is being requested.

1. Name to Appear on Water Permit Northern Lights Ethanol, LLC d.b.a. POET Biorefining - Big Stone

(check one) ☒ Owner ☐ Tenant/Lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address PO Box 356 Big Stone City SD 57216
(Address) (City) (State) (Zip Code)

Home Phone 605-863-7902 Cell _____ Email blaine.gomer@poet.com

2. Amount of water claimed _____ *CFS or 1500 **GPM 2000 ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Veblen Aquifer

4. Location of point of diversion SW 1/4 NE 1/4 Section 14-T121N-R47W County Grant
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☒ Yes ☐ No

If "Yes," where will water be used? SW 1/4, Section 12-T121N-R47W
(example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Grant County

6. Annual period during which water is to be used January 1 - December 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

Test holes were drilled within the vicinity of the area of the original water permit. On June 17, 2015, Well #1 was drilled at this location, as it was shown to be a preferred site. Due to water quality, POET Biorefining - Big Stone continues to collect information. Drilling of future well(s) at the currently approved location may occur. Therefore, Northern Lights Ethanol requests the addition of one point of diversion (Well #1) to the existing permit.

I, Blaine Gomer, General Manager, the applicant, certify that I have read this application, have examined the attached map, and that the matters stated are true.

Supplemental Information

(type or print)

1. Well Information (check one or both as applicable) ☐ Drilling new well(s) ☒ Using existing well(s)

- a) If new wells, how many ____ Have test holes been drilled ☐ Yes ☐ No Drilled by _____
(if yes, please provide copies of logs)
- b) If existing wells, how many 1 Provide copy of log(s), if available. Drilled by Steffl Drilling and Pump Inc
- c) Well Depth 136 ft Depth to Top of Water Bearing Material 74 ft Depth to Water from Surface 16 ft
- d) Distance to nearest existing domestic well:
- On applicant's property None On property owned by others >1800 ft

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) located within 770 feet from Big Stone City wastewater ponds
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

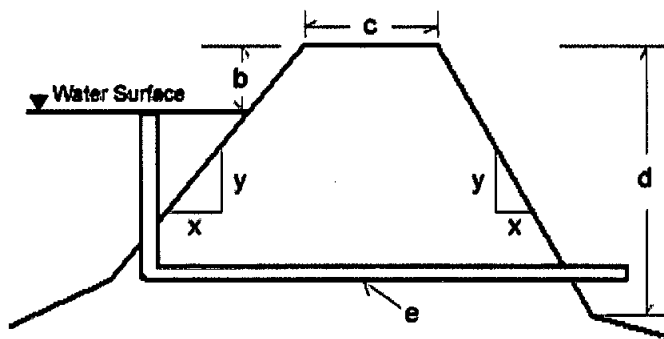
3. Dugout Information

- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

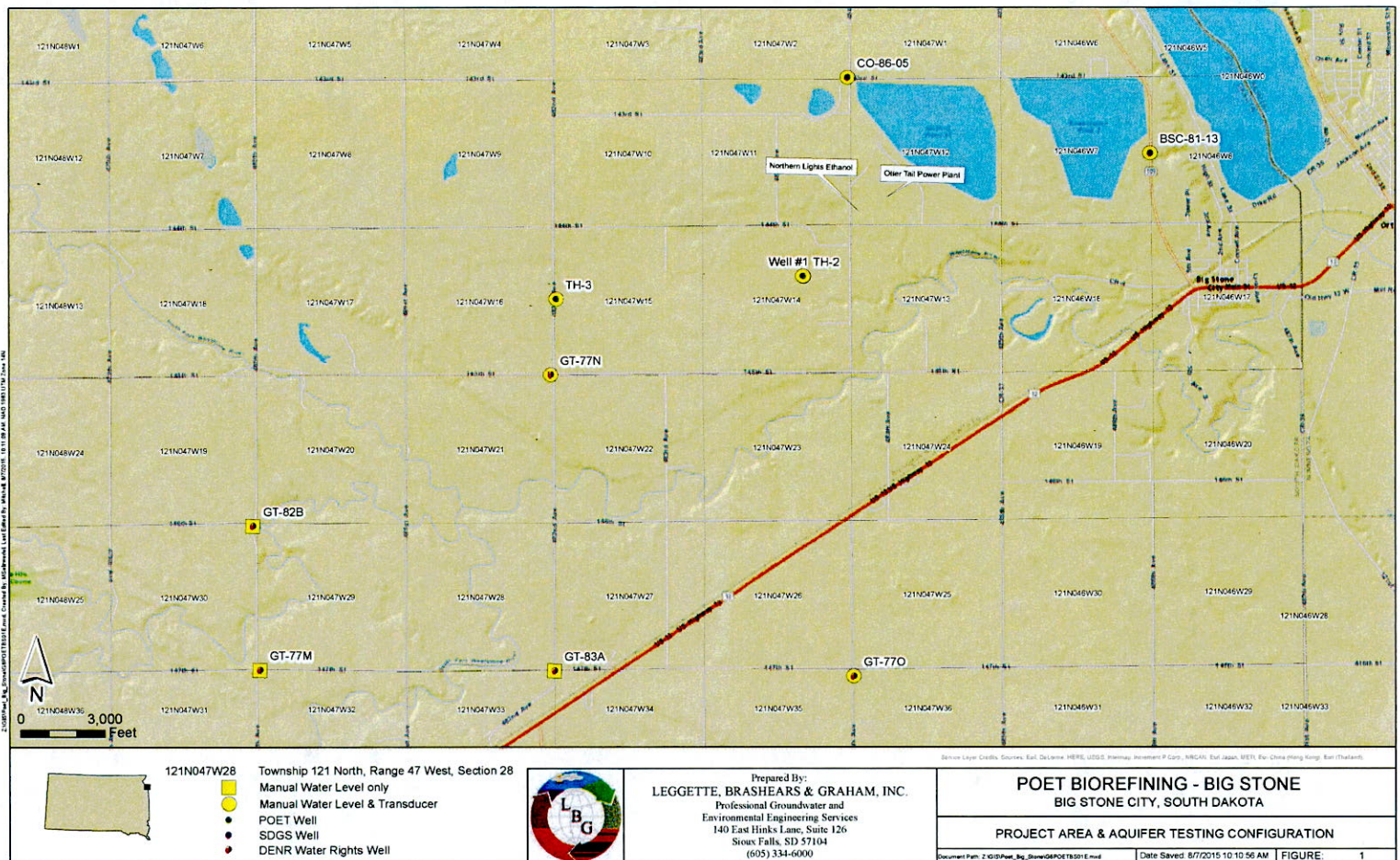
If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:



- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Surface Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres

**WATER RIGHTS
PROGRAM**





LEGGETTE, BRASHEARS & GRAHAM, INC.
140 East Hinks Lane, Suite 126
Sioux Falls, SD 57104
(605) 334-6000 or Fax (605) 334-1850

GEOLOGIST'S LOG

WELL NO.: TH-2 (Rabe Observation Well)

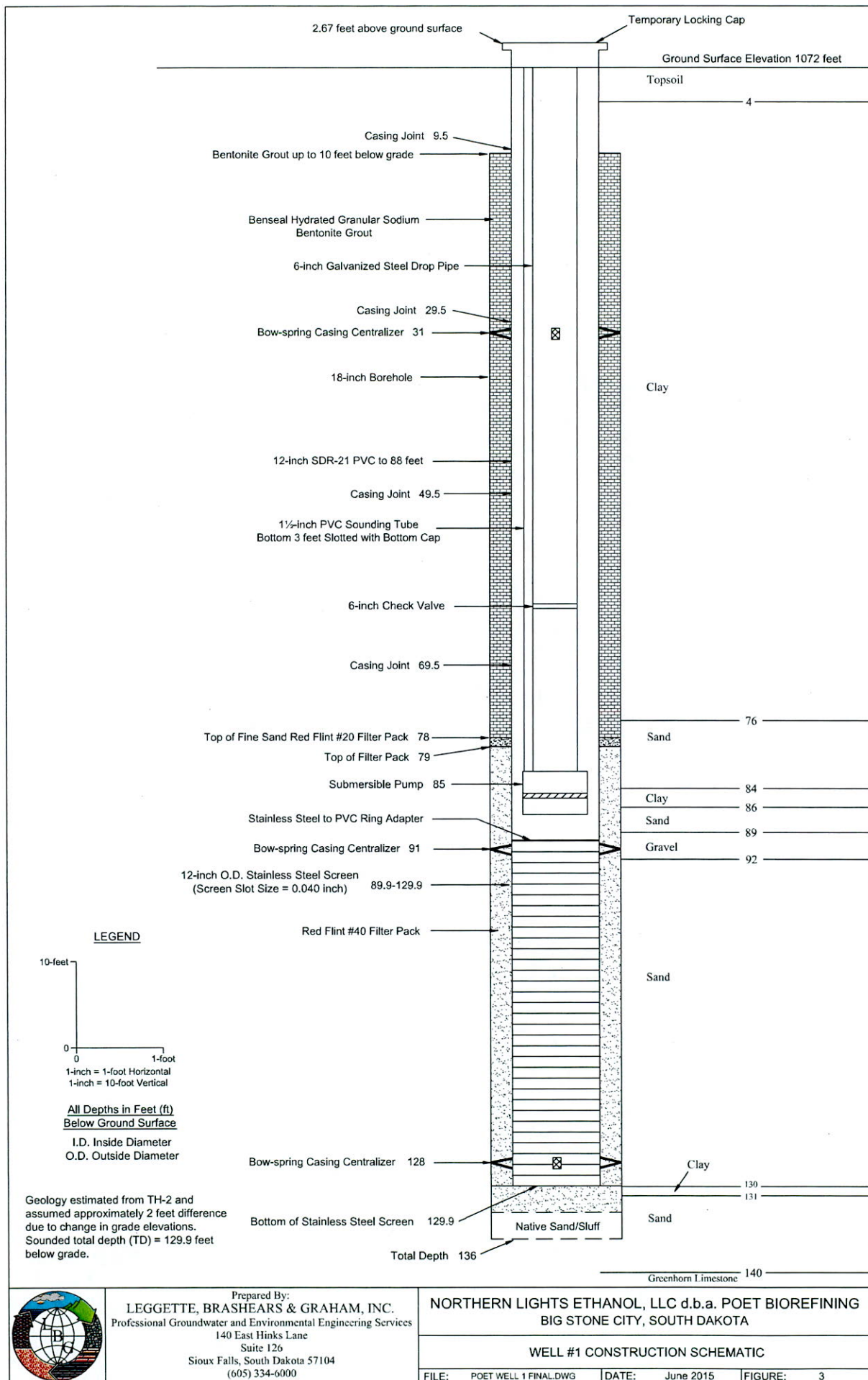
Page 1 of 1

OWNER: Northern Lights Ethanol, LLC d.b.a. POET Biorefining
LOCATION: NE¼, SW¼, NE¼, Section 14, T121N, R47W
DRILLING CO: Cascade Drilling, L.P.
DRILLING METHOD: Rotosonic, 4" continuous core
DATE STARTED: March 20, 2015
DATE COMPLETED: March 21, 2015

TOTAL DEPTH OF HOLE: 180 feet below grade
GEOLOGIST: Mitchell Salzwedel
REFERENCE POINT ELEV.: Grade
GROUND SURFACE ELEV.: 1,070 feet
STATIC WATER LEVEL: 10.46 feet below ground surface (3/31/15)
SURFACE COMPLETION: Stick-up 2.45 feet
WELL SCREEN DEPTH: 114 to 124 feet below grade

APPROX. ELEVATION (feet AMSL)	DEPTH (in feet)	WELL CONSTRUCTION	GRAPHIC	DESCRIPTION	FROM	TO
1070	0	Stick-up (2.45')		TOPSOIL: clay, very dark grayish brown (10YR 3/2); and silt; some very fine to fine sand; trace medium to coarse sand.	0	4
1065	-5			CLAY: dark yellowish brown (10YR 4/4); some very fine to very coarse sand; some silt; trace very fine to very coarse gravel; boulder at 15 feet (Till).	4	15
1060	-10	2" ID Sch 80 PVC		@ 15 fbg, very dark gray (2.5Y 3/1); some silt; trace fine to very coarse sand; trace very fine to very coarse gravel (Till).	15	26
1055	-15			@ 26 fbg, dark gray (2.5Y 4/1); some very fine to medium sand; little silt; angular very coarse sand and very fine to very coarse gravel seam at 28 feet (Till).	26	54
1050	-20					
1045	-25					
1040	-30					
1035	-35	6" Borehole				
1030	-40					
1025	-45					
1020	-50					
1015	-55			@ 54 fbg, very dark gray (2.5Y 3/1); little very fine to very coarse sand; little silt; trace very fine to medium gravel (Till).	54	62
1010	-60			@ 62 fbg, very dark gray (2.5Y 3/1); some fine to very coarse sand; little silt; trace very fine to very coarse gravel (Till).	62	74
1005	-65	Baroid Quik Grout				
1000	-70					
995	-75			SAND: dark grayish brown (10YR 4/2) fine to medium; trace very coarse sand; trace very fine to medium gravel; trace silt; trace clay.	74	82
990	-80			CLAY: dark gray (2.5Y 4/1); and fine to medium sand, some silt; trace very fine to medium gravel (Till).	82	84
985	-85			SAND: dark grayish brown (10YR 4/2), fine to coarse; and clay; little silt; trace very coarse sand; trace very fine to very coarse gravel.	84	87
980	-90			GRAVEL: dark brown (10YR 4/3), very fine to fine, and medium to very coarse sand; little silt; little clay.	87	90
975	-95				90	93
970	-100			SAND: very dark gray (10YR 3/1), fine to medium; little clay; little silt.	93	124
965	-105	Baroid Holeplug 3/8"		@ 93 fbg, dark gray (10YR 4/1), medium; little silt; trace fine to coarse sand; trace clay.		
960	-110	Global #7				
955	-115	Red Flint #40		@ 116 fbg, sand coarsening to coarse to very coarse.		
950	-120	2" ID Sch 80 PVC Slotted 0.020"		@ 124 fbg, dark gray (10YR 4/1), medium to coarse; some very fine gravel; some clay; little silt; trace fine and very coarse sand; trace fine to medium gravel.	124	128
945	-125			CLAY: very dark gray (2.5Y 3/1).	128	129
940	-130			SAND: dark gray (10YR 4/1), coarse to very coarse; and very fine to very coarse gravel; some clay; some silt; 3" shale beds at 132 and 133 feet.	129	134
935	-135			@ 134 fbg, dark gray (10YR 4/1), medium to very coarse; some clay; some silt; little very fine to fine gravel.	134	138
930	-140			GREENHORN LIMESTONE: black (2.5Y 2.5/1), calcareous shale interbedded with thin (<¼-inch thick) calcareous fine grained limestone interbeds, white to gray.	138	171
925	-145					
920	-150					
915	-155					
910	-160					
905	-165					
900	-170	Baroid Holeplug 3/8"		GRAVEL: multicolored, composed of granite, pyrite rich metamorphic and igneous rocks, angular to subrounded; and clay (matrix).	171	172
895	-175			WEATHERED MILBANK GRANITE: greenish gray (Gley 2 6/10BG), very fine to coarse sand; and clay (no samples recovered beyond 172).	172	180
890	-180			END OF BORING		

REMARKS: AMSL = Above Mean Sea Level fbg = feet below grade



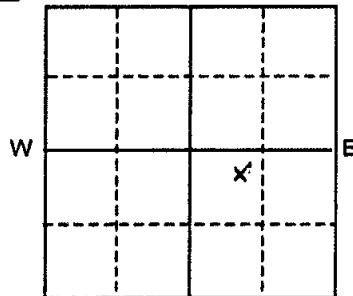
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW ¼ NE ¼ Sec 14 Twp 121 Rg 47

County Grant

North

Please mark well
location with an "X"

Well Completion Date

June 17, 2015

1 Mile

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

100.0 ft. from pond (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

mud rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe SDR-21

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	12.00 IN	0.0 FT	89.9 FT	17.50 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Benseal	19	Lb/gal	0.0 Ft	78.0 Ft
Red Flint San		Lb/gal	78.0 Ft	133.0 Ft

Describe grouting procedure
Tremie, settled to 10 ft

Native sand/sluff 133-136

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 12.00 Inches Length 40.0 Feet

Material stainless steel Johnson 250' High Flow

Slot Size 40 Set From 89.9 Feet to 129.9 Feet

Other information 152 bags red flint #40
3 bags red flint #20

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? chlorinated water

☐ No, Why Not?
Lab to which water
quality sample sent for analysis

Well Owner: Northern Lights Ethanol

Business Name: Poet Bio Refining

Address: PO Box 356/48416 144th ST

City, State, Zip: Big Stone City SD 57216

WELL LOG:

			DEPTH	
FORMATION			FROM	TO
top soil	black		0	2
clay	yellow	M	2	25
clay	blue	M	25	85
clay/rock	blue	M	85	88
sand	blue	40-60slt	88	93
sand	blue	60-90slt	93	98
sand	blue	12-60slt/ rocks	98	136

STATIC WATER LEVEL

16.0 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: submersible 6/17/15

☐ Bailed

☐ Other

Pumping Level Below Land Surface

75.0 Ft. After 1.0 Hrs. pumped 1,000.0 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

45 17 34.18N - 64-bags gel
 96 31 16.62W 155-bags red flint
 3 - centralizers: 1@31', 1@91', 1@128'
 42.75 hrs air development, backwash, and jetting
 driller: Kris VanHeuvlen

This well was drilled under license # 463 and this report is true and accurate.

Drilling firm: Steffl Drilling & Pump Inc

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

RECEIVED

SEP 08 2015

WATER RIGHTS
PROGRAM

File No. 7649-3

Approval of Additional Diversion Point

NAME: Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone

ADDRESS: PO Box 356, Big Stone City, SD 57216

DATE: September 9, 2015

COUNTY: Grant

TELEPHONE: (605) 862-7602

Water Permit No. 7649-3 appropriates 3.34 cubic foot per second (cfs) up to 2,000 acre feet per year (ac-ft/yr) from four wells completed into the Veblen aquifer located in the E ½ SW ¼ of Section 15, T121N-R47W in Grant County. The water is intended for industrial purposes in a corn ethanol refinery. The original permit was conditioned with the standard well interference and well completion qualifications.

Blaine Gomer, General Manager for the refinery, submitted a letter to the South Dakota DENR Water Rights Program (received on September 8, 2015) requesting authorization of an additional well located in the SW ¼ NE ¼ of Section 14, T121N-R47W. Designated Well #1, the well was constructed under a *Temporary Permit to Use Public Water for Construction and Testing Purposes*, dated June 1, 2015. The letter goes on to explain that Well #1 is located where test holes showed to be a “preferred site”. On September 9, 2015, during a phone conversation between Mitch Kannenberg and Bracken Capen of the Water Rights Program, Mr. Kannenberg explained that the site is preferred on account of easier land access and a higher static water level in this area (approximately 10 feet below ground surface). It was therefore requested that Well #1 remain as a permanent diversion point under Water Permit No. 7649-3. This new well has been completed to a depth of 130 feet below ground surface.

Water Permit No. 7649-3 is still within the five year construction period. The letter submitted to the Water Rights Program requests the option to construct the originally permitted four wells in addition to Well #1 for a total of five wells authorized under Water Permit No. 7649-3. The amount of water appropriated will remain at the amount authorized by the permit.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional points may be licensed provided the following conditions are met and the potential for interference with other existing diversion points is not increased.

- **Developed water source is the same as licensed source and no additional water is appropriated.**

The water source authorized by Water Permit No. 7649-3 is the Veblen aquifer. The depth of the existing wells as well as the depth of the new well is consistent with the known depth the Veblen aquifer.

No additional appropriation of water is authorized. Water Permit No. 7649-3 appropriates 3.34 cfs to a maximum of 2,000 ac-ft/yr and no additional diversion rate authority is being requested.

Review of Existing Diversions

There are no water rights/permits with wells completed into the Veblen aquifer within two miles of the location of Well #1. Therefore interference in wells authorized by existing water rights/permits as a result of pumping from Well #1 is not expected to occur.

The nearest known domestic well is located approximately 0.5 miles to the east of Well #1. Given an approximate 90 foot difference between the static water level in this area and the depth of this domestic well, this distance is expected to be sufficient in order to avoid impairment as a result of pumping from Well #1.

Water Permit No. 8066-3 has been issued since the initial approval of Water Permit No. 7649-3. Water Permit No. 8066-3 was issued to Teton LLC and appropriates 0.11 cfs (22.4 ac-ft/yr) from two wells completed into the Veblen aquifer approximately two miles west of Well #1. Well #1 is approximately one mile farther from Teton LLC's wells than the location of the originally permitted wells in the E ½ SW ¼ Section 15, T121N, R47W.

Observation Well Data

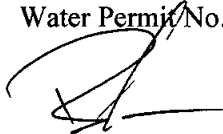
The Water Rights Program monitors a series of observation wells completed into the Veblen aquifer. The closest of these observation wells (GT-77N) is located approximately 1.7 miles to the southwest of Well #1. This well has been in place since 1977 and shows static water level fluctuations of 77 to 85 feet below the top of the casing. Historic water levels in GT-77N appear to be primarily climatically controlled with very little visible effects of pumping. Approval of an additional diversion point under Water Right No. 7649-3 does not authorize an increase in the rate or annual volume of water withdrawn from the aquifer and is therefore not expected to affect overall water levels in the aquifer.

CONCLUSION:

- The additional diversion point does not propose to appropriate additional water.
- The new well is pumping water from the same aquifer as was initially applied for, the Veblen aquifer.
- Unlawful impairment of existing water rights/permits and domestic wells is not expected to occur.

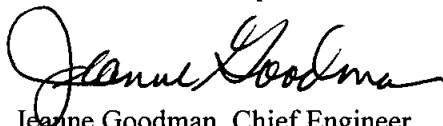
RECOMMENDED ACTION:

Based on the above criteria, it is recommended that the request for an additional diversion point under Water Permit No. 7649-3, located in the SW ¼ NE ¼ of Section 14, T121N-R47W be approved.



Bracken Capen
Natural Resources Engineer

The Chief Engineer makes a finding pursuant to SDCL 46-5-13.1 and ARSD 74:02:01:14:01 that: The additional diversion point does not increase the potential for adverse effects to existing diversions.



Jeanne Goodman, Chief Engineer
Water Rights Program



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
PMB 2020
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
www.denr.sd.gov

September 23, 2015

7649-3

Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone
C/O Blaine Gomer, General Manager
PO Box 356
Big Stone City, SD 57216

Dear Mr. Gomer:

Water Permit No. 7649-3 appropriates 3.34 cubic foot per second (cfs) up to 2,000 acre feet per year (ac-ft/yr) from four wells completed into the Veblen aquifer located in the SW $\frac{1}{4}$ of Section 15, T121N-R47W in Grant County. The water is intended for industrial purposes in a corn ethanol refinery. The original permit was conditioned with the standard well interference and well completion qualifications.

POET submitted a letter to the South Dakota DENR Water Rights Program (received on September 8, 2015) requesting authorization of an additional well located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 14, T121N-R47W.

Upon review of the request and pursuant to SDCL 46-5-13.1, the additional well location is authorized without application or publication of a notice of hearing pursuant to SDCL 46-2A-4. No increase in the authorized diversion rate of 3.34 cfs up to 2,000 ac-ft/yr authorized by Water Right No. 7649-3 has been requested or approved. If the total diversion rate or annual volume increases, a new water permit will need to be obtained from the SD DENR Water Rights Program.

Water Permit No. 7649-3 has until March 7, 2018 to complete construction of works of the other four wells authorized by the permit.

If you have any questions, please contact Bracken Capen at (605) 773-3352.

Sincerely,

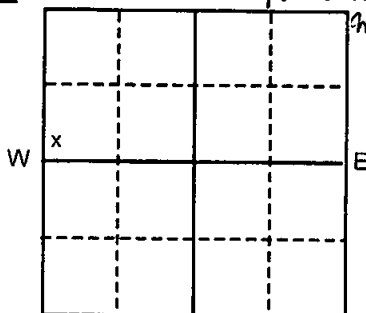
Jeanne Goodman
Chief Engineer
Water Rights Program

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW 1/4 NW 1/4 Sec 15 Twp 121N Rg 74WCounty Grant

Please mark well location with an "X"



Well Completion Date

October 31, 2016

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
2,510.0 ft. from Septic Tank (identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Forward Rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	12.00 IN	0.0 FT	214.0 FT	20.00 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
HiSolids Bent	117	9.5 Lb/gal	0.0 Ft	203.0 Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Tremie Method

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 12.00 Inches Length 35.0 FeetMaterial Stainless SteelSlot Size .050 Set From 214.0 Feet to 249.0 Feet

Other information

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? HTH Tablets
☐ No, Why Not?

Lab to which water quality sample sent for analysis

Well Owner: Northern Lights Ethanol

Business Name:

Address: 48416 144th StCity, State, Zip: Big Stone City SD 57216

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	1
Silty Sand Clay - Rock at 9' & 14'	1	20
Silty Clay - Rocks	20	27
Silty Clay	27	40
Silty Gray Clay	40	57
Fine Silty Gray Sand - Clay Layers	57	80
Fine Gravel - Sand, Clay Layers	80	91
Glacial Till - Gray Sand	91	100
Glacial Till	100	103

STATIC WATER LEVEL 96.0 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:☐ Bailed☐ Other

Pumping Level Below Land Surface

137.0 Ft. After 168.0 Hrs. pumped 1,050.0 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

Well Log Cont. on page 2

Elevation: 1101'

45.290632

-96.555245

RECEIVED

APR 12 2017

WATER RIGHTS PROGRAM

This well was drilled under license # 810 and this report is true and accurate.Drilling firm: Heine Electric & Irrigation

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

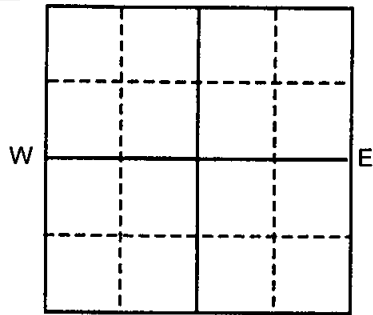
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location $\frac{1}{4}$ $\frac{1}{4}$ Sec Twp Rg

County North

Please mark well location with an "X"



Well Completion Date

1 Mile

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

PROPOSED USE:

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

METHOD OF DRILLING:

CASING DATA: ☐ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
		Lb/gal	Ft	Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

SCREEN: ☐ Perforated pipe ☐ Manufactured

Diameter Inches Length Feet

Material
Slot Size Set From Feet to Feet

Other information

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? HTH Tablets☐ No, Why Not?

Lab to which water quality sample sent for analysis

Well Owner: Northern Lights Ethanol

Business Name:

Address: 48416 144th St

City, State, Zip: Big Stone City SD 57216

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Fine Gray Sand-Fine Gravel	103	120
Gray Clay - Gray Sand Layers	120	160
Gray Fine Silty Sand	160	174
Coarse Gravel	174	175
Fine Gray Sand	175	178
Gray Clay - Sand Layers	178	200
Coarse Sand-Fine Gravel- clay layers	200	220
Coarse Sand-Fine Gravel-Rock- 238'	220	240
Coarse Sand - Clay Layers	240	250

STATIC WATER LEVEL 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:☐ Bailed☐ Other

Pumping Level Below Land Surface

Ft. After Hrs. pumped GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

Well Log Cont. on page 3

RECEIVED

APR 12 2017

WATER RIGHTS PROGRAM

This well was drilled under license # 810 and this report is true and accurate.

Drilling firm: Heine Electric & Irrigation

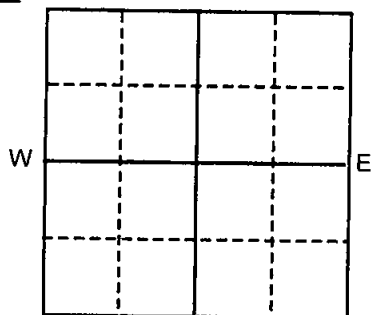
Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

City, State, Zip: Big Stone City SD 57216

Please mark well
location with an "X"



Well Completion Date

1 Mile

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

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

METHOD OF DRILLING:

☐ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER		FROM		TO		HOLE DIAMETER	
LB/FT	IN	FT	FT	FT	IN			
LB/FT	IN	FT	FT	FT	IN			
LB/FT	IN	FT	FT	FT	IN			

Grout Type	No. of Sacks	Grout Weight	From	To
		Lb/gal	Ft	Ft
		Lb/gal	Ft	Ft
Describe grouting procedure				

☐ Perforated pipe ☐ Manufactured

Other information

Describe packer(s) and location

quality sample sent for analysis

DEPTH

[illegible]

FEET

If flowing: closed in pressure PSI

GPM flow _____ through _____ Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

	GPM
Reduced flow rate	

Can well be completely shut in?

☐ Pumped Describe:

☐ Bailed

☐ Other

Pumping Level Below Land Surface

	Ft. After	Hrs. pumped	GPM
1	10.0	10	100
2	10.0	10	100
3	10.0	10	100
4	10.0	10	100
5	10.0	10	100
6	10.0	10	100
7	10.0	10	100
8	10.0	10	100
9	10.0	10	100
10	10.0	10	100
11	10.0	10	100
12	10.0	10	100
13	10.0	10	100
14	10.0	10	100
15	10.0	10	100
16	10.0	10	100
17	10.0	10	100
18	10.0	10	100
19	10.0	10	100
20	10.0	10	100
21	10.0	10	100
22	10.0	10	100
23	10.0	10	100
24	10.0	10	100
25	10.0	10	100
26	10.0	10	100
27	10.0	10	100
28	10.0	10	100
29	10.0	10	100
30	10.0	10	100
31	10.0	10	100
32	10.0	10	100
33	10.0	10	100
34	10.0	10	100
35	10.0	10	100
36	10.0	10	100
37	10.0	10	100
38	10.0	10	100
39	10.0	10	100
40	10.0	10	100
41	10.0	10	100
42	10.0	10	100
43	10.0	10	100
44	10.0	10	100
45	10.0	10	100
46	10.0	10	100
47	10.0	10	100
48	10.0	10	100
49	10.0	10	100
50	10.0	10	100
51	10.0	10	100
52	10.0	10	100
53	10.0	10	100
54	10.0	10	100
55	10.0	10	100
56	10.0	10	100
57	10.0	10	100
58	10.0	10	100
59	10.0	10	100
60	10.0	10	100
61	10.0	10	100
62	10.0	10	100
63	10.0	10	100
64	10.0	10	100
65	10.0	10	100
66	10.0	10	100
67	10.0	10	100
68	10.0	10	100
69	10.0	10	100
70	10.0	10	100
71	10.0	10	100
72	10.0	10	100
73	10.0	10	100
74	10.0	10	100
75	10.0	10	100
76	10.0	10	100
77	10.0	10	100
78	10.0	10	100
79	10.0	10	100
80	10.0	10	100
81	10.0	10	100
82	10.0	10	100
83	10.0	10	100
84	10.0	10	100
85	10.0	10	100
86	10.0	10	100
87	10.0	10	100
88	10.0	10	100
89	10.0	10	100
90	10.0	10	100
91	10.0	10	100
92	10.0	10	100
93	10.0	10	100
94	10.0	10	100
95	10.0	10	100
96	10.0	10	100
97	10.0		

	Ft. After	Hrs. pumped	GPM
1	10.0	10	100
2	10.0	10	100
3	10.0	10	100
4	10.0	10	100
5	10.0	10	100
6	10.0	10	100
7	10.0	10	100
8	10.0	10	100
9	10.0	10	100
10	10.0	10	100
11	10.0	10	100
12	10.0	10	100
13	10.0	10	100
14	10.0	10	100
15	10.0	10	100
16	10.0	10	100
17	10.0	10	100
18	10.0	10	100
19	10.0	10	100
20	10.0	10	100
21	10.0	10	100
22	10.0	10	100
23	10.0	10	100
24	10.0	10	100
25	10.0	10	100
26	10.0	10	100
27	10.0	10	100
28	10.0	10	100
29	10.0	10	100
30	10.0	10	100
31	10.0	10	100
32	10.0	10	100
33	10.0	10	100
34	10.0	10	100
35	10.0	10	100
36	10.0	10	100
37	10.0	10	100
38	10.0	10	100
39	10.0	10	100
40	10.0	10	100
41	10.0	10	100
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45	10.0	10	100
46	10.0	10	100
47	10.0	10	100
48	10.0	10	100
49	10.0	10	100
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67	10.0	10	100
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83	10.0	10	100
84	10.0	10	100
85	10.0	10	100
86	10.0	10	100
87	10.0	10	100
88	10.0	10	100
89	10.0	10	100
90	10.0	10	100
91	10.0	10	100
92	10.0	10	100
93	10.0	10	100
94	10.0	10	100
95	10.0	10	100
96	10.0	10	100
97	10.0		

If pump installed, pump rate: _____ GPM

Well Log Cont.

RECEIVED

APR 12 2017

WATER RIGHTS PROGRAM

This well was drilled under license # 810 and this report is true and accurate.

Drilling firm: **Heine Electric & Irrigation**

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

Date:

Gronlund, Eric

From: Gronlund, Eric
Sent: Monday, October 16, 2017 10:33 AM
To: iona.branscum@poet.com
Subject: Water Permit No. 7649-3

Iona Branscum

We spoke this morning about a well drilled under Water Permit No. 7649-3 for POET Biorefining. You inquired regarding the applicability of Administrative Rules of South Dakota 74:02:04:24(4) regarding well location. Subsection 4 of this rule states that all wells shall be located a minimum of 10 feet horizontally from permanent structures and overhead projections of the structure and 10 feet horizontally from overhead power lines.

You stated that a manhole for access to the piping for conveying water from the well is located eight feet from the well. The concern was that this would be considered a permanent structure in violation of the well construction standards.

The well construction standards are to be followed by the well driller. It is my understanding that the well was completed prior to construction of manhole. Therefore there was no violation of the well construction standards.

Secondly, this manhole is part of the system of piping to convey water to beneficial use. As such, the Water Rights Program of DENR would not consider this a permanent structure when interpreting the intent of this rule.

To sum up – the manhole being located 8 feet from the well is allowable.

This email correspondence will be placed in the administrative record for Water Permit No. 7649-3.

Eric Gronlund
Water Rights Program, DENR
605 773-3352
Eric.gronlund@state.sd.us

7649-3
RECEIVED

MAR 19 2018

**WATER RIGHTS
PROGRAM**

March 14, 2018

South Dakota Environment & Natural Resources
Water Rights Program
523 E. Capitol
Pierre, SD 57501-3181

Re: Notice of Completion of Works
Water Permit No. 7649-3

Dear SD DENR Water Rights Program Staff,

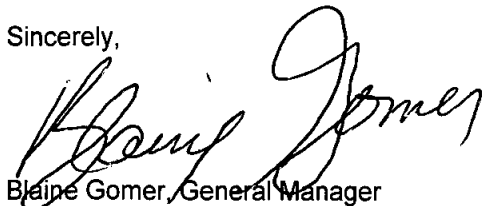
Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone (POET) is providing notice that the construction of the water system associated with Water Permit No. 7649-3 is complete.

As described in the application, the system will serve as a backup supply / alternative source to water from Big Stone Power Plant. POET plans to maintain the water system for standby purposes as required by ARSD 74:02:01:37:02. The permit requires that water be put to beneficial use on or before March 7, 2022. However, given the system is for standby purposes, it is possible the water right may not be fully developed by 2022.

The Notice of Completion of Works and Application of Water To Beneficial Use is not being sent as this time, as the extent of the use is not yet defined. Does the fact the water system is a backup supply, negate the need to complete this form? If not, when should this form be submitted?

Please contact me if you have questions at 605-862-7902 or blaine.gomer@poet.com. Alternately, you may also contact Iona Branscum, POET Lead Environmental Engineer, at 605-965-2392 or Iona.Branscum@POET.COM

Sincerely,



Blaine Gomer, General Manager
Northern Lights Ethanol, LLC d.b.a. POET Biorefining – Big Stone



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
www.denr.sd.gov

March 21, 2018

7649-3

Blaine Gomer, General Mgr
Norther Lights Ethanol LLC
dba POET Biorefining
PO Box 356
Big Stone City SD 57216

Dear Mr. Gomer:

Thank you for your letter of March 14th indicating construction of the water system associated with Water Permit No. 7649-3 was completed.

In your letter you inquired as to whether or not you would still need to submit the "Notice of Completion of Works" form. The answer is no, this will not be necessary. Water Permit No. 7649-3 specifies a completion date for the system as March 7, 2018 with water to be placed to beneficial use on or before March 7, 2022.

With the construction period already past, Water Permit No. 7649-3 will be placed on the list of permits with systems ready for inspection. The inspection will look at "only" the portion of the system in place by March 7, 2018. This will include the number of wells and anything in place that could be used for placing water to beneficial use by the March, 2022 deadline.

Inspections are done on a county-by-county basis as staff time permits. You have done everything you need to do and the intervening time between the completion of the project and the staff inspection has no bearing on the water permit.

For informational purposes, even though the system is considered standby, you will still need to report annual water use even if that use is zero for any given year.

If you have any questions, please contact me.

Sincerely,

Genny McMath
Water Rights Program
(605) 773-3352
email: genny.mcmath@state.sd.us

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7649-3

I have this day, September 6, 2018, made a thorough examination of the water use system constructed by Northern Lights Ethanol LLC dba POET Biorefining, PO Box 356, Big Stone City SD 57216 of Permit No. 7649-3, bearing the priority of January 9, 2013 authorizing the diversion of 3.34 cu. ft. per second of the waters of ground water (Veblen Aquifer) for industrial use purposes, in Grant County.

Inspection contact & relationship to permit holder, if applicable: **D J Hagerty, Plant Manager**

A. Works used to divert the water:

Well Information: Well No. 1

- 1) Well Drilling Firm: Steffl Drilling & Pump Inc
- 2) No. of Wells 1
- 3) Depth(s) 133 feet
- 4) Well log is available Y If no, explain in comments

Comments: **Well located in different section than was originally permitted.**

Casing:

- 1) Diameter 12 inches
- 2) Length 89.9 feet
- 3) Type plastic

Screen:

- 1) Type stainless steel
- 2) Length 40 feet
- 3) Static water level 75 feet

Pump:

- 1) Make Grundfos
- 2) Model 17BH0003
- 3) Size 6 inch
- 4) Capacity 656 GPM

Motor:

- 1) Make Grundfos
- 2) Model 17BH0003

- 3) Horsepower rating 60 hp

Well Information: Well No. 2

- 5) Well Drilling Firm: Heine Electric and Irrigation

- 6) No. of Wells 1

- 7) Depth(s) 249 feet

- 8) Well log is available Y If no, explain in comments

Comments: **none**

Casing:

- 4) Diameter 12 inches

- 5) Length 214 feet

- 6) Type plastic

Screen:

- 4) Type stainless steel

- 5) Length 40 feet

- 6) Static water level 96 feet

Pump:

- 5) Make Grundfos

- 6) Model 202500B4

- 7) Size 6 inch

- 8) Capacity 845 GPM

Motor:

- 4) Make Grundfos

- 5) Model 202500B4

- 6) Horsepower rating 100 hp

B. Works used to transport water to place of use:

- 1) Type PVC 2) Size 12 inches 3) Length 14900 feet

Comments: **none**

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Y

E. Condition and Location:

1. The system is in good condition with the point(s) of diversion located as follows: Well No. 1 - from the NE corner of Sec 14 T121N R47W 1830 ft S & 1710 ft W; with a latitude of 45.29276 and a longitude of -96.52112, (SW ¼ NE ¼). Well No. 2 - from the NW corner of Sec 15 T121N R47W 2630 ft S & 50 ft E; with a latitude of 45.29069 and a longitude -96.55523 , (SW ¼ NW ¼).
2. The works are capable of diverting and conveying to the place of use 3.34 cu. ft. per second of water which is to be used for industrial use (standby). Water has been put to beneficial use to the maximum extent and the license should be issued for 3.34 cfs.

All structures, wells and lands on map Y

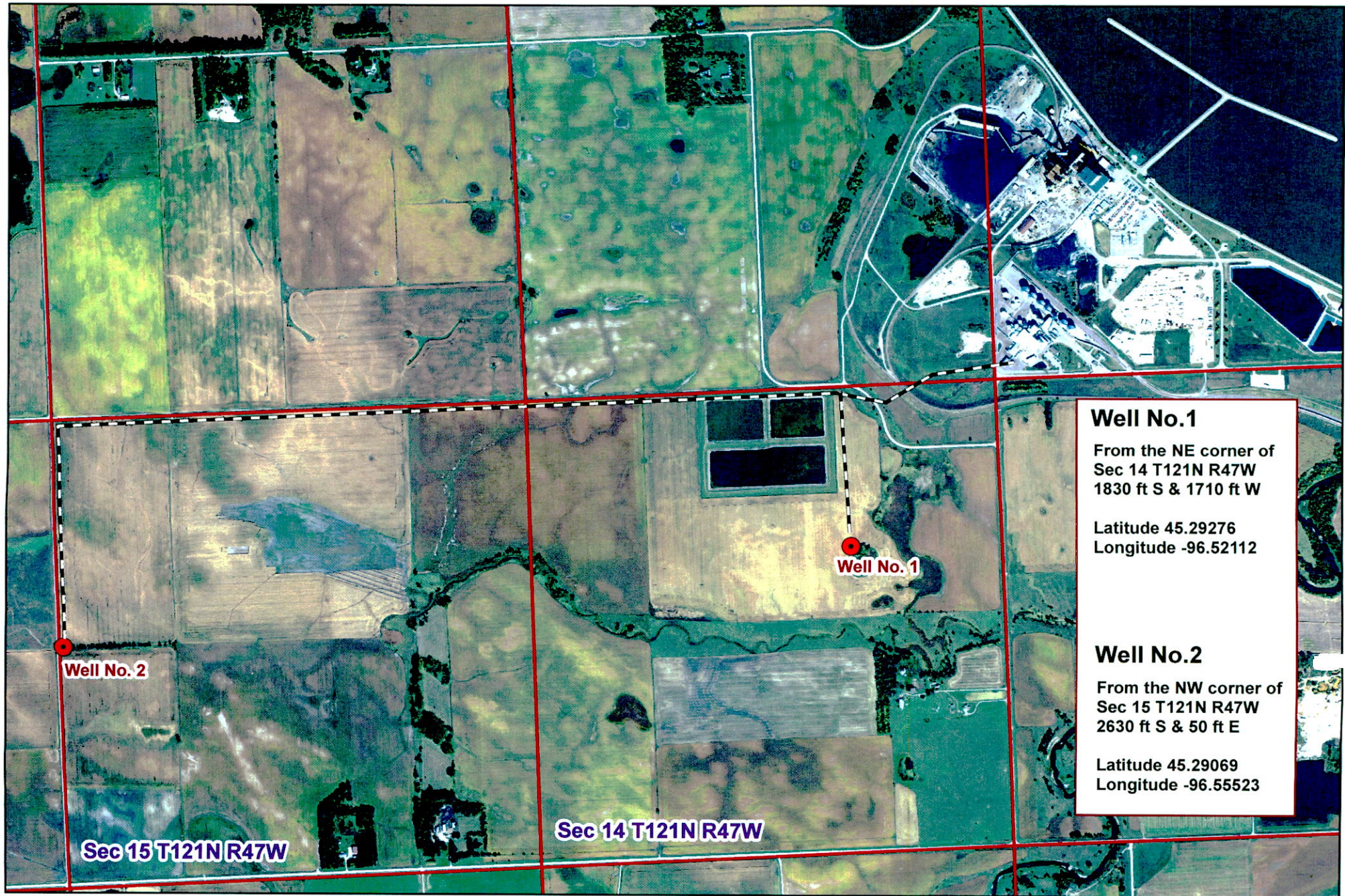
F. Comments or other permit(s) associated with the project:

The permit authorized the construction of up to 4 wells into the Veblen Aquifer located in the W ½ of Sec 15 T121N-R47W. The inspection found one well located in the W ½ of Sec 15 T121N-R47W and a second well located in the NE ¼ of Sec 14 T121N-R47W both wells are into the Veblen Aquifer and the combined diversion rate is equal to the permitted 3.34 cfs.



Mark D Rath
Natural Resources Engineer
DENR, Water Rights Program

Date report completed: January 2, 2019



0 0.25 0.5 1 Miles


Mark D Rath
Natural Resources Engineer
January 2, 2019

PAID

JAN 28 2019

Ck# 020453

NOTICE OF TRANSFER OF OWNERSHIP

To: Chief Engineer
Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

RECEIVED

JAN 28 2019

WATER RIGHTS
PROGRAM

No. 7649-3

Date: _____

I/We request that Water Right/Permit No. 7649-3

formerly owned by: Northern Lights Ethanol, LLC

be transferred to: (name & address) Poet Biorefining - Big Stone, LLC

48416 144th Street

Big Stone City, SD 57216

Telephone No. 605-862-7902

Title to the following described land(s)/property has been transferred as described above:

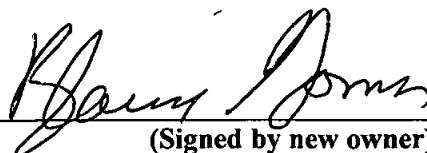
Northern Lights Ethanol, LLC

I/We understand that the validity of Water Right/Permit No. 7649-3 has not been determined by this transfer action. If I/We have any questions on validity, I/We understand that only the Water Management Board has the authority to determine if a water permit/right is valid (see note).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Fifty dollars (\$50.00) is required to cover the filing fees as required under SDCL 46-2-13. This form must be signed by the new owner. Please make checks payable to Water Rights Program.

I/We Blaine Gomer, the new owner, certify that the above information is true and correct.


(Signed by new owner)

NOTE: Water permits may be cancelled for nonconstruction after the five year construction period has expired. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date **January 28**, 20 **19**

RECEIVED OF **Poet Biorefining Big Stone, LLC 48416 144th St Big Stone City SD 57216**

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	50	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form 7649-3		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____	50	00
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	

No. **08996**

By *Jeanne Goodman*
Chief Engineer *J.M.*



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

MAR 19 2019

7649-3

Blaine Gomer
Poet Biorefining – Big Stone LLC
48416 144th St
Big Stone City SD 57216

Dear Mr. Gomer:

The ownership change of Water Permit No. 7649-3 has been completed. The permit was transferred from Northern Lights Ethanol LLC to "Poet Biorefining – Big Stone LLC" and licensed under that name. Enclosed is Water License No. 7649-3. This is the final water right document completing the process of obtaining a Water Right. Included with the license is a map prepared by the staff engineer who conducted the field investigation.

For your information SDCL 46-6-27 requires that if in the future, the owner of an existing well, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

**STATE OF SOUTH DAKOTA
WATER LICENSE NO. 7649-3**

(1) Northern Lights Ethanol LLC, dba POET Biorefining, PO Box 356, Big Stone City SD 57216 made Application No. 7649-3, January 9, 2013 for a water permit to divert 3.34 cubic feet of water per second (2,000 acre feet annually) from ground water, four wells (Veblen Aquifer), Grant County, South Dakota for industrial purposes. Permit No. 7649-3, with a priority date of January 9, 2013 was approved March 7, 2013 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before March 7, 2018 and for the application to beneficial use of said water on or before March 7, 2022.

On September 23, 2015, pursuant to SDCL 46-5-13.1, the chief engineer approved an additional well to be located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 14, T121N, R47W. No additional diversion rate or volume of water was authorized.

On January 28, 2019, Water Permit No. 7649-3 was transferred to Poet Biorefining – Big Stone, LLC.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the water supply system and application of water to beneficial use and is entitled to divert 3.34 cubic feet of water per second for beneficial use. The location of the diversion points are:

- Well No. 1 – 1,830'S & 1,710' W of the NE corner of Section 14, T121N, R47W (SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 14)
Latitude 45.29276, Longitude -96.52112
- Well No. 2 – 2,630'S & 50'E of the NW corner of Section 15, T121N, R47W (NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 15)
Latitude 45.29069, Longitude -96.55523

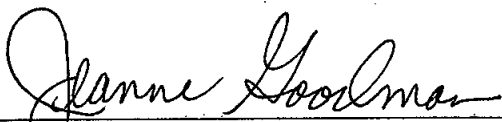
Of the wells authorized, only two wells were developed. The ethanol plant is supplied water from Big Stone Power Plant who withdraws water from Big Stone Lake. The above wells are a backup water supply.

(3) Pursuant to South Dakota Water Law 46-5-30.1 Poet Biorefining – Big Stone, LLC, 48416 144th St., Big Stone City SD 57216 the holder and/or owner of Water Right No. 7649-3 is issued a license to appropriate water, the right to use 3.34 cubic feet of water per second from ground water, two wells (Veblen Aquifer) with a priority date of January 9, 2013 from the locations specified in (2) of this license for industrial purposes.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7649-3 and subject to the following qualifications:

- The wells approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The wells authorized by Permit No. 7649-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with the Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. ***Well #1 was drilled in June, 2015 by Steffl Drilling & Pump Inc. Well #2 was drilled in October, 2016 by Heine Electric & Irrigation. Copies of the well completion reports are on file with the Water Rights Program.***

- Water Right No. 7649-3 authorizes a maximum annual withdrawal from the Veblen Aquifer of 2,000 acre feet of water.
- Poet Biorefining – Big Stone, LLC shall report to the Chief Engineer annually the amount of water withdrawn from the Veblen Aquifer.



Jeanne Goodman, Chief Engineer

Water Rights Program

Department of Environment and Natural Resources

MAR 19 2019

date

