

**GW-025**

**NORTH # 2 BRINE POND  
CLOSURE REPORT**

**DATE:  
July 17, 2009**

RECEIVED

2009 JUL 22 PM 1 45

July 17, 2009

**VIA EMAIL:** Glenn.vongonten@state.nm.us  
**VIA CERTIFIED MAIL**

Mr. Glenn Von Gonten  
Acting Environmental Bureau Chief  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: North (#2) Brine Pond Closure Report  
Targa Midstream Services, L.P., Monument Gas Plant (GW-025)  
Unit Letter N (SE/4, SW/4), Section 36, Township 19 South, Range 36 East  
Lea County, New Mexico**

Dear Mr. Von Gonten:

This letter transmits the above-referenced report to the New Mexico Oil Conservation Division (OCD) on behalf Targa Midstream Services, L.P. (Targa) by Larson & Associates, Inc. (LA), its consultant. The brine pond is located near the northwest corner of the Facility in unit N (SE/4, SW/4), Section 36, Township 19 South, Range 36 East, Lea County, New Mexico. Please contact myself at (432) 687-0901 or Cal Wrangham at (432) 688-0452, if you have questions. We may also be reached by emailing [mark@laenvironmental.com](mailto:mark@laenvironmental.com) or [CWrangham@targaresources.com](mailto:CWrangham@targaresources.com).

Sincerely,

*Larson and Associates, Inc.*



Mark J. Larson, P.G., C.P.G., C.G.W.P.  
Senior Project Manager/President

Encl.

cc: Cal Wrangham, Targa  
Todd Young, Targa  
Carl Chavez, OCD, Santa Fe  
Larry Hill, OCD, Hobbs

**North (#2) Brine Pond Closure Report**  
**Monument Gas Plant**  
**(GW-025)**  
**Lea County, New Mexico**

**Project No. 8-0178**

July 16, 2009

Prepared for:  
Targa Midstream Services, L.P.  
6 Desta Drive, Suite 3300  
Midland, Texas 79705

Prepared by:  
Mark J. Larson, CPG  
Certified Professional Geologist No. 10490

Larson & Associates, Inc.  
507 North Marienfeld, Suite 200  
Midland, Texas 79701

**Table of Content**

1.0 Executive Summary .....1  
2.0 Pond Closure Chronology .....2  
3.0 Closure Activities .....2  
4.0 Conclusions.....3

**List of Tables**

Table 1 Monitoring Well Completion and Gauging Summary  
Table 2 Summary of BTEX Analysis of Groundwater Samples  
Table 3 Summary of Dissolved Metals Analysis of Groundwater Samples  
Table 4 Summary of General Chemistry Analysis of Groundwater Samples

**List of Figures**

Figure 1 Facility Location Map  
Figure 2 Facility Drawing

**List of Appendices**

Appendix A OCD Correspondence  
Appendix B Photographs  
Appendix C Monitoring Well Records

## 1.0 Executive Summary

This report presents the closure documentation for the North (#2) Brine Pond (Site) at the Targa Midstream Services, L.P. (Targa) Monument Gas Plant (Facility) located about 2.6 miles southeast of Monument, New Mexico, in unit N (SE/4, SW/4), Section 36, Township 19 South, Range 36 East, Lea County, New Mexico (Figure 1). The Facility operates under New Mexico Oil Conservation Division (OCD) discharge permit GW-025. The brine pond closure activities were performed according to a work plan that was approved by the OCD on October 21, 2008, with the following conditions:

1. Include this approval in the final closure document.
2. Document that the remaining contamination will not be a threat to or add contaminants to the underlying groundwater.

On November 20, 2008, Targa proposed to the OCD to install two (2) monitoring wells (WP-19 and WP-20) northwest (up gradient) and southeast (down gradient) of Site to document that the remaining contamination in the soil will not threaten or add contaminants to the underlying groundwater. T OCD approved the proposal on November 20, 2008.

Between December 10, 2008 and January 7, 2009, Watson Construction Company, Inc. (Watson) collapsed the berm surrounding the pond and filled the remainder of the pond excavation with clean soil.

On December 29, 2008, Scarborough Drilling, Inc. (Scarborough) used an air rotary rig to drill monitoring wells WP-19 and WP-20 to approximately 50 feet below ground surface (BGS). The wells were constructed using 2 inch schedule 40 PVC threaded screen and riser. Groundwater stabilized in wells at approximately 28.20 feet BGS (wp-19) and 28.75 feet BGS (wp-20).

On January 6, 2009, groundwater samples were collected from the wells and submitted under preservation and chain of custody to DHL Analytical Services, which analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX), metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) and general inorganics, including chloride, sulfate and total dissolved solids (TDS). No BTEX was reported in the samples and dissolved metals were below the New Mexico Water Quality Control Commission (WQCC) human health standards (20.6.2.3103(A) NMAC). Chloride, sulfate and TDS were reported in well WP-19 at 17,700 milligrams per liter (mg/L), 4,020 mg/L and 38,000 mg/L, respectively. Chloride, sulfate and TDS were reported in well WP-20 at 7,780 mg/L, 3,310 mg/L and 17,300 mg/L, respectively. The laboratory results demonstrate that the contaminants remaining in soil beneath the pond is not a threat to or has added contaminants to the underlying groundwater.

The chloride, sulfate and TDS is likely the result of unlined ponds that were once used at the Climax Chemical plant, located hydraulically up gradient of the Facility, for disposal of hydrochloric acid waste.

## 2.0 Pond Closure Chronology

The following events have been documented in connection with the North (#2) Brine Pond closure.

May 2002	Dynegy, successor to Targa, contracted Gandy Corporation to remove and dispose of the sediment and pond liners at Sundance Disposal Services, Inc.
June 7, 2002	LAI collected soil samples from three (3) hand auger borings (HA-1 through HA-3).
June 6, 2003	LAI supervised collecting soil samples from three (3) air-rotary drilled borings.
January 8, 2004	Investigation report submitted to the OCD.
October 21, 2008	Targa requests approval from OCD to close the pond excavation by filling with clean soil. OCD approves request to close the pond excavation with conditions.
November 20, 2008	Targa submits work plan to install monitoring wells to comply with OCD conditions. OCD approves plan to install monitoring wells.
December 10, 2008	Watson begins filling the pond excavation.
December 29, 2008	LAI supervises installation of monitoring wells WP-19 and WP-20.
January 6, 2009	LAI collect groundwater samples from monitoring wells WP-19 and WP-20.
January 7, 2009	Watson completes filling the pond excavation.

Appendix A presents OCD correspondence.

## 3.0 Closure Activities

Between December 10, 2008 and January 7, 2009, Watson Construction Company, Inc. (Watson) filled the pond excavation by collapsing the berm and leveling with clean soil acquired from an area near the north side of the Facility. Appendix B presents photographs.

On December 29, 2008, Scarborough Drilling, Inc. (Scarborough) used an air rotary rig to install monitoring wells WP-19 and WP-20 northwest (up gradient) and southeast (down gradient) of the brine pond. The wells were drilled to approximately 50 feet below ground surface (BGS) and constructed using 2 inch schedule 40 PVC screen and riser. Approximately 20 feet of 0.020 inch factory-slotted screen was positioned in the borings between approximately 30 and 50 BGS. Graded silica sand (8 to 16) was placed from the bottom of the boring to approximately 2 feet above the well screen. Bentonite chips were placed above the sand to about 1 foot BGS. The wells are secured with locking above-grade steel covers anchored in concrete pads measuring approximately 3 x 3 feet. LAI personnel developed the well by hand bailing with dedicated disposable bailers until water was visibly free of suspended material. The groundwater stabilized in wells WP-19 and WP-20 at approximately 28.20 and 28.75 feet BGS, respectively. Table 1 presents a summary of monitoring well drilling and completion details. Attachment C presents geological logs and construction diagrams.

On January 6, 2009, LAI personnel collected groundwater samples from the wells after purging approximately 12 gallons of water from each well using dedicated disposable PVC bailers. The groundwater samples were carefully poured from the disposable bailers into laboratory-prepared containers that were sealed, labeled, placed in an ice filled chest and delivered under chain of custody control to DHL Analytical Services located in Round Rock, Texas. DHL analyzed the samples for BTEX, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) and general

inorganics, including chloride, sulfate and TDS. The purged water was placed into a wastewater tank at the Facility for disposal in a permitted disposal well. Table 2 presents a summary of the BTEX analysis. Table 3 presents a summary of the metals analysis. Table 4 presents a summary of the general inorganic analysis. Appendix C presents the laboratory report.

No BTEX was reported in the samples and the dissolved metals exceeded the New Mexico WQCC human health standards (20.6.2.3103(A) NMAC). Chloride, sulfate and TDS were reported in WP-19 (up gradient) at 17,700 milligrams per liter (mg/L), 4,020 mg/L and 38,000 mg/L, respectively. Chloride, sulfate and TDS were reported in WP-20 (down gradient) at 7,780 mg/L, 3,310 mg/L and 17,300 mg/L, respectively.

## 4.0 Conclusions

The following observations are documented in this report:

- The laboratory results of groundwater samples from WP-19 and WP-20 demonstrate that the contaminants remaining in soil beneath the pond is not a threat to or has added contaminants to the underlying groundwater.
- The chloride, sulfate and TDS in groundwater is likely the result of unlined ponds that were once used at the Climax Chemical plant, located hydraulically up gradient of the Facility, for disposal of hydrochloric acid waste.
- Targa will continue monitoring groundwater quality in wells WP-19 and WP-20 during routine semi-annual groundwater monitoring at the Facility and include the laboratory results in the annual groundwater monitoring report.
- Targa has complied with the conditions required by the OCD and requests that the OCD issue a letter requiring no further action.

# Tables

**Table 1**  
**Monitoring Well Completion and Gauging Summary**  
**Targa Midstream Services, L.P.,**  
**Monument Gas Plant Gas Plant (GW-025)**  
**Lea County, New Mexico**

Well Information		Groundwater Data						
Well ID	Well Diameter (inches)	Well Depth from TOC	TOC Elevation	Date Gauged	Depth to Fluid	Depth to Water	LNAPL Thickness	Corrected Water Elevation
WP-19	2	54.31	3,588.25	1/6/2009		30.74	--	3,557.51
WP-20	2	52.33	3,587.02	1/6/2009		31.36	--	3,555.66

**Notes**

All values are in feet, unless otherwise noted.  
 TOC - top of casing  
 Elevations are referenced to 1984 Geodetic Datum.  
 LNAPL sheens are presented as 0.00 foot thickness

**Table 2**  
**Sumaary of BTEX Analysis of Groundwater Samples**  
**Targa Midstream Services, L.P.,**  
**Monument Gas Plant Gas Plant (GW-025)**  
**Lea County, New Mexico**

Monitor Well ID	Quarter/Year	Sampling Date	Benzene	Toluene	Ethylbenzene	Total Xylenes
<b>NMWQCC Standard</b>			<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>0.62</b>
WP-19	1st / 2009	1/6/2009	<0.0008	<0.002	<0.002	<0.003
WP-20	1st / 2009	1/6/2009	<0.0008	<0.002	<0.002	<0.003
<b>Duplicates</b>						

*Notes*

NMWQCC - New Mexico Water Quality Control Commission Human Health Standard  
 Analyses after 1/2007 performed by DHL Analytical, Inc., Round Rock, Texas  
 Results reported in milligrams/Liter (mg/L)  
 ND - not detected  
 < Less than method detection limit  
 -- Product in well - no sample collected

Table 3  
 Summary of Dissolved Metals Analysis of Groundwater Samples  
 Targa Midstream Services, L.P.,  
 Monument Gas Plant Gas Plant (GW-025)  
 Lea County, New Mexico

Monitor Well ID	Quarter/Year	Sampling Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
NMWQCC Standard			0.1	1.0	0.01	0.05	0.05	0.002	0.05	0.05
WP-19	1st / 2009	1/6/2009	0.0851	0.180	<0.0003	<0.002	0.0113	<0.00008	0.0131	<0.001
WP-20	1st / 2009	1/6/2009	0.00541	0.110	<0.0003	<0.002	0.00103	<0.00008	0.00456	<0.001
Duplicates										

Notes

Results reported in milligrams/Liter (mg/L)

< - Less than method detection limit

--- - no sample collected

**Table 4**  
**Summary of General Chemistry Analysis of Groundwater Samples**  
**Targa Midstream Services, L.P.,**  
**Monument Gas Plant Gas Plant (GW-025)**  
**Lea County, New Mexico**

Monitor Well ID	Quarter/Year	Sampling Date	Calcium	Magnesium	Potassium	Sodium	Chloride	Sulfate	Alkalinity	TDS
NMWQCC Standard										
WP-19	1st / 2009	1/6/2009	1,450	719	62.2	10,400	250	600		1,000
WP-20	1st / 2009	1/6/2009	1,090	404	44.2	4,500	17,700	4,020	552	38,000
Duplicates							7,780	3,310	362	17,300

**Notes**

Results reported in milligrams/Liter (mg/L)

< - Less than method detection limit

--- - Sample not collected

**Figures**

JWW

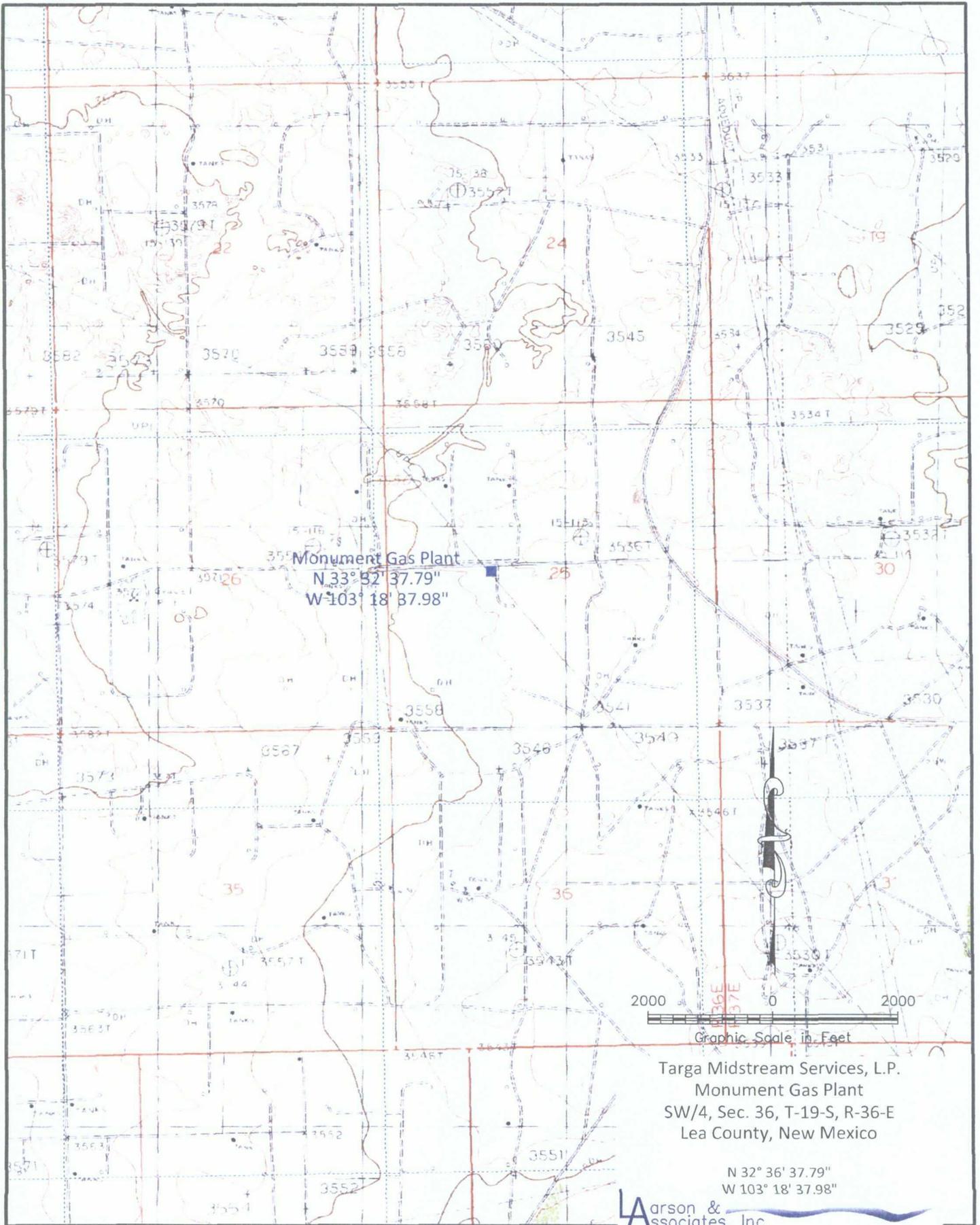
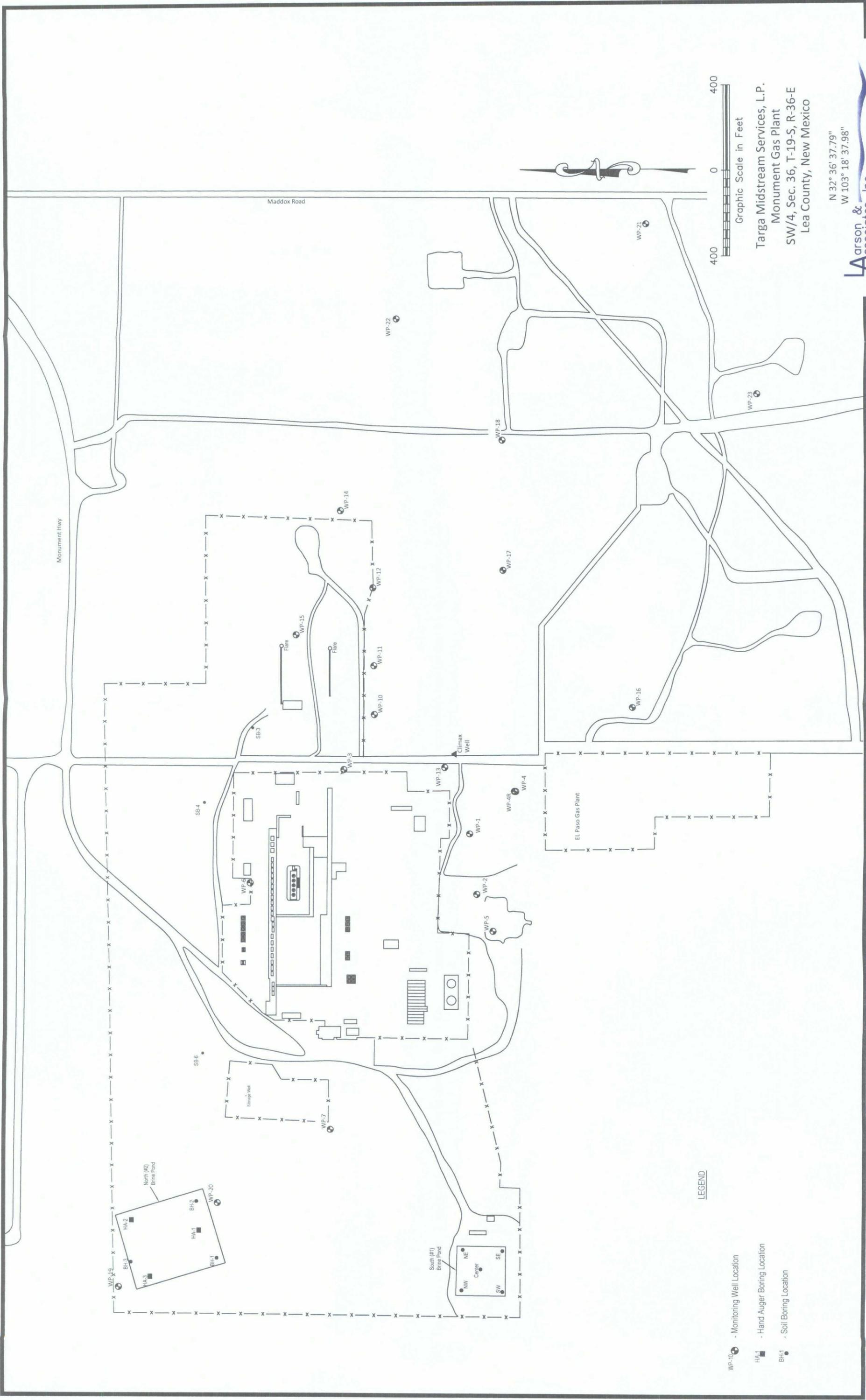


Figure 1 - Topographic Map



Targa Midstream Services, L.P.  
 Monument Gas Plant  
 SW/4, Sec. 36, T-19-S, R-36-E  
 Lea County, New Mexico

N 32° 36' 37.79"  
 W 103° 18' 37.98"



LEGEND

- WP-10 - Monitoring Well Location
- HA-1 - Hand Auger Boring Location
- BH-1 - Soil Boring Location

**Appendix A**

**OCD Correspondence**

## Mark Larson

---

**To:** Price, Wayne, EMNRD  
**Subject:** RE: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant

Will do. Thanks,

Mark

---

**From:** Price, Wayne, EMNRD [mailto:wayne.price@state.nm.us]  
**Sent:** Thursday, November 20, 2008 4:15 PM  
**To:** Mark Larson; Chavez, Carl J, EMNRD  
**Cc:** CWrangham@targaresources.com; TYoung@targaresources.com  
**Subject:** RE: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant

Thank You Mark, also copy Carl Chavez in the future.

---

**From:** Mark Larson [mailto:Mark@laenvironmental.com]  
**Sent:** Thursday, November 20, 2008 3:08 PM  
**To:** Price, Wayne, EMNRD  
**Cc:** CWrangham@targaresources.com; TYoung@targaresources.com  
**Subject:** RE: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant

Wayne,

Targa Midstream Services, L.P. has approved installing two (2) monitoring wells to document that the remaining impacts at the North (#2) brine pond will not threaten or add contaminants to the underlying groundwater. One monitoring well will be positioned hydraulically up gradient (northwest) and the other hydraulically down gradient (southeast) of the former brine pond. The monitoring wells will be merged into the current groundwater monitoring program to assess groundwater quality. The initial sample results will be submitted to the New Mexico Oil Conservation Division (OCD) in a letter following closure of the brine pond and will include a copy of your approval. Notification will be submitted to the OCD at least 48-hours prior to installing the monitoring wells and before groundwater samples are collected. Your approval of this proposal is requested. Please contact me if you have questions.

Sincerely,

Mark J. Larson  
Sr. Project Manager / President  
507 N. Marienfeld St., Ste. 202  
Midland, Texas 79701  
(432) 687-0901 (office)  
(432) 687-0456 (fax)  
(432) 556-8656 (cell)  
mark@laenvironmental.com

The logo for Larson & Associates, Inc. features a stylized 'L' followed by the text 'arson & Associates, Inc.' and 'Environmental Consultants' below it. A decorative wavy line is positioned to the right of the company name.

## Mark Larson

---

**From:** Price, Wayne, EMNRD [wayne.price@state.nm.us]  
**Sent:** Tuesday, October 21, 2008 10:45 AM  
**To:** Mark Larson  
**Cc:** CWrangham@targaresources.com; TYoung@targaresources.com; Chavez, Carl J, EMNRD  
**Subject:** RE: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant  
**Attachments:** image001.jpg

OCD hereby approves of your request with the following conditions:

1. Include this approval in the final closure document.
2. Document that the remaining contamination will not be a threat to or add contaminants to the underlying groundwater.

Please be advised that approval of this plan does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

Cc: Carl Chavez

---

**From:** Mark Larson [mailto:Mark@laenvironmental.com]  
**Sent:** Tuesday, October 21, 2008 8:44 AM  
**To:** Price, Wayne, EMNRD  
**Cc:** CWrangham@targaresources.com; TYoung@targaresources.com  
**Subject:** FW: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant

Wayne,

On January 8, 2004, Larson & Associates, Inc. (LAI), on behalf of Dynege Midstream Services, L.P. (Dynege) as former owner of the Monument Gas Plant, submitted a report to the New Mexico Oil Conservation Division (OCD) titled, "Groundwater Discharge Plan Renewal Investigation Report, Dynege Midstream Services, L.P., Monument Gas Plant (GW-025)" that contained the results of a subsurface investigation for the north (#2) brine pond. Liquid, sediment and liner were removed from the brine pond and disposed at an OCD approved facility (Sundance Disposal Services). Hand auger and machine-drilled soil samples were collected and analyzed for chloride to confirm concentrations in soil beneath the brine pond. The sample results showed the chloride concentration much lower than the brine concentration stored in the pond concluding that only minor leakage occurred. The report also concluded that the groundwater beneath the Monument Plant has been affected by chloride from the former Climax Chemical Company Plant that is located immediately northwest and upgradient of the brine pond. The report recommended no further remedial action for brine pond. Targa Midstream Services, L.P. (Targa), as current owner of the Monument Gas Plant, would like to fill the pond excavation using soil from the berm that surrounds the pond and level the pond excavation with clean soil. Your consideration of this request is appreciated. Please contact Mr. Cal Wrangham with Targa at (432) 688-0542 or email [CWrangham@targaresources.com](mailto:CWrangham@targaresources.com) or you may contact me at the information provided below if you have questions.

Mark J. Larson  
Sr. Project Manager / President  
507 N. Marienfeld St., Ste. 202  
Midland, Texas 79701  
(432) 687-0901 (office)  
(432) 687-0456 (fax)

---

**From:** Price, Wayne, EMNRD [mailto:wayne.price@state.nm.us]  
**Sent:** Tuesday, October 21, 2008 10:45 AM  
**To:** Mark Larson  
**Cc:** CWrangham@targaresources.com; TYoung@targaresources.com; Chavez, Carl J, EMNRD  
**Subject:** RE: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant

OCD hereby approves of your request with the following conditions:

1. Include this approval in the final closure document.
2. Document that the remaining contamination will not be a threat to or add contaminants to the underlying groundwater.

Please be advised that approval of this plan does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

Cc: Carl Chavez

---

**From:** Mark Larson [mailto:Mark@laenvironmental.com]  
**Sent:** Tuesday, October 21, 2008 8:44 AM  
**To:** Price, Wayne, EMNRD  
**Cc:** CWrangham@targaresources.com; TYoung@targaresources.com  
**Subject:** FW: Re: GW-025, North (#2) Brine Pond Closure, Targa Midstream Services, L.P., Monument Gas Plant

Wayne,

On January 8, 2004, Larson & Associates, Inc. (LAI), on behalf of Dynegey Midstream Services, L.P. (Dynegey) as former owner of the Monument Gas Plant, submitted a report to the New Mexico Oil Conservation Division (OCD) titled, "Groundwater Discharge Plan Renewal Investigation Report, Dynegey Midstream Services, L.P., Monument Gas Plant (GW-025)" that contained the results of a subsurface investigation for the north (#2) brine pond. Liquid, sediment and liner were removed from the brine pond and disposed at an OCD approved facility (Sundance Disposal Services). Hand auger and machine-drilled soil samples were collected and analyzed for chloride to confirm concentrations in soil beneath the brine pond. The sample results showed the chloride concentration much lower than the brine concentration stored in the pond concluding that only minor leakage occurred. The report also concluded that the groundwater beneath the Monument Plant has been affected by chloride from the former Climax Chemical Company Plant that is located immediately northwest and upgradient of the brine pond. The report recommended no further remedial action for brine pond. Targa Midstream Services, L.P. (Targa), as current owner of the Monument Gas Plant, would like to fill the pond excavation using soil from the berm that surrounds the pond and level the pond excavation with clean soil. Your consideration of this request is appreciated. Please contact Mr. Cal Wrangham with Targa at (432) 688-0542 or email [CWrangham@targaresources.com](mailto:CWrangham@targaresources.com) or you may contact me at the information provided below if you have questions.

Mark J. Larson  
Sr. Project Manager / President  
507 N. Marienfeld St., Ste. 202  
Midland, Texas 79701  
(432) 687-0901 (office)  
(432) 687-0456 (fax)

(432) 556-8656 (cell)  
mark@laenvironmental.com



---

I am using the Free version of SPAMfighter for Personal use.  
SPAMfighter has removed 1930 of my spam emails to date.  
Try [SPAMfighter](#) for free now!

The Trial and Professional version does not have this message in the email

---

I am using the Free version of [SPAMfighter](#)  
We are a community of 5.5 million users fighting spam.  
SPAMfighter has removed 2356 of my spam emails to date.  
The Professional version does not have this message

---

This inbound email has been scanned by the MessageLabs Email Security System.

---

Confidentiality Notice: This e-mail, including all attachments is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited unless specifically provided under the New Mexico Inspection of Public Records Act. If you are not the intended recipient, please contact the sender and destroy all copies of this message. -- This email has been scanned by the Sybari - Antigen Email System.

---

I am using the Free version of [SPAMfighter](#)  
We are a community of 5.6 million users fighting spam.  
SPAMfighter has removed 2921 of my spam emails to date.  
The Professional version does not have this message

---

This inbound email has been scanned by the MessageLabs Email Security System.

---

Confidentiality Notice: This e-mail, including all attachments is for the sole use of the intended recipient(s) and

may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited unless specifically provided under the New Mexico Inspection of Public Records Act. If you are not the intended recipient, please contact the sender and destroy all copies of this message. -- This email has been scanned by the Sybari - Antigen Email System.

**Appendix B**

**Photographs**

**Photographic Documentation**



1. North (#2) Brine Prior to Closure Looking North



2. North (#2) Brine Pond Prio to Closure Looking Northwest

**Photographic Documentation**



3. North (#2) Brine Pond Prior to Closure Looking Northeast



4. North (#2) Brine Pond Filling Looking Northeast

**Photographic Documentation**



5. North (#2) Brine Pond Filling Looking Northeast



6. North (#2) Brine Pond Filling Looking East

**Photographic Documentation**



7. North (#2) Brine Pond Filling Looking North



8. North (#2) Brine Pond Filling Looking North-Northwest

**Photographic Documentation**



9. North (#2) Brine Pond Filling Looking Southeast



10. North (#2) Brine Pond Filling Looking South

**Photographic Documentation**



11. North (#2) Brine Pond Filling Looking South-Southwest



12. North (#2) Brine Pond Final Grading Looking Northeast

**Photographic Documentation**



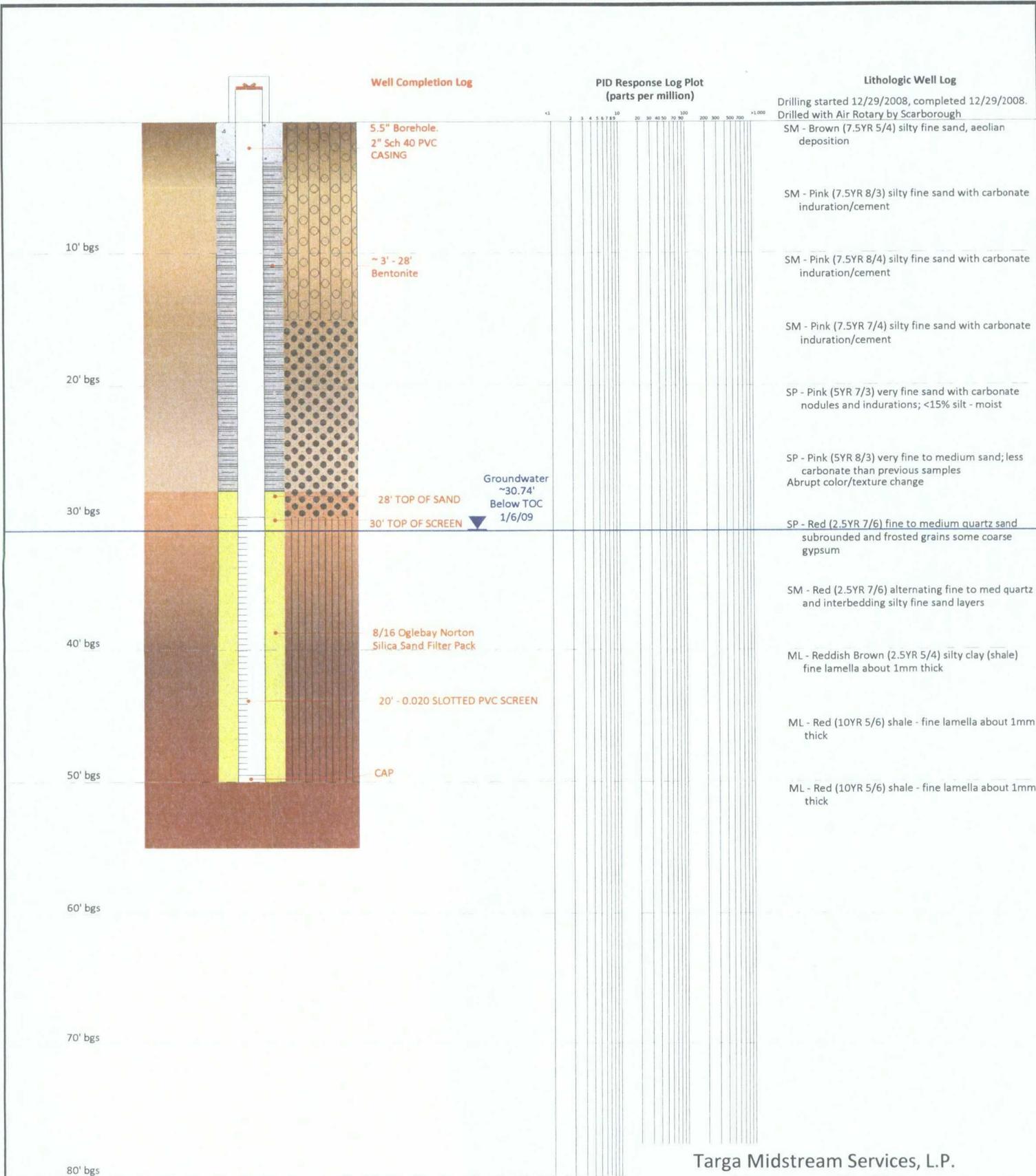
13. North (#2) Brine Pond Final Grading Looking West



14. North (#2) Brine Pond Final Grading Looking Northwest

**Appendix C**

**Monitoring Well Records**



Targa Midstream Services, L.P.  
Monument Gas Plant  
SW/4, Sec. 36, T-19-S, R-36-E  
Lea County, New Mexico

N 32° 36' 37.79"  
W 103° 18' 37.98"

**La**arson &  
Associates, Inc.  
Environmental Consultants

Well Completion Log

PID Response Log Plot  
(parts per million)

Lithologic Well Log

Drilling started 12/29/2008, completed 12/29/2008.  
Drilled with Air Rotary by Scarborough

5.5" Borehole.  
2" Sch 40 PVC  
CASING

~ 3' - 28'  
Bentonite

28' TOP OF SAND  
30' TOP OF SCREEN

Groundwater  
~31.26'  
Below TOC  
1/6/09

8/16 Oglebay Norton  
Silica Sand Filter Pack

20' - 0.020 SLOTTED PVC SCREEN

CAP

SM - Brown (7.5YR 5/3) silty fine sand, aeolian  
surface sand

SM/CA - Light Gray (7.5YR 7/1) silty very fine sand  
with carbonate induration

SP - Pink (7.5YR 7/3) very fine sand; <15% silty

SM - Light Greenish Gray (7.5YR 7/4) silty to very  
fine sand

SP - White (2.5YR 8/1) very fine sand

SP - White (2.5YR 8/1) very fine to fine sand

SW - Light Reddish Brown (2.5YR 7/3) fine to coarse  
sand round to subangular  
Abrupt color change

ML - Red (2.5YR 5/6) silty clay- shale slightly moist

ML - Reddish Brown (2.5YR 4/6) silty clay- shale  
slightly moist

ML - Red (2.5YR 5/6) silty clay- shale slightly moist

ML - Reddish Brown (2.5YR 4/4) silty clay- shale  
slightly moist

10' bgs

20' bgs

30' bgs

40' bgs

50' bgs

60' bgs

70' bgs

80' bgs

Targa Midstream Services, L.P.  
Monument Gas Plant  
SW/4, Sec. 36, T-19-S, R-36-E  
Lea County, New Mexico

N 32° 36' 37.79"  
W 103° 18' 37.98"