

---

---

**ATTACHMENT 1**

**Monitor Well Boring Logs, Monitor Well  
Construction Logs, Monitor Well  
Development Sheets**

---

---

# Project: Cooper Drum

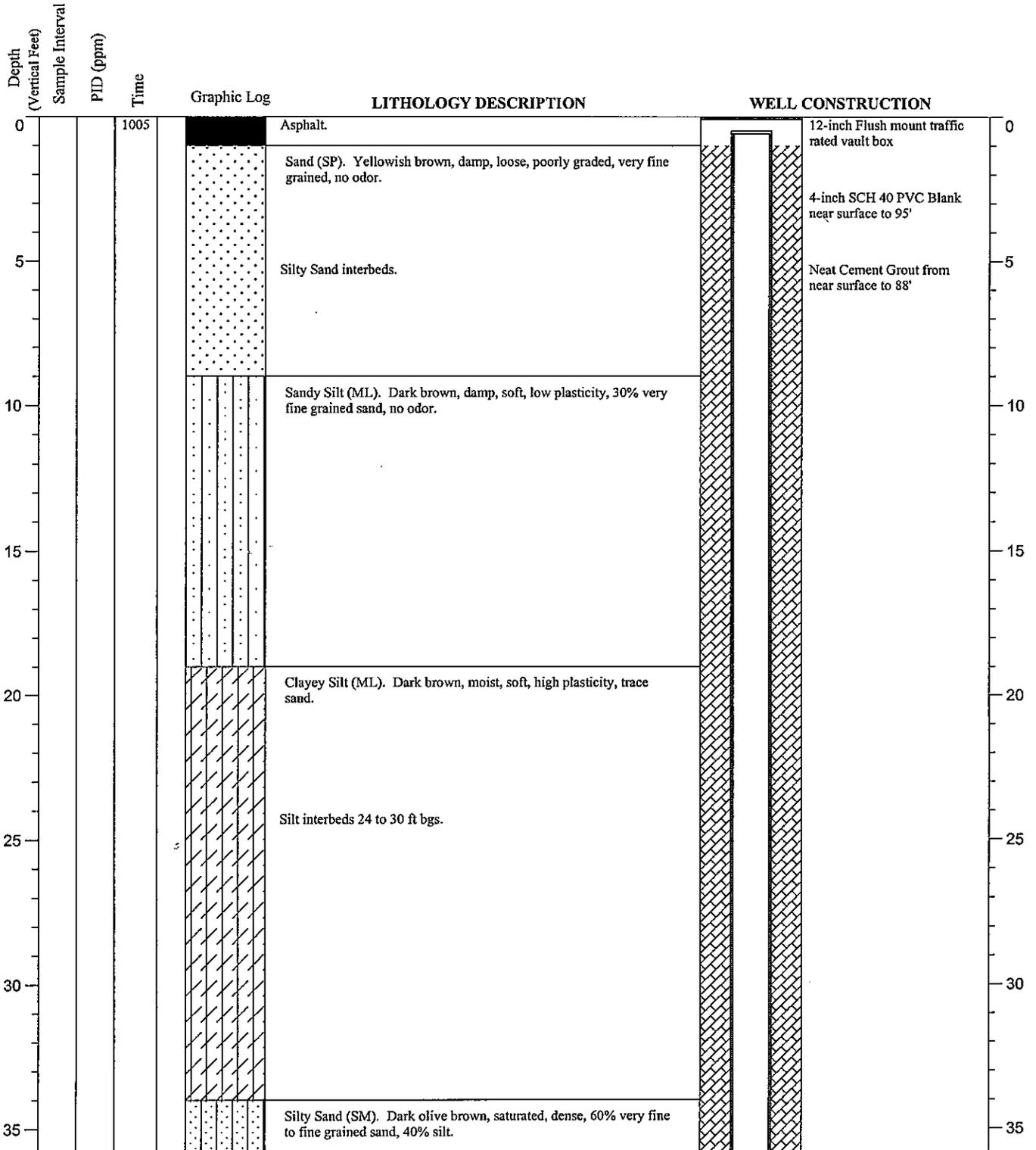
Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-25B

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 109 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/28/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/28/08	Screen Interval: 95-105 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-34 & CPT-35.

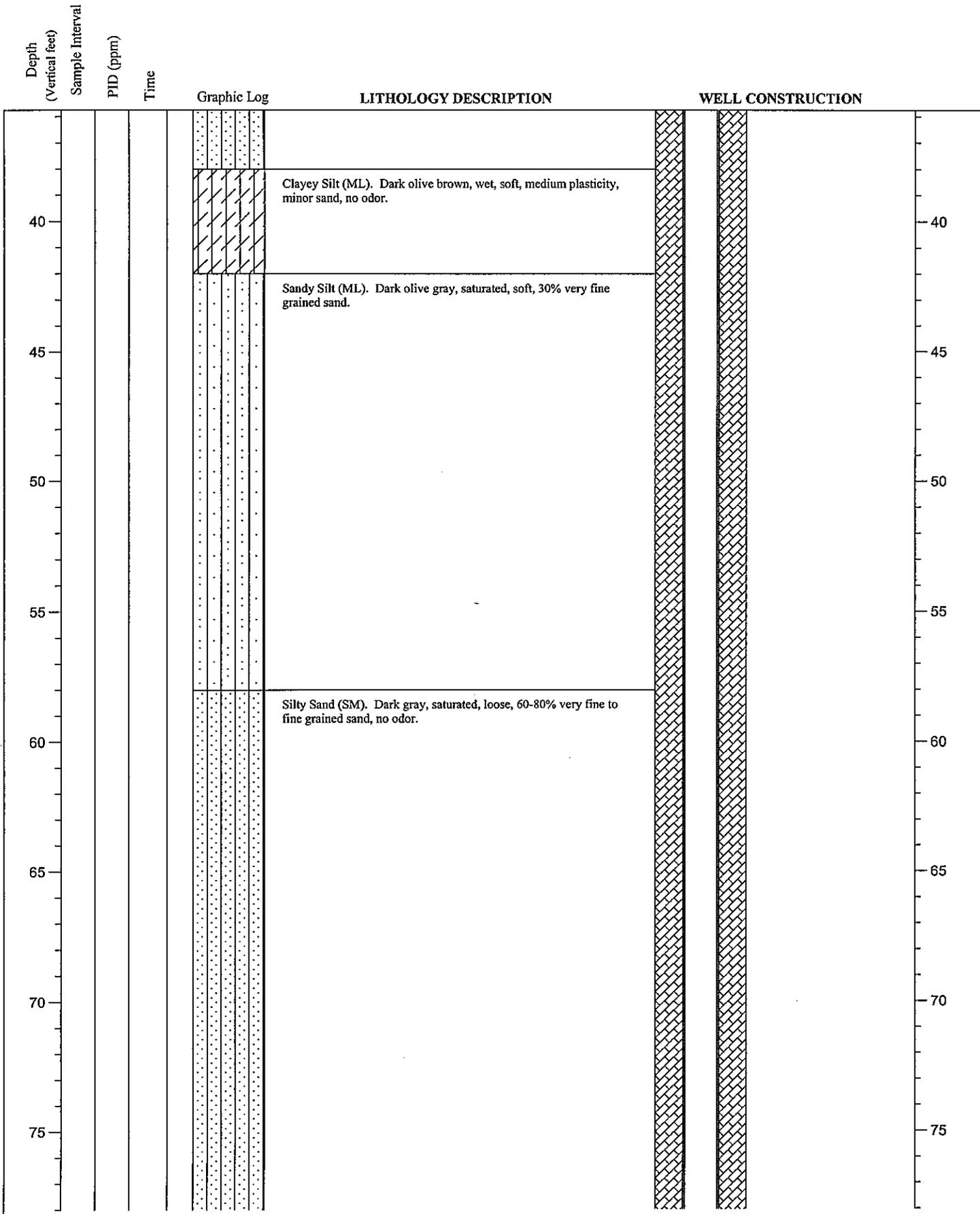


# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-25B

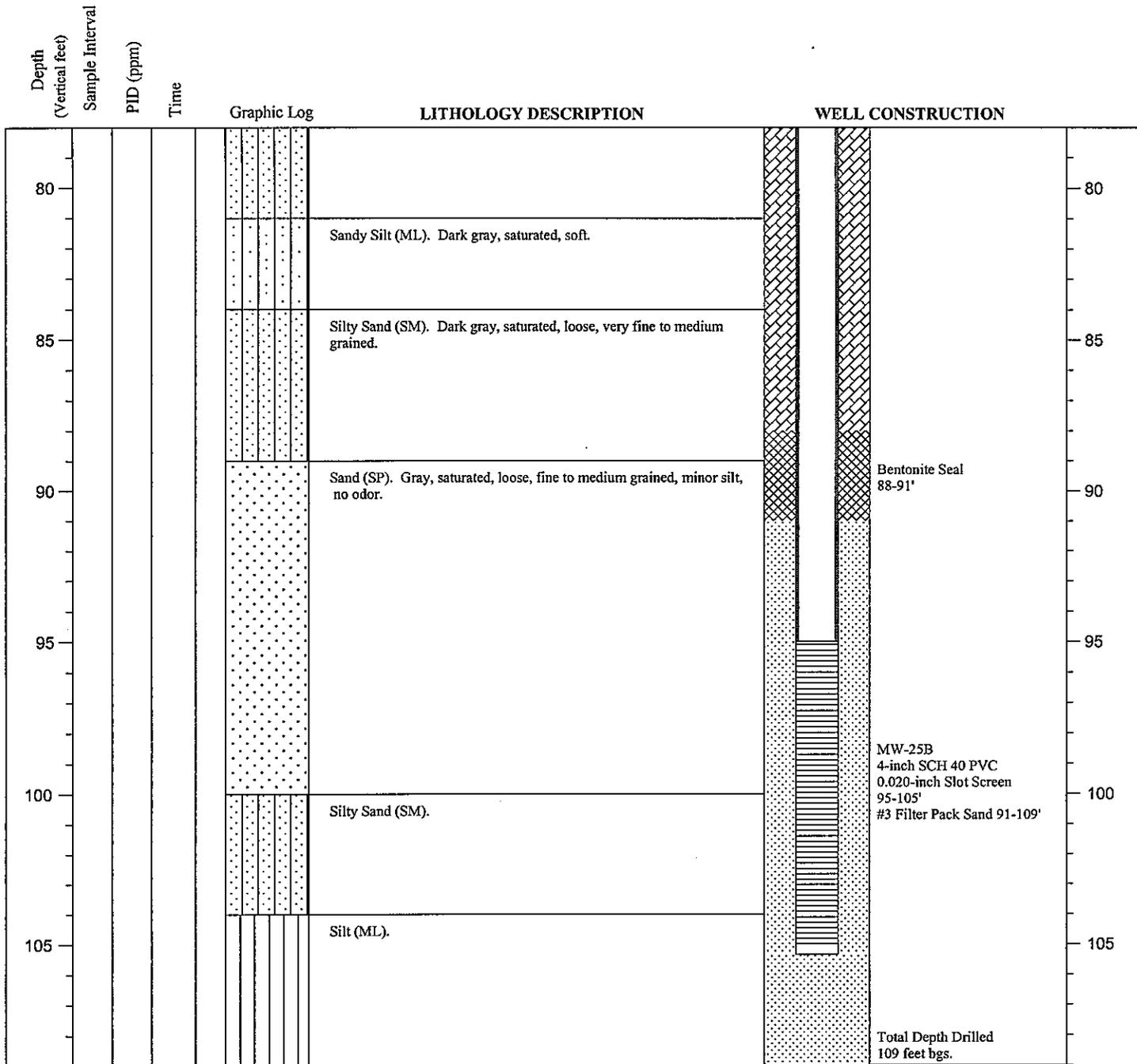


# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-25B



# Project: Cooper Drum

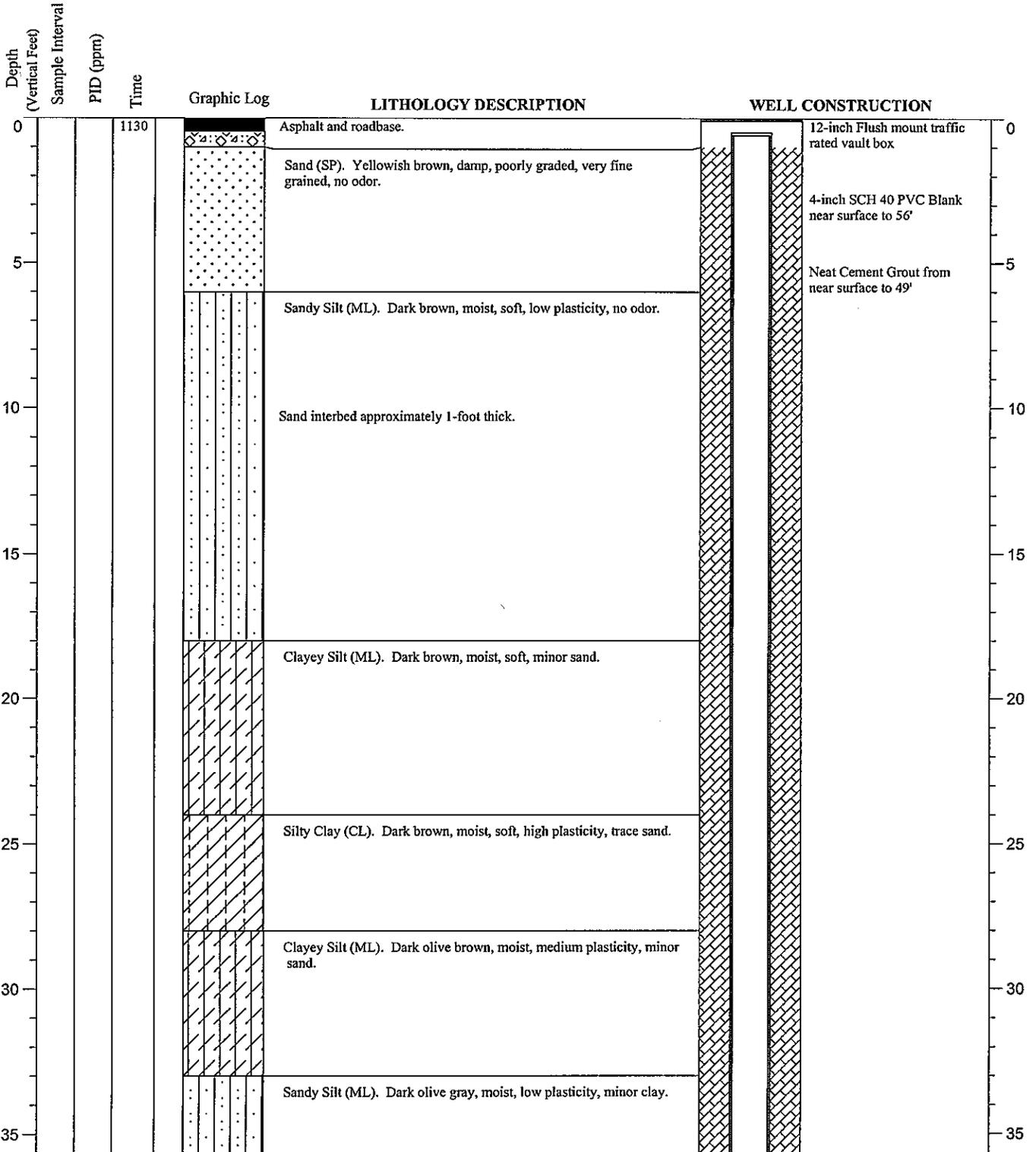
Location: Alley, South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-29A

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 67 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/26/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/26/08	Screen Interval: 56-66 ft	Slot Size: 0.020-inch
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-38.

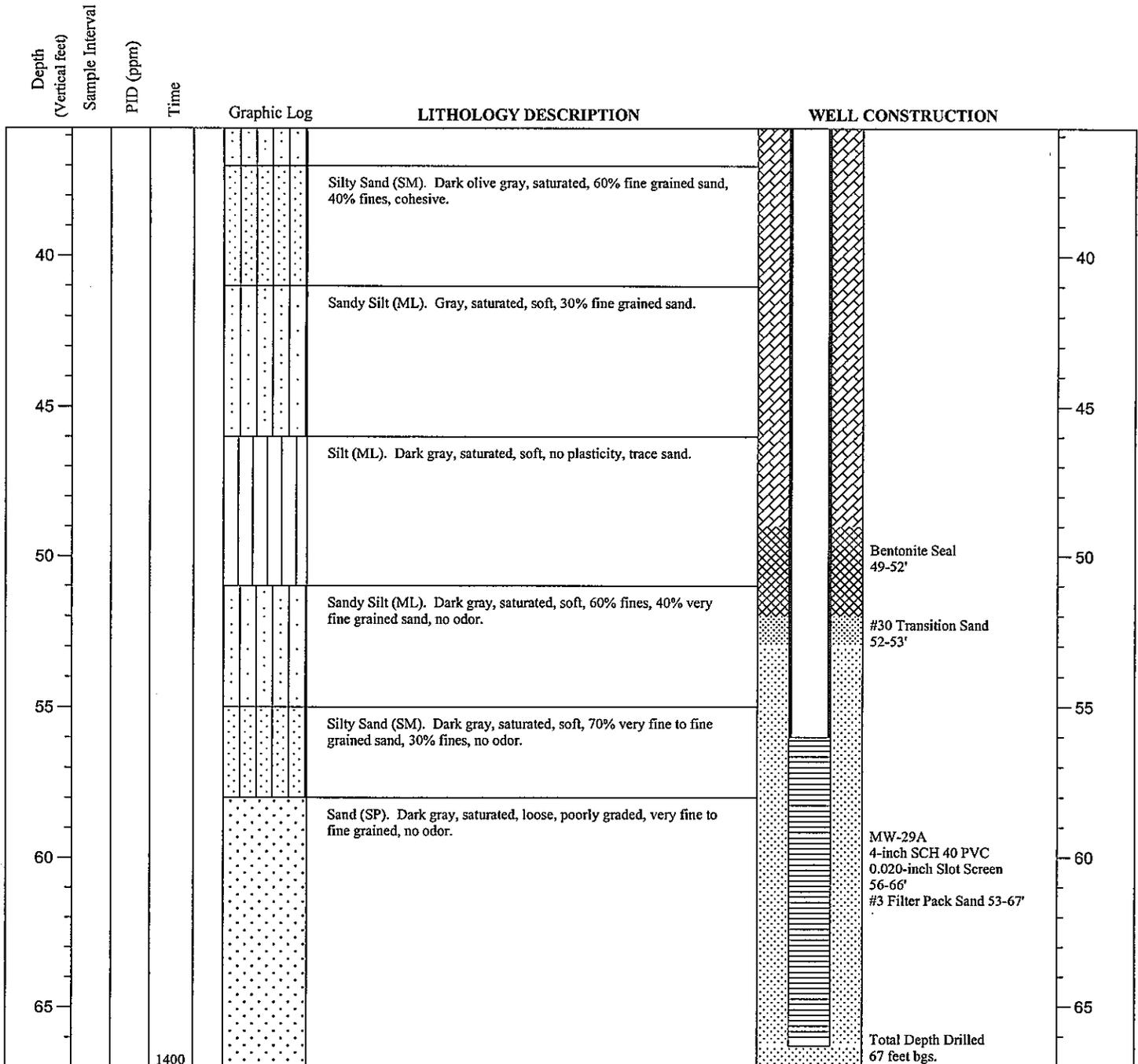


# Project: Cooper Drum

Location: Alley, South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-29A



# Project: Cooper Drum

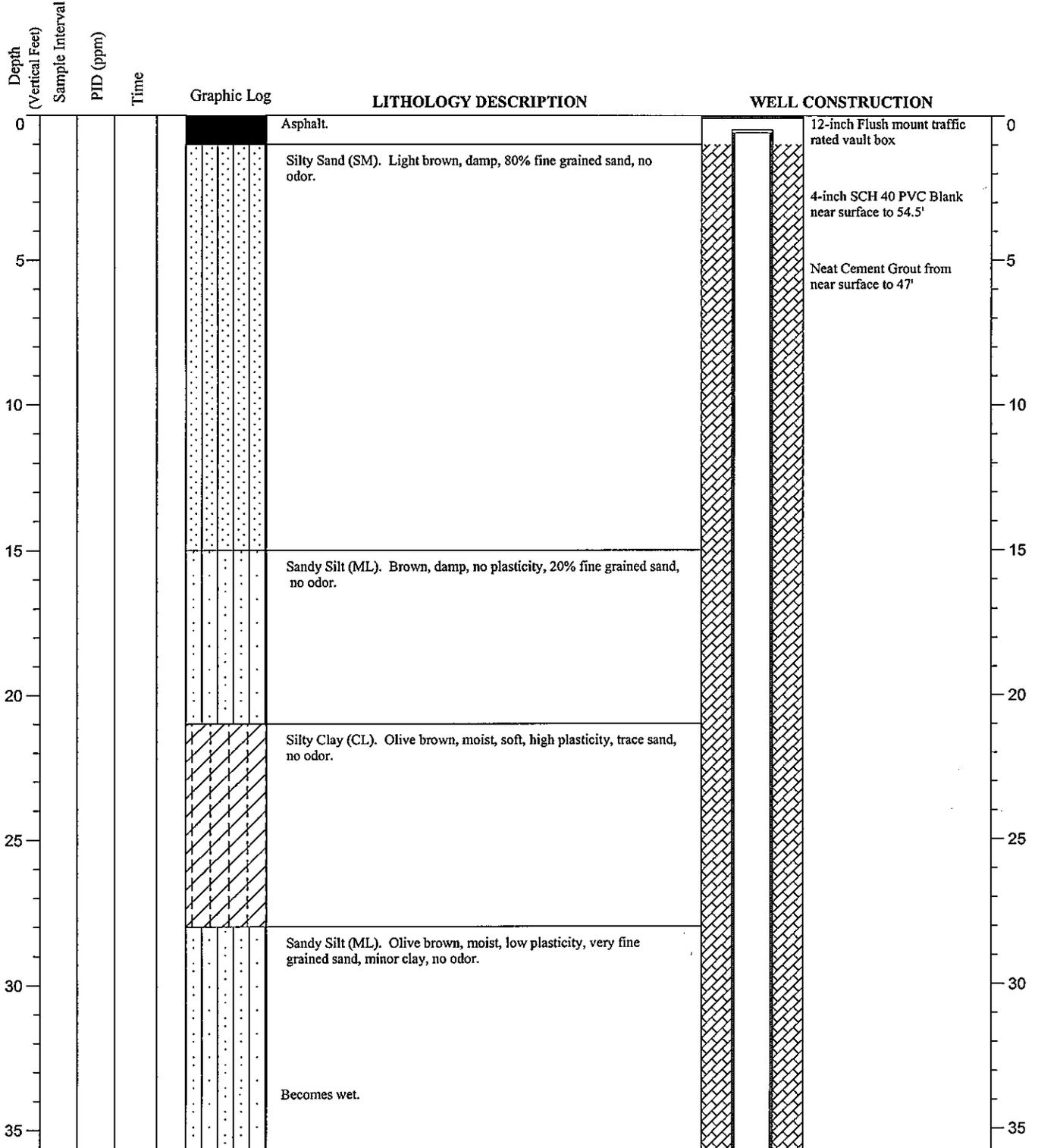
Location: Adella Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-31A

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 65.5 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/26/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/26/08	Screen Interval: 54.5-64.5 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-26.

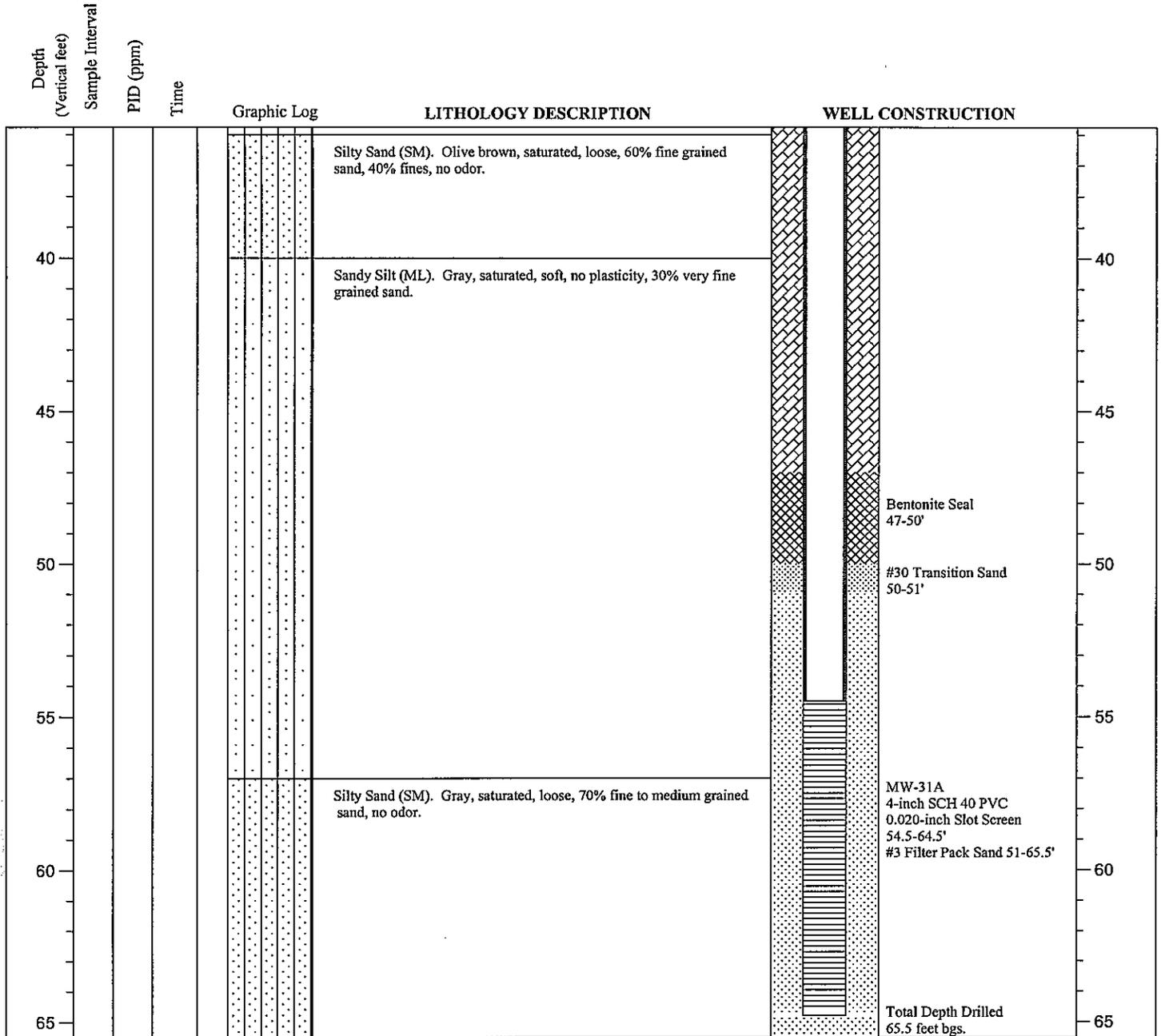


# Project: Cooper Drum

Location: Adella Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-31A



# Project: Cooper Drum

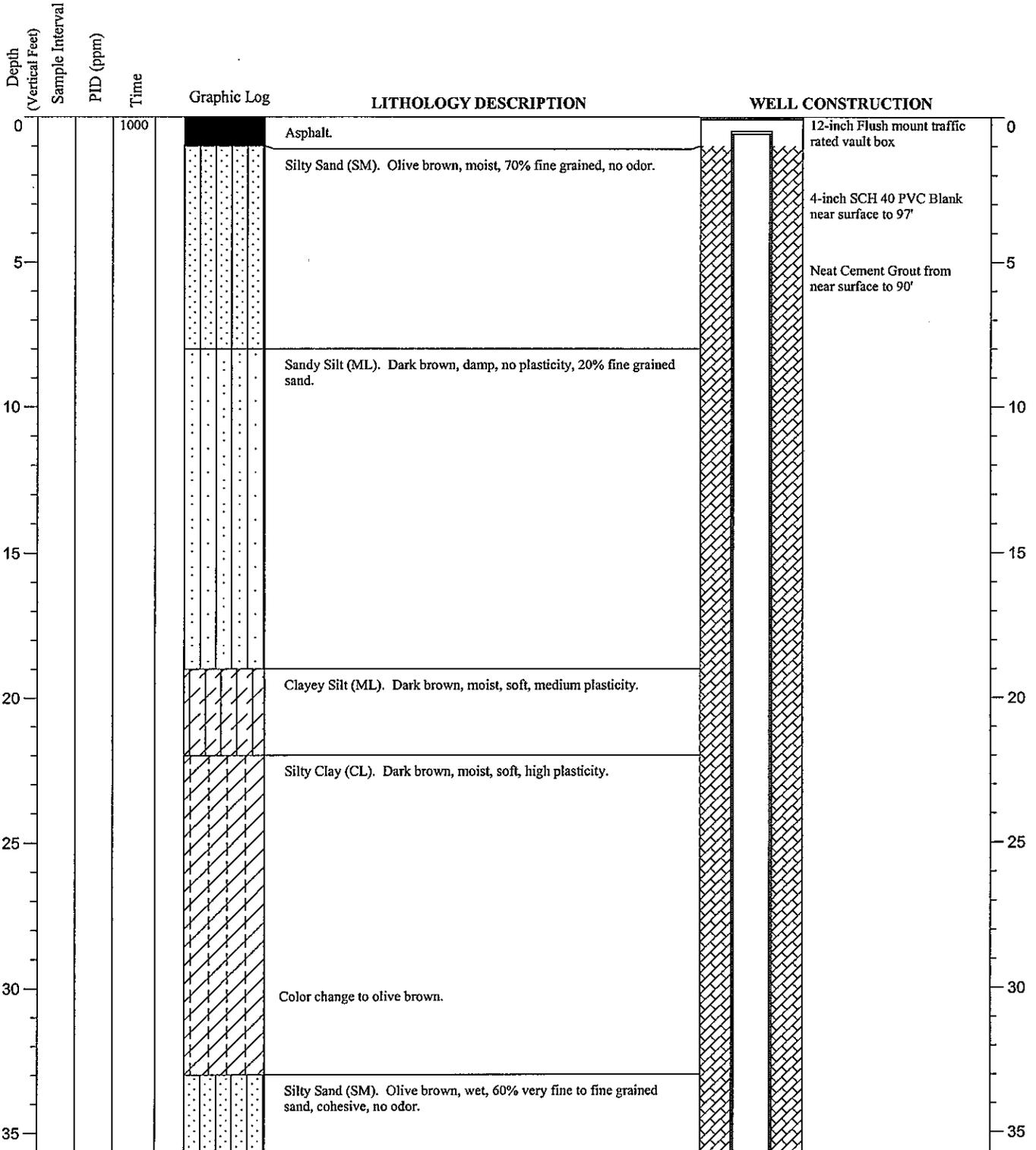
Location: Adella Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-31B

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 109 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/25/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/25/08	Screen Interval: 97-107 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-26.

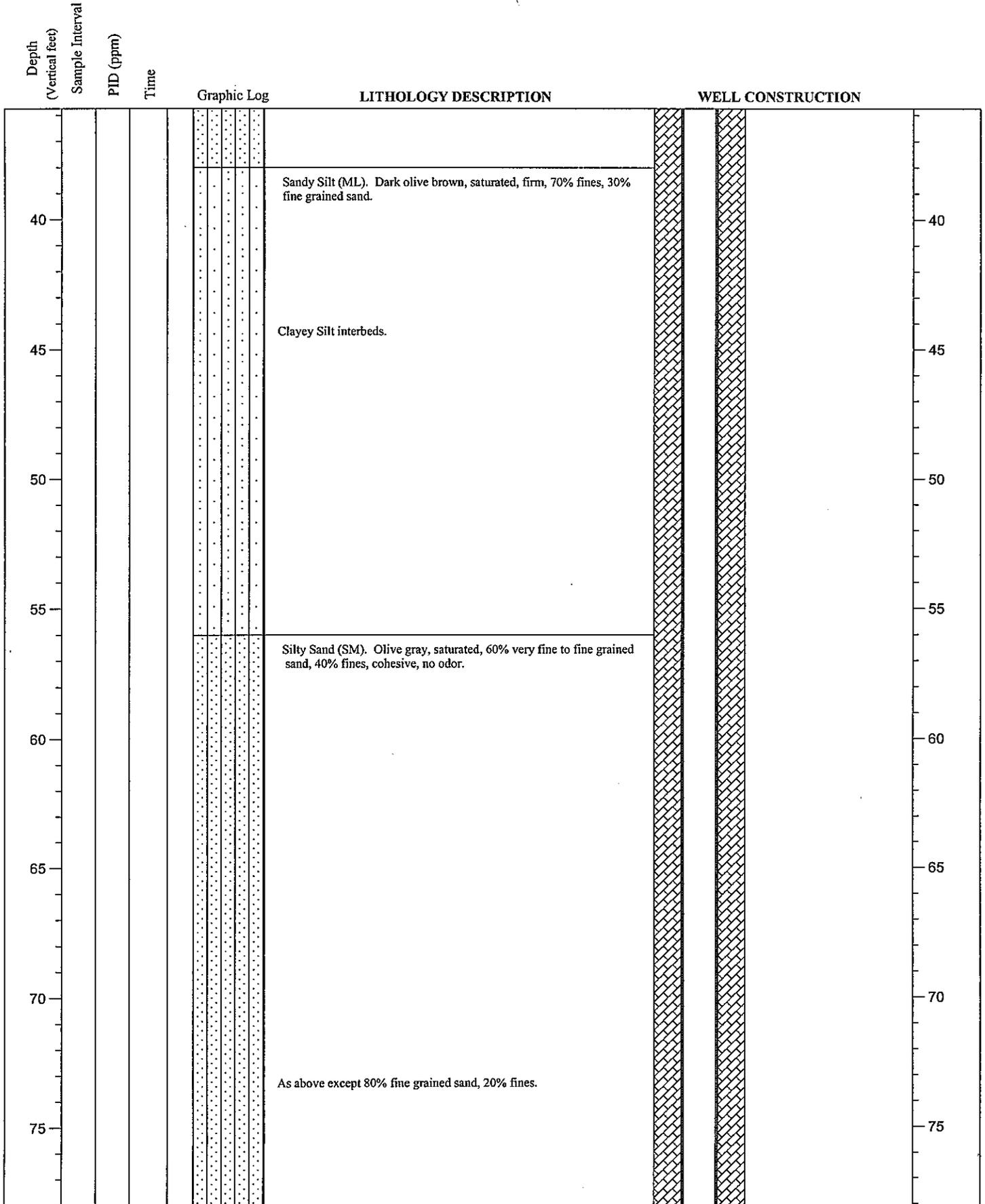


# Project: Cooper Drum

Location: Adella Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-31B

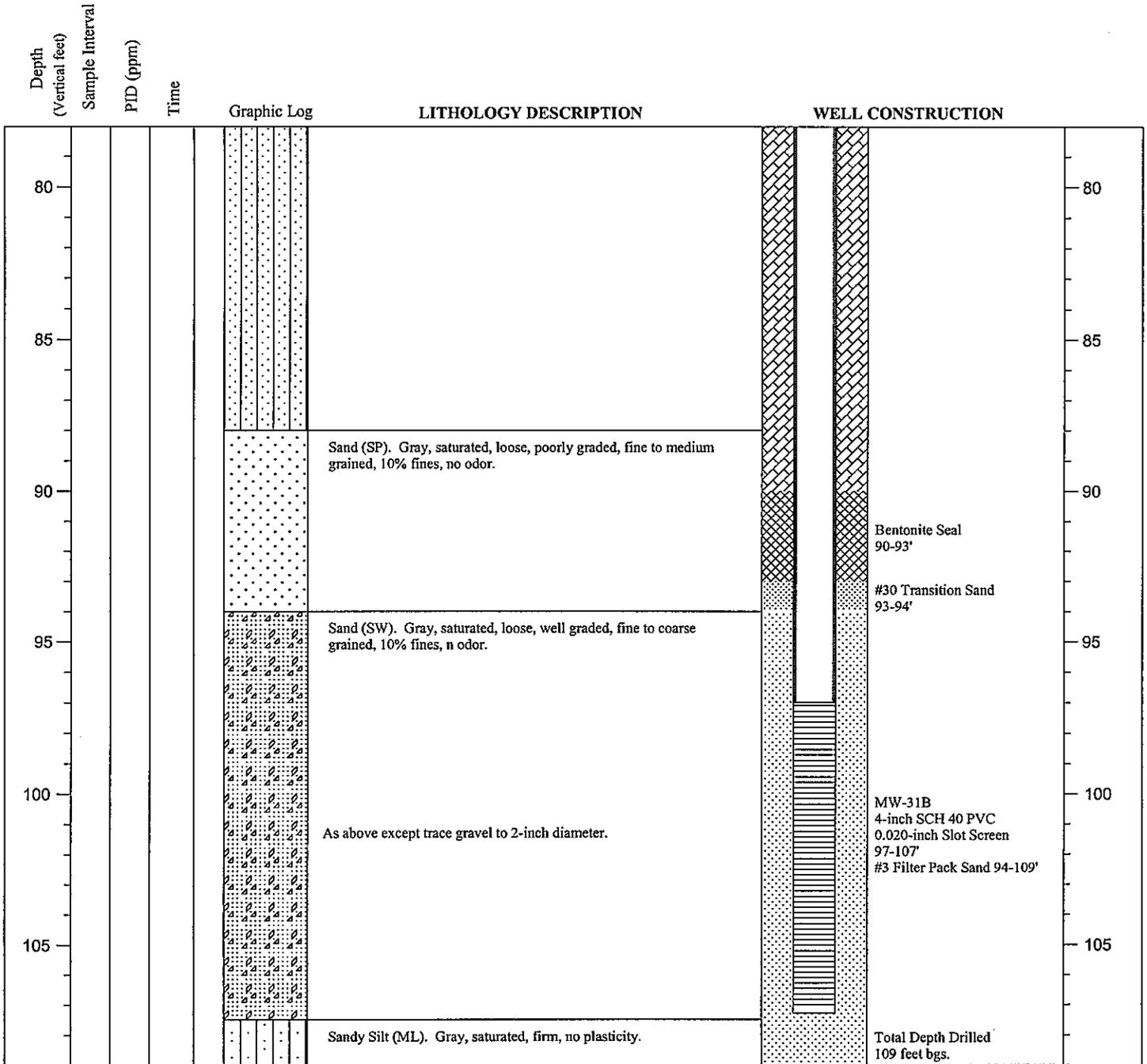


# Project: Cooper Drum

Location: Adella Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-31B



# Project: Cooper Drum

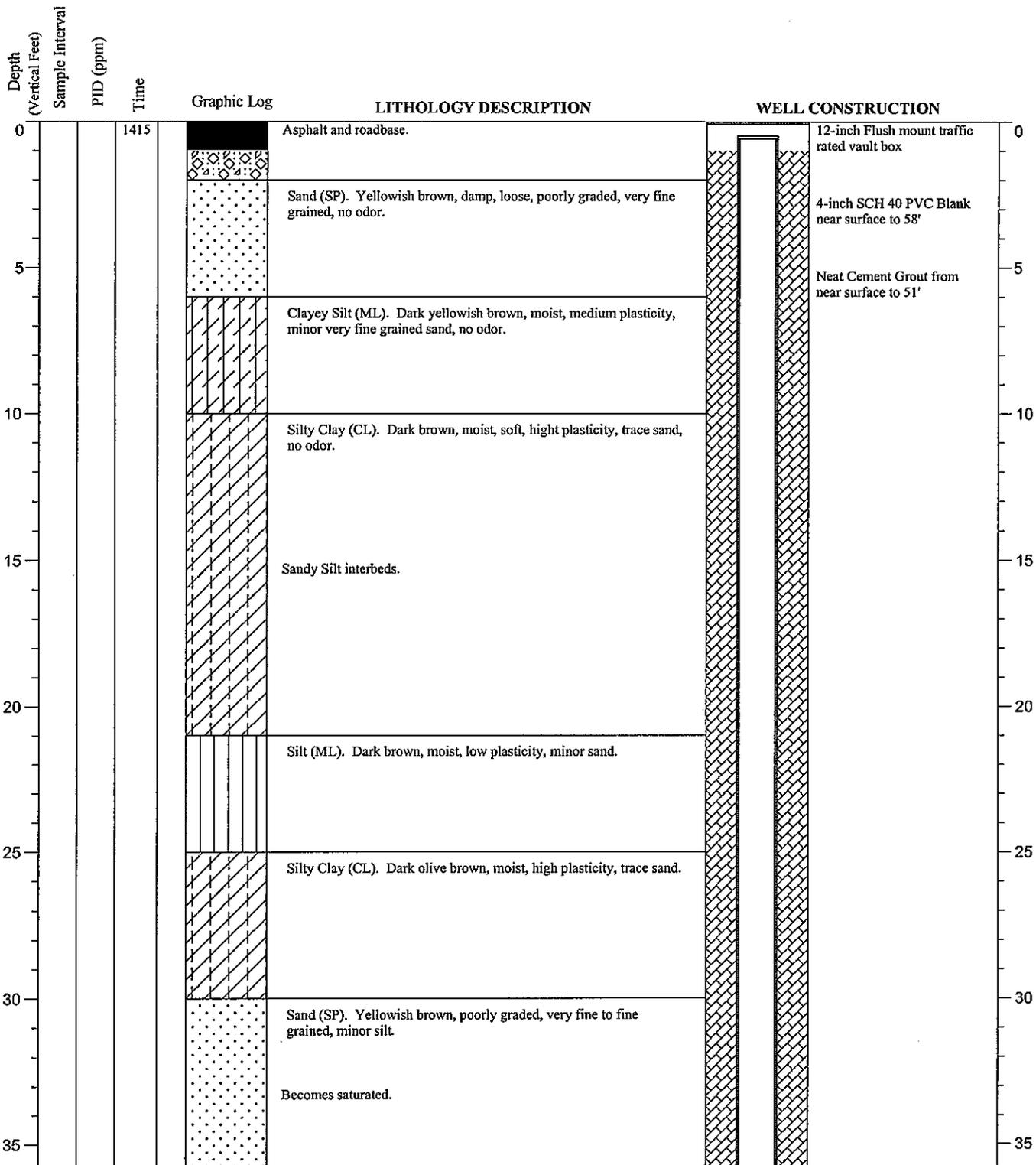
Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-34

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 69 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/28/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/28/08	Screen Interval: 58-68 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-40.



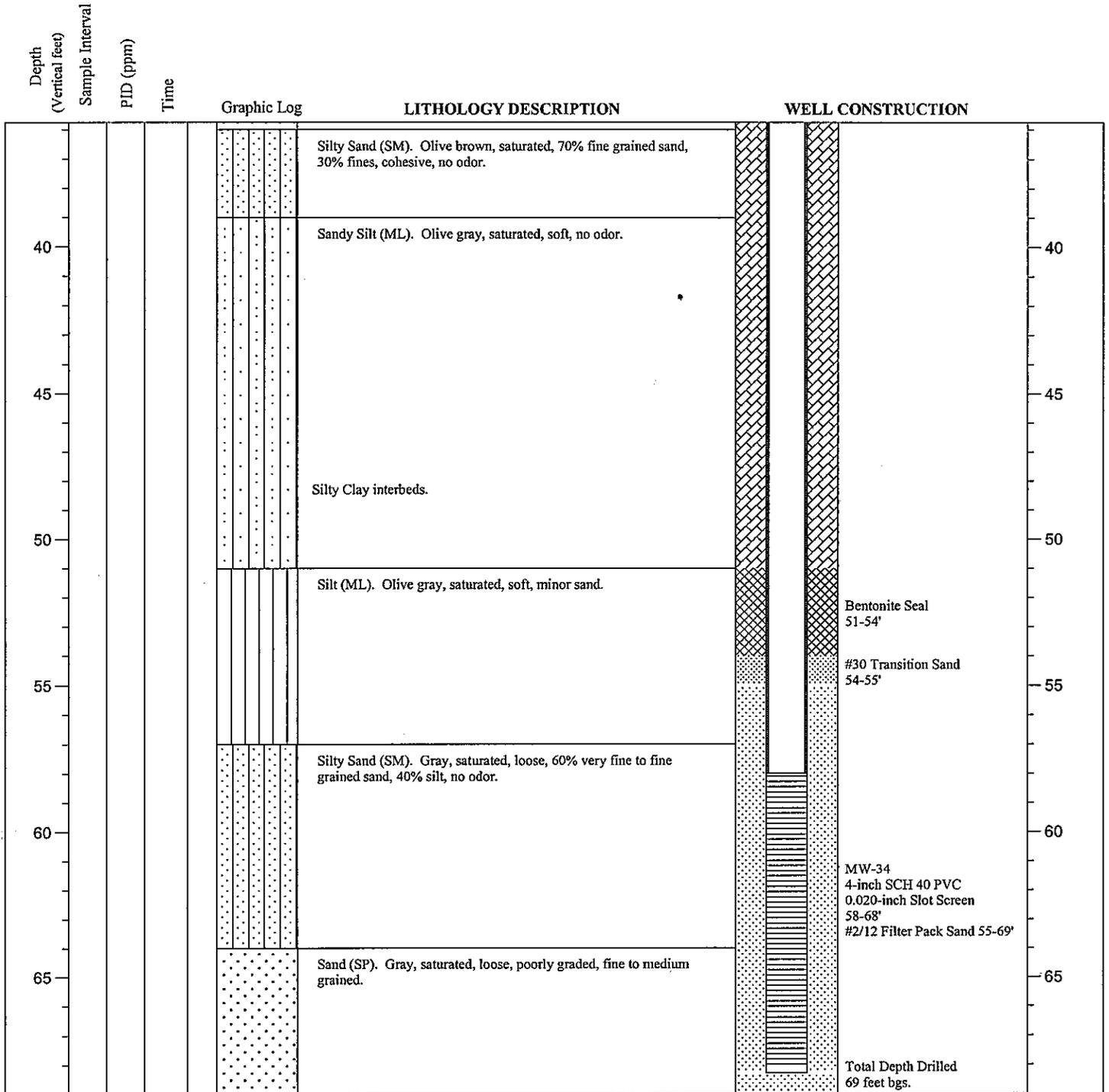
2870 Gateway Oaks Dr., Ste 150  
Sacramento, CA 95833  
916-679-2000

# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-34



# Project: Cooper Drum

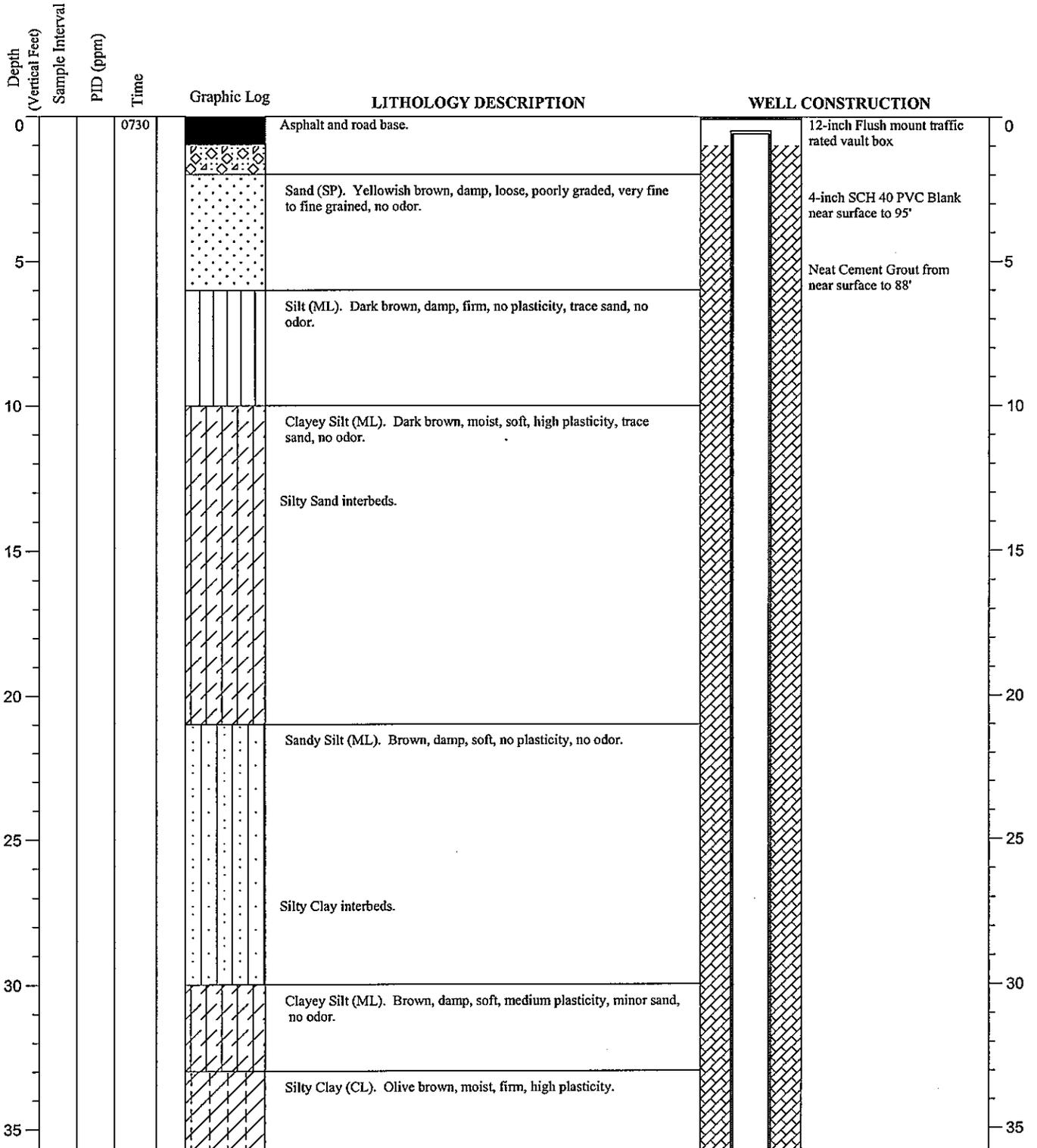
Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-35

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 106 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/27/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/27/08	Screen Interval: 95-105 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-40.

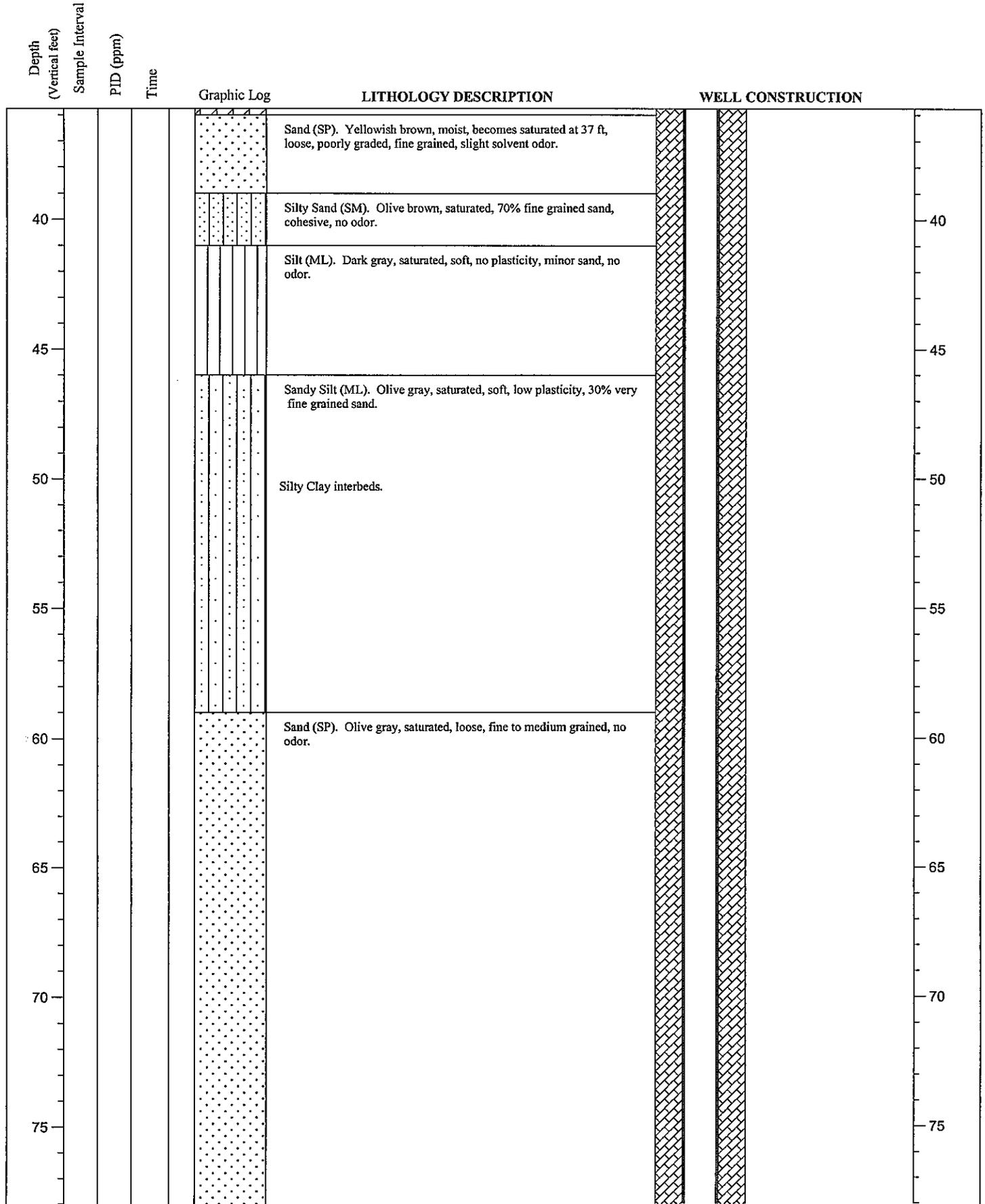


# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-35

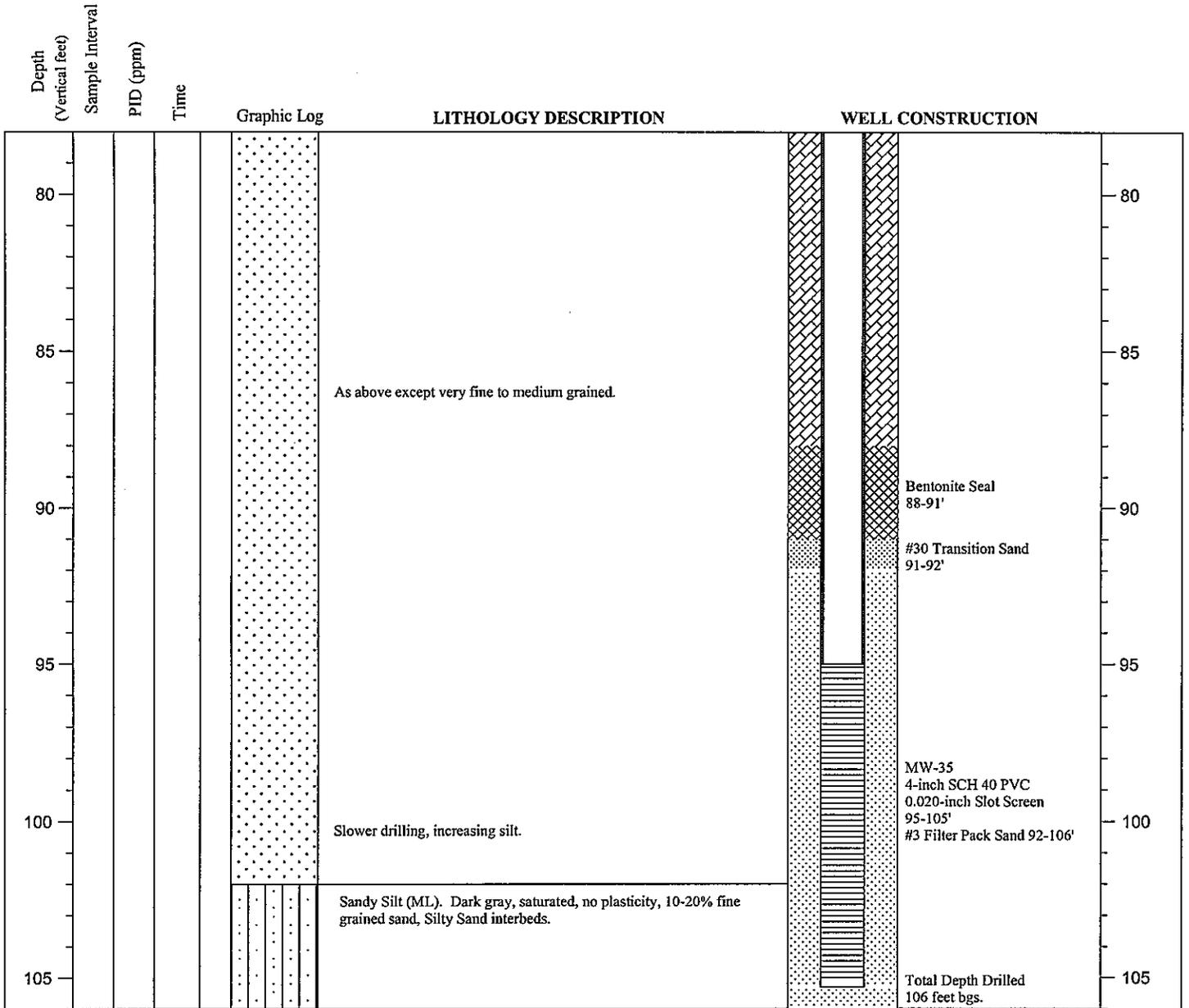


# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-35



# Project: Cooper Drum

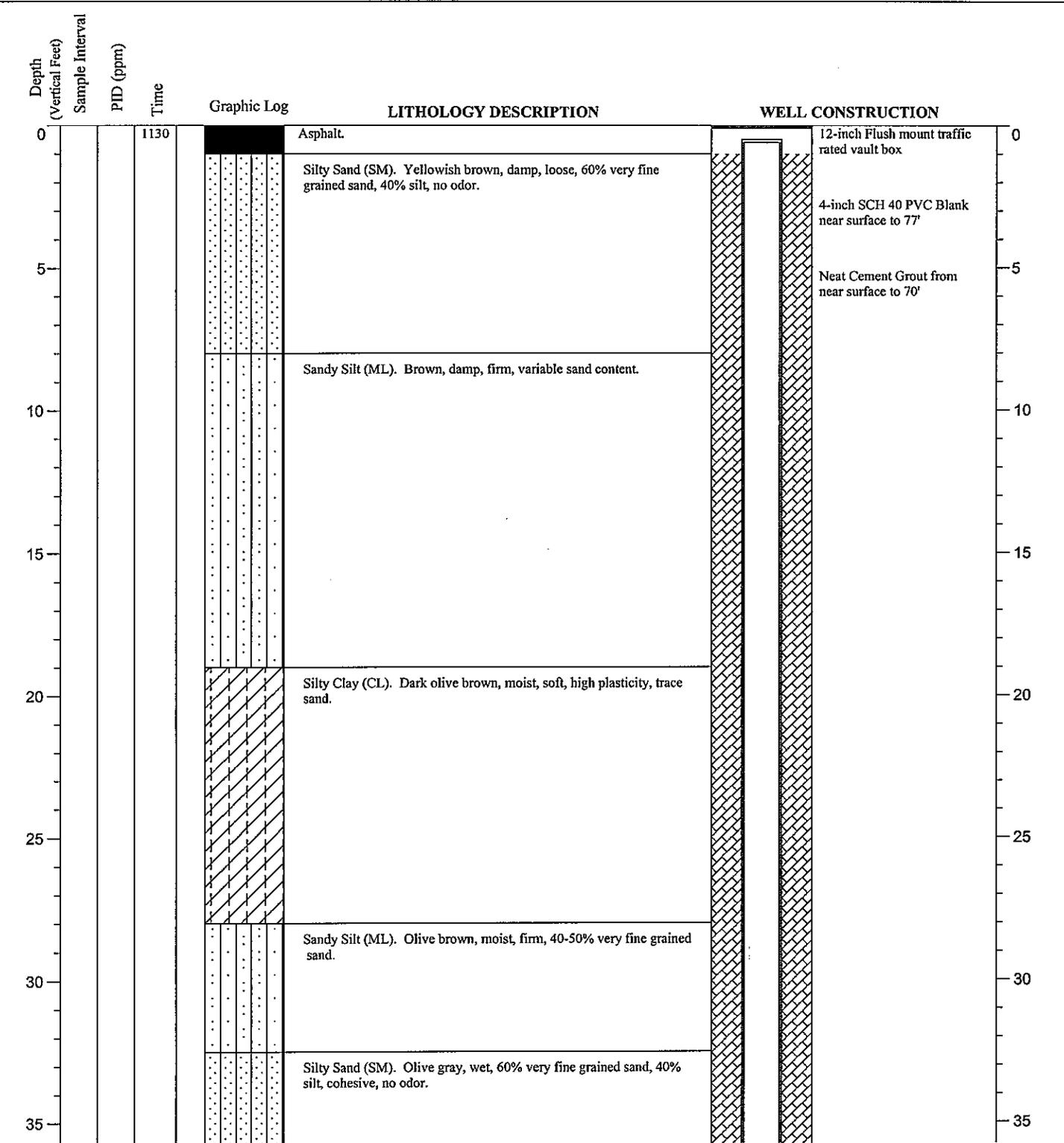
Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-36

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 89 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 3/4/08	Logged By: S. Lookingbill
Drill Rig: Marl M10	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 3/4/08	Screen Interval: 77-87 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-44.



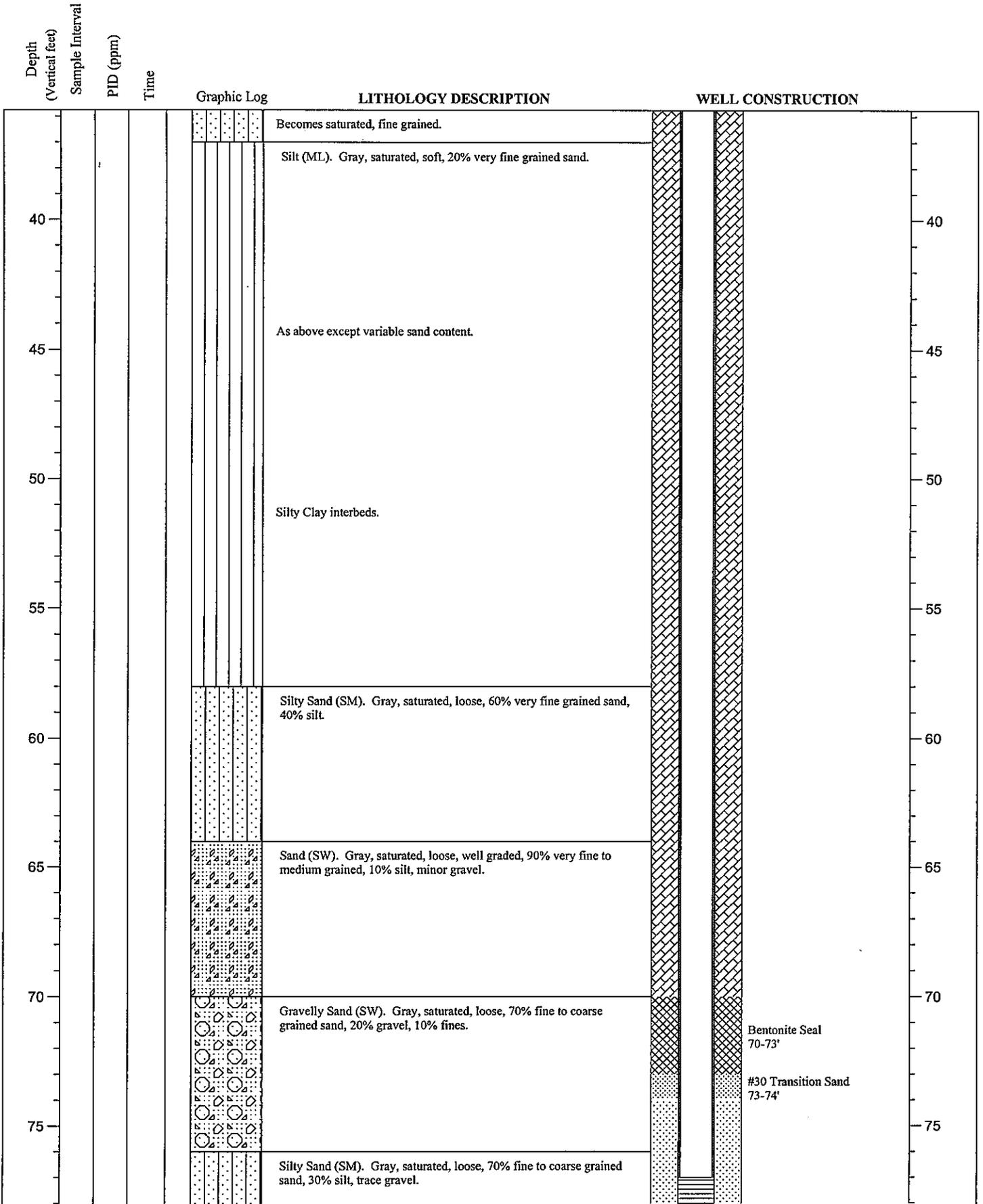
# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-36

MW-36

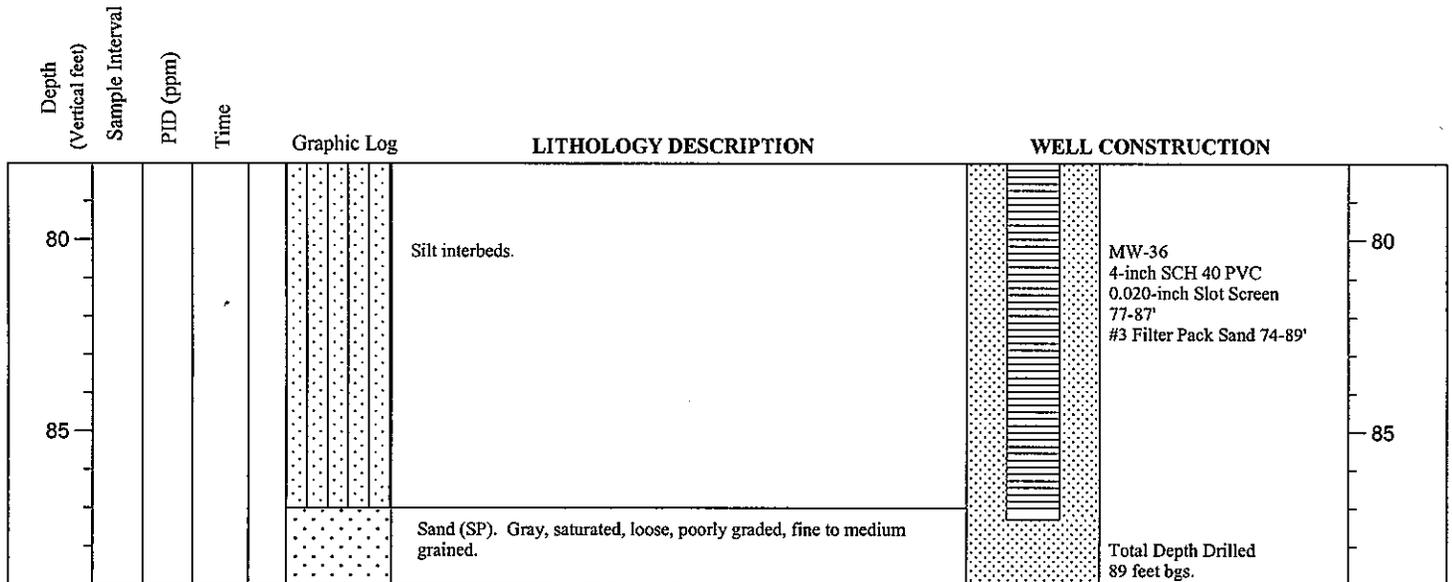


# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-36



# Project: Cooper Drum

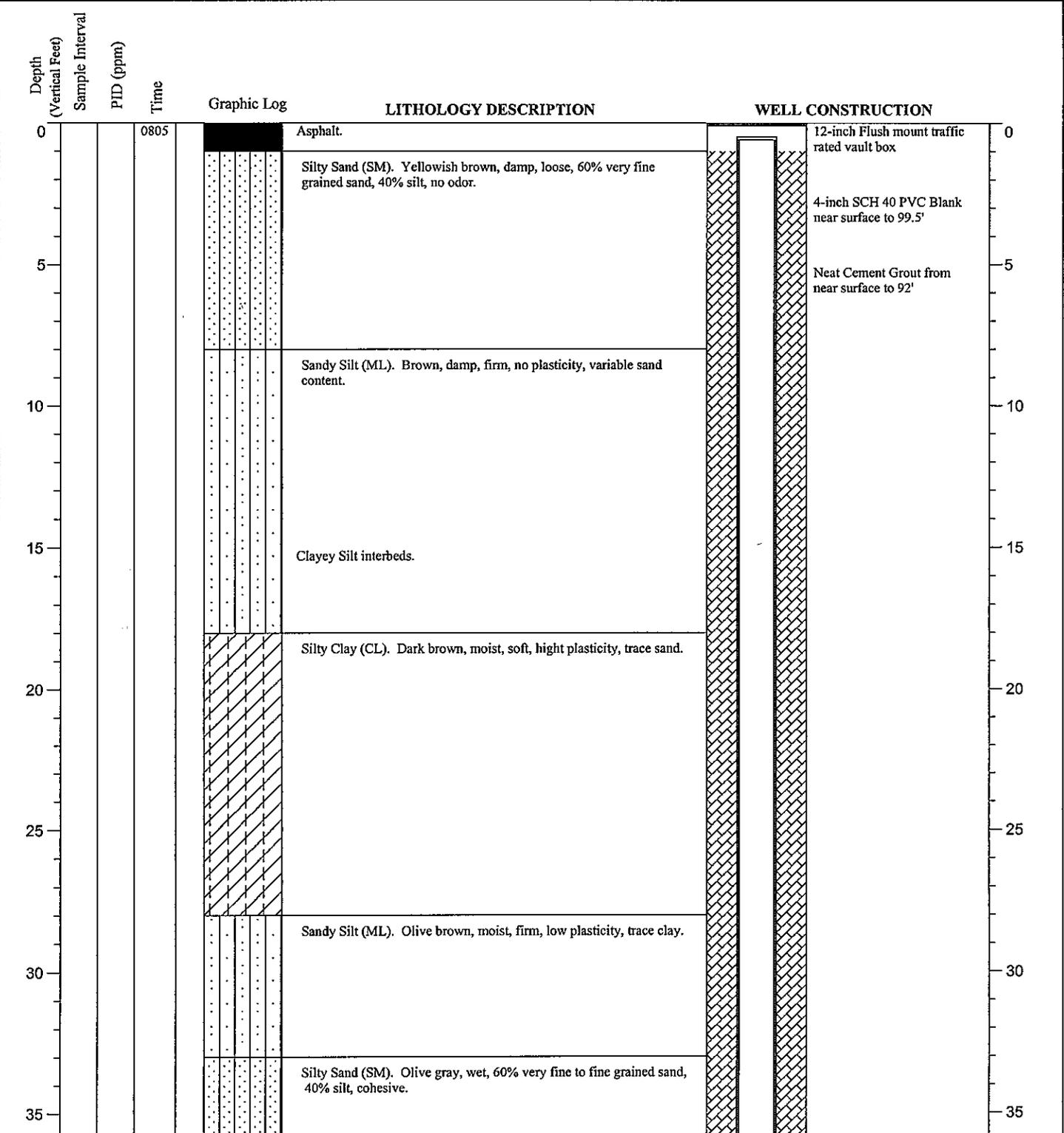
Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-37

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 111 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 3/5/08	Logged By: S. Lookingbill
Drill Rig: Marl M10	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 3/5/08	Screen Interval: 99.5-109.5 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-44.



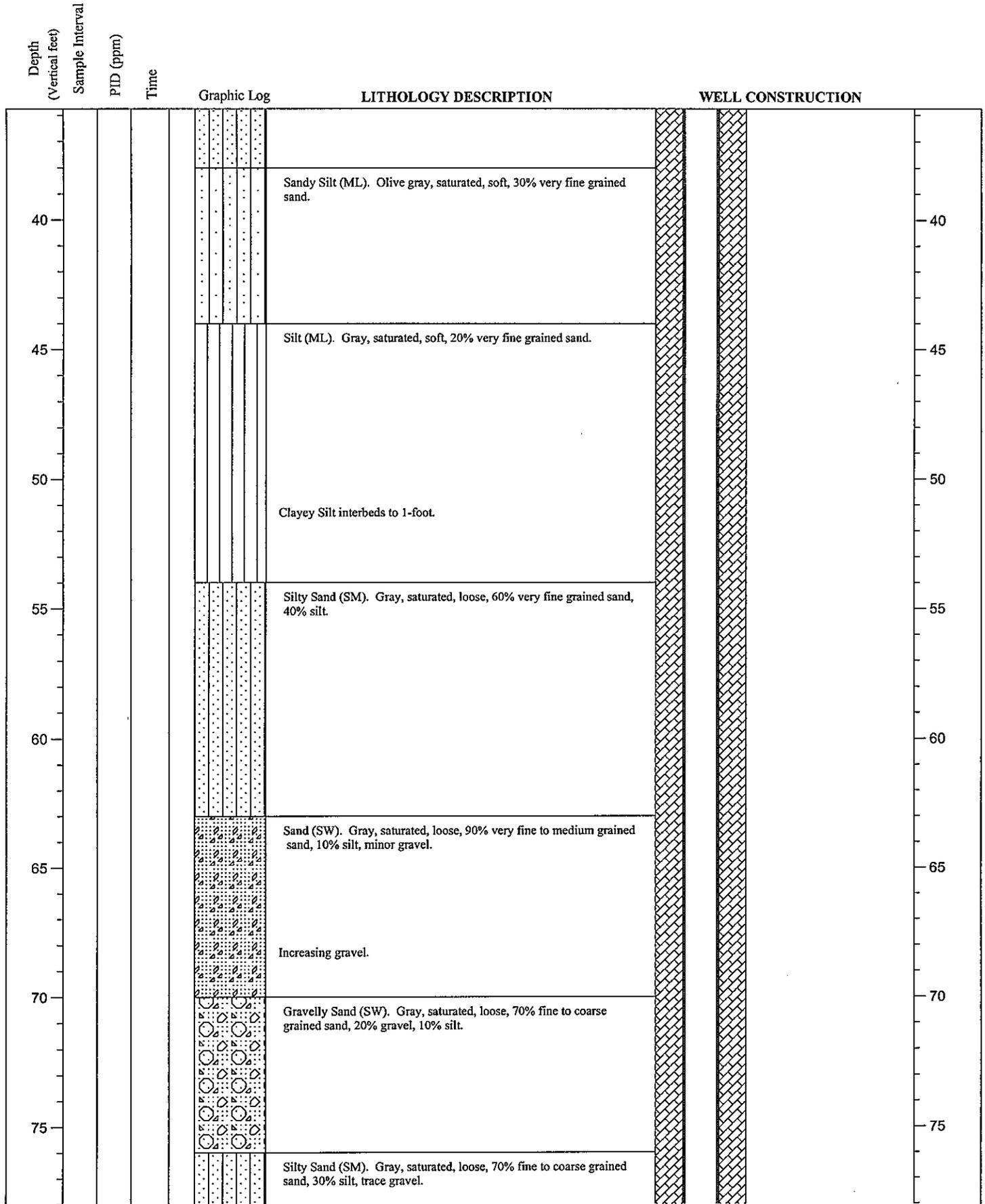
# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well:

MW-37

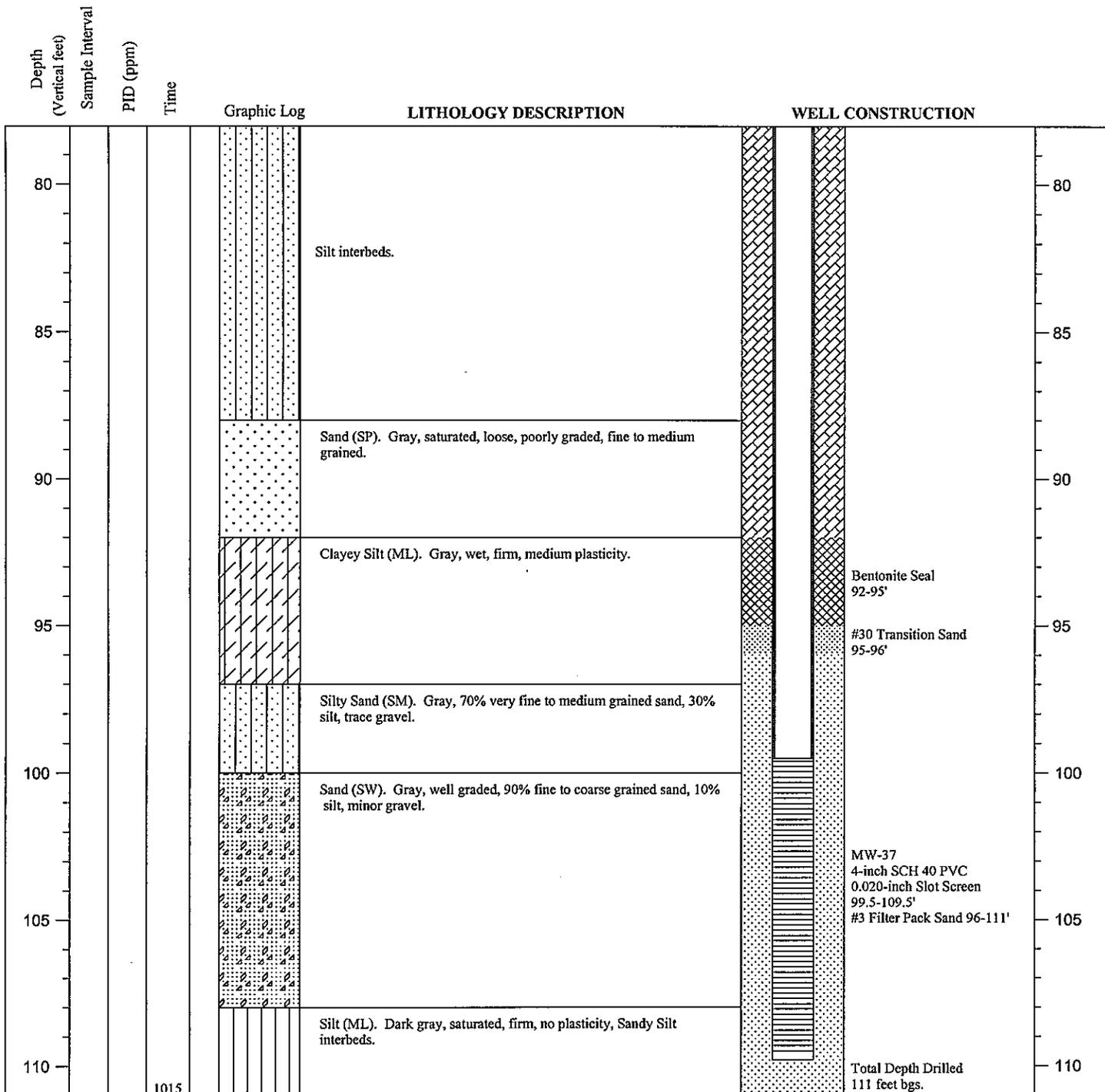


# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-37



1015

# Project: Cooper Drum

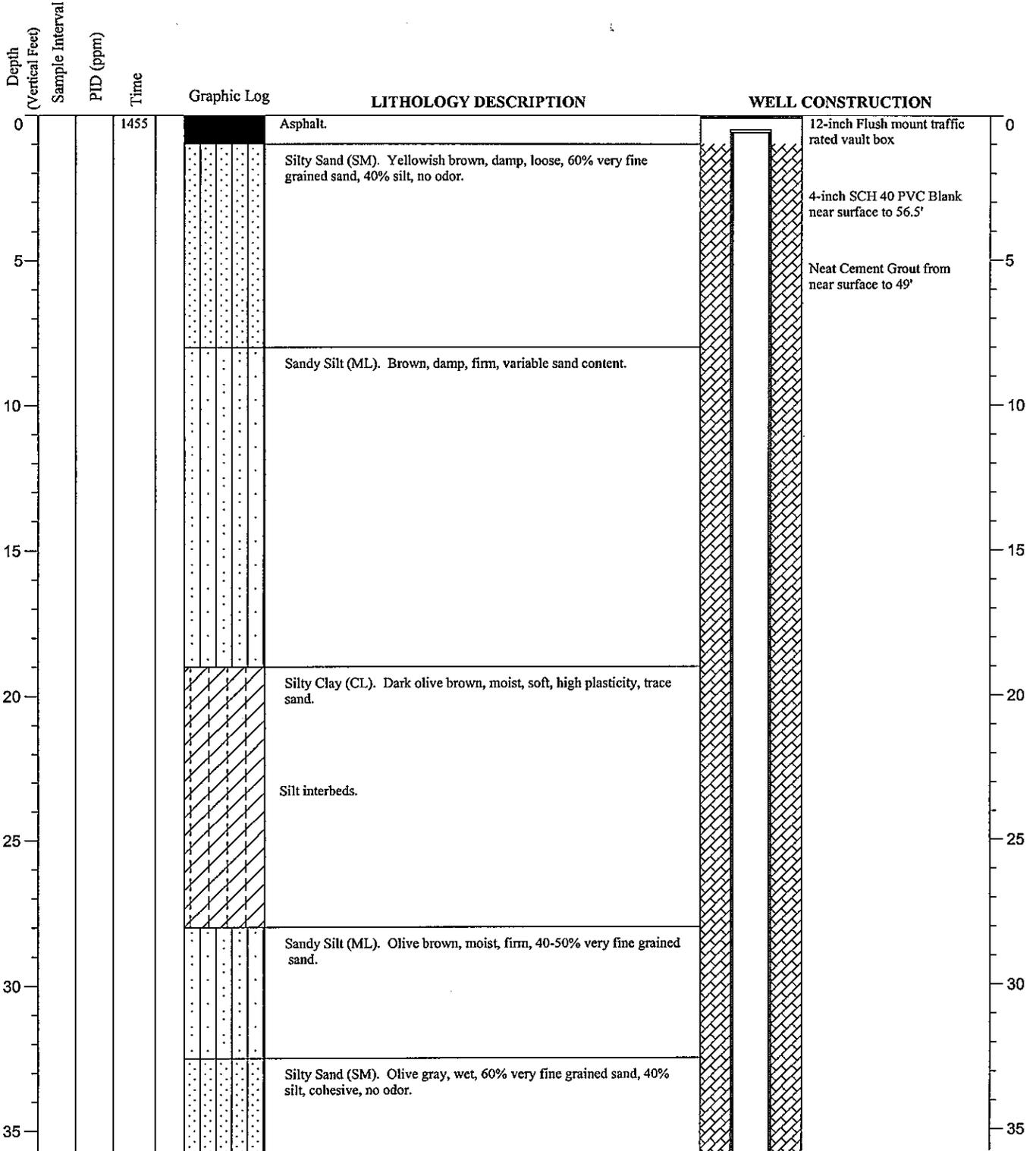
Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-38

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 68 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 3/4/08	Logged By: S. Lookingbill
Drill Rig: Marl M10	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 3/4/08	Screen Interval: 56.5-66.5 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-43.

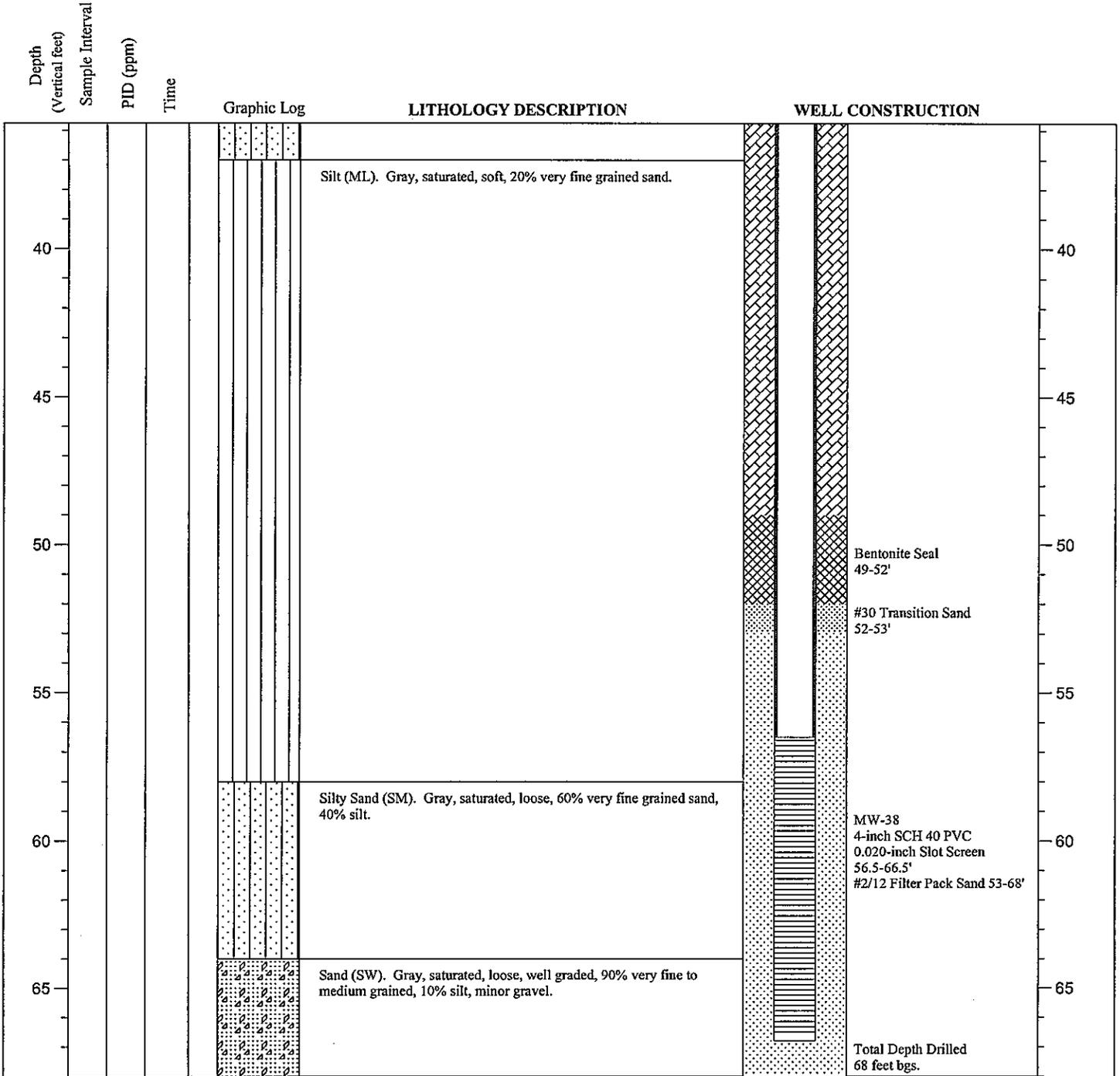


# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-38



# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

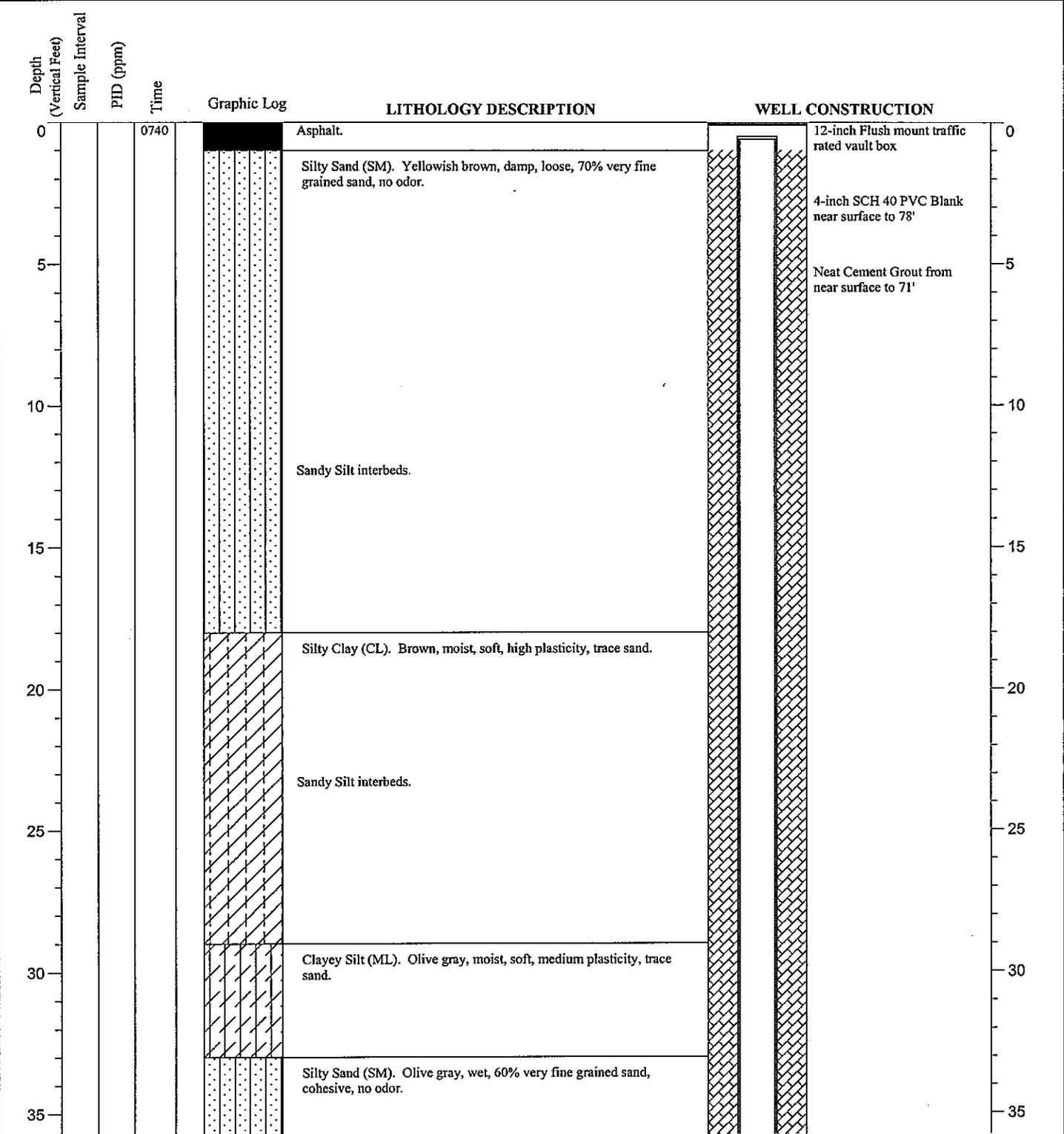
Project Number: 18500147

# Log of Monitoring Well: MW-39

MW-39

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 89 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/29/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/29/08	Screen Interval: 56.5-66.5 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-43.

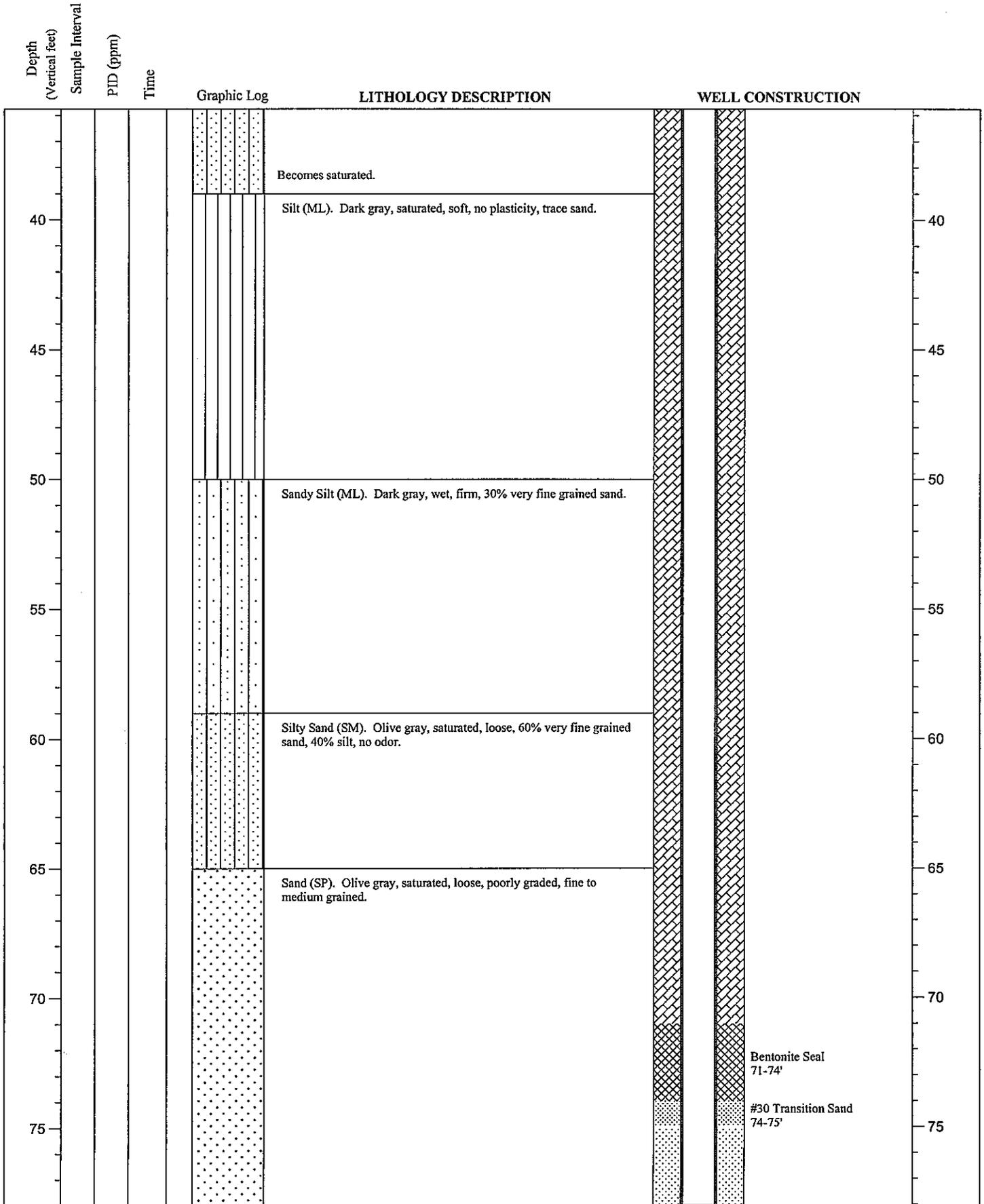


# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-39



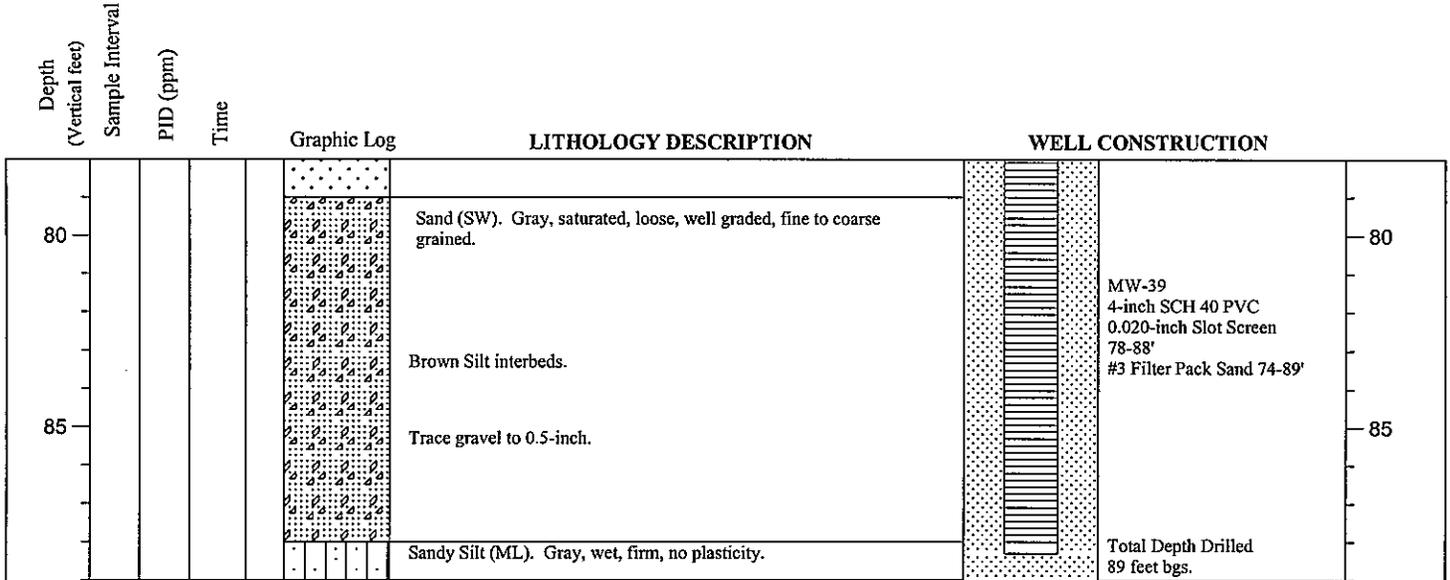
# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well:

MW-39



# Project: Cooper Drum

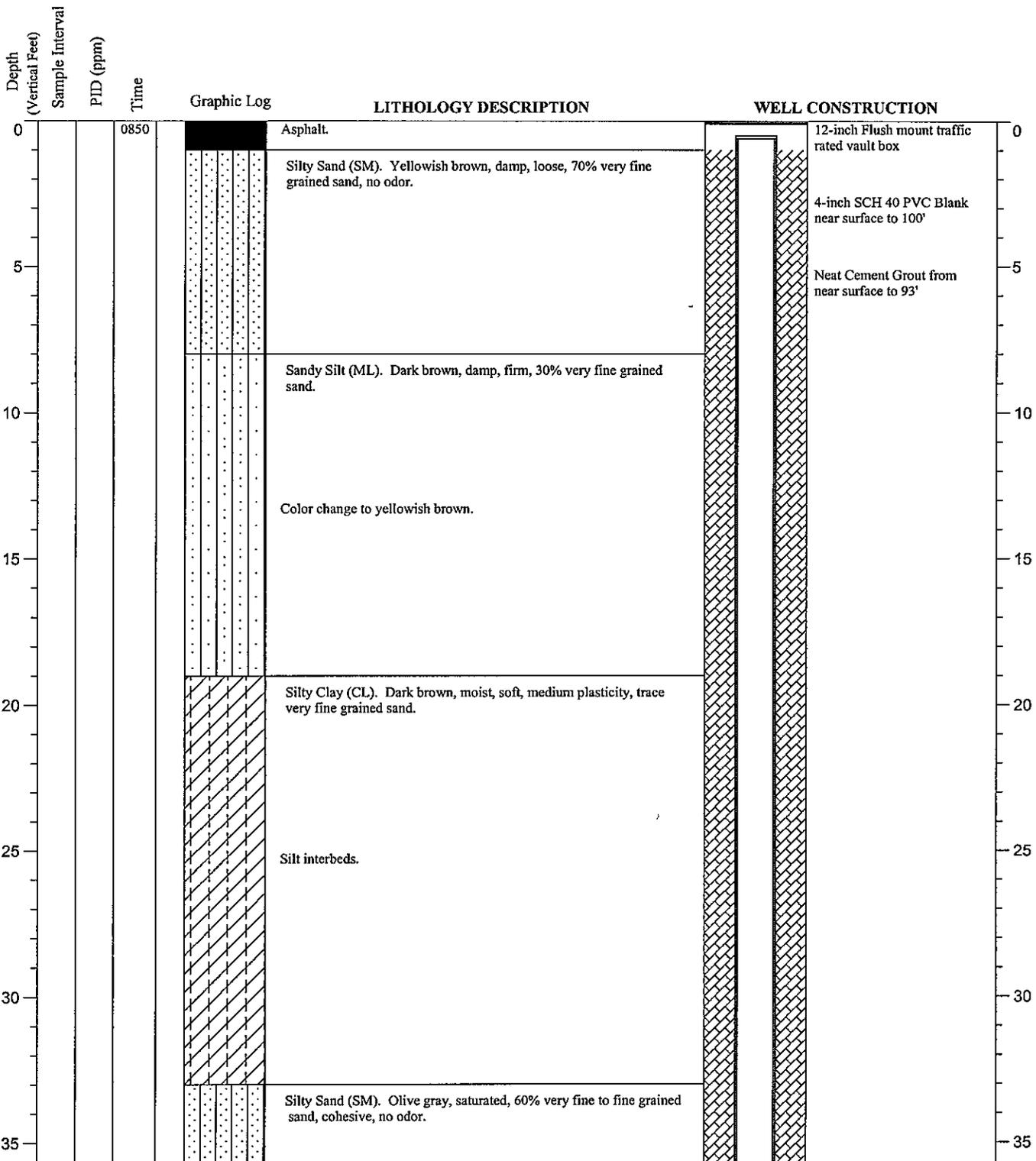
Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-40

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 111 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 3/3/08	Logged By: S. Lookingbill
Drill Rig: Marl M10	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 3/3/08	Screen Interval: 100-110 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-43.



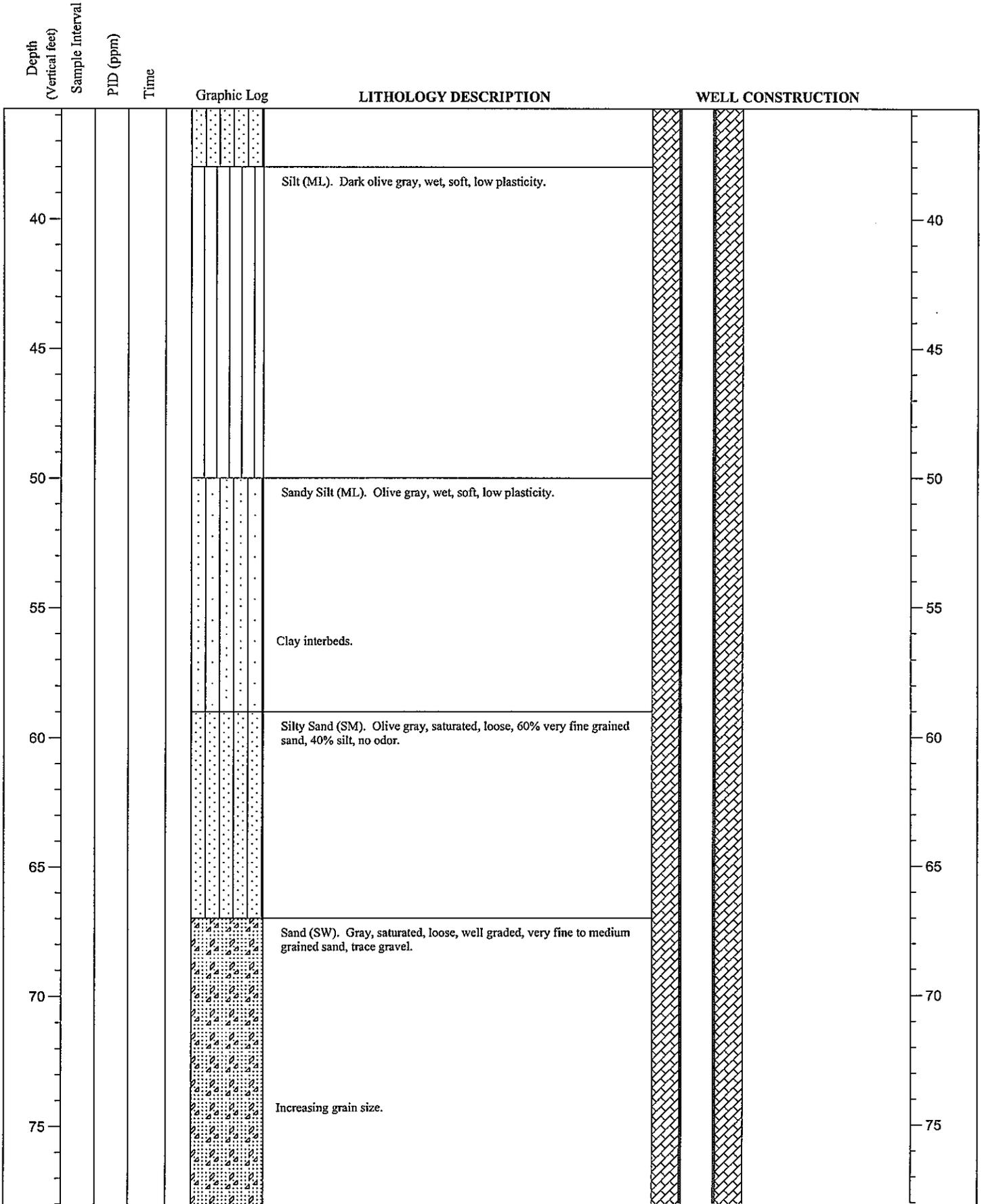
# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well:

MW-40

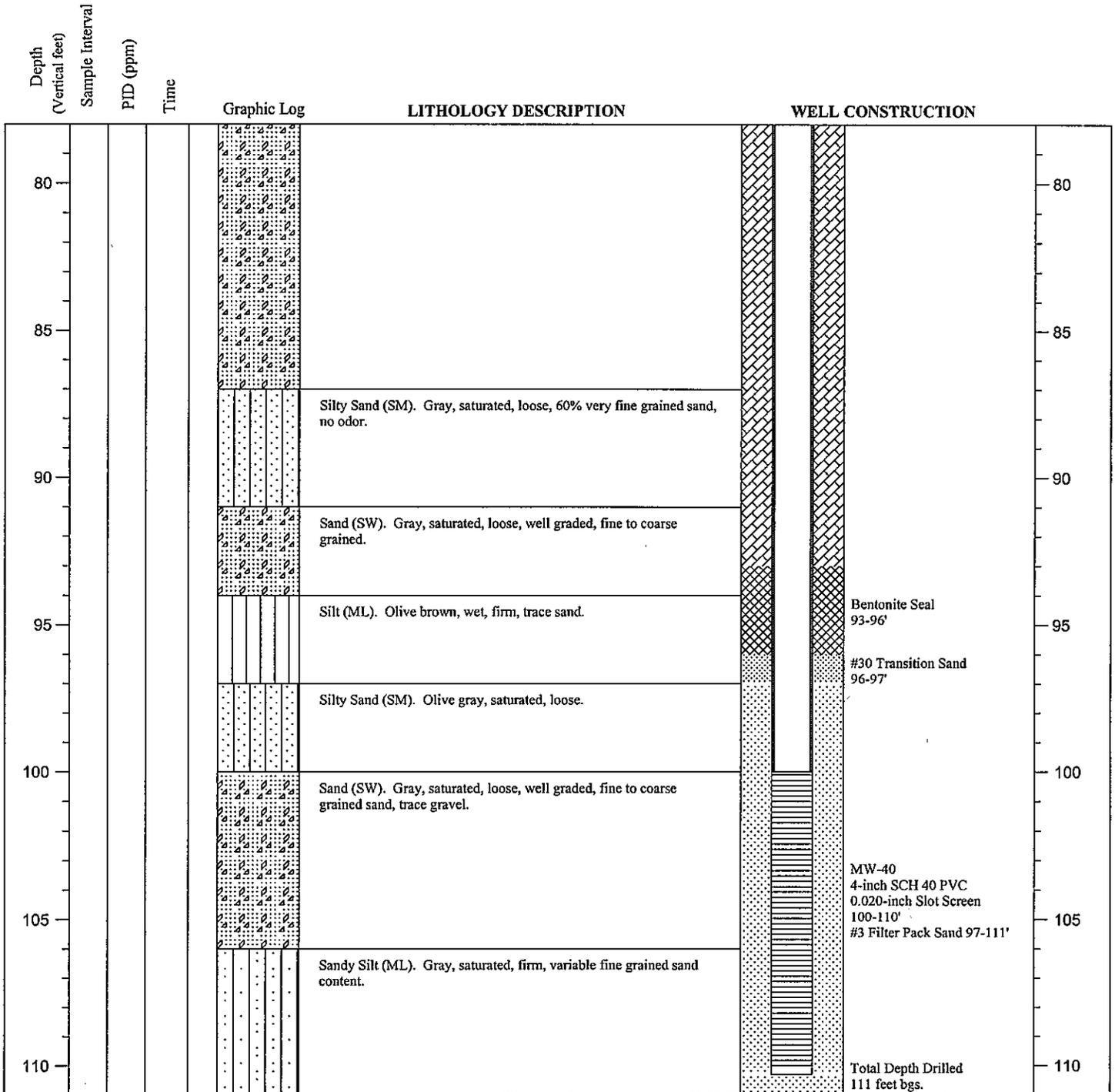


# Project: Cooper Drum

Location: McCallum Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-40



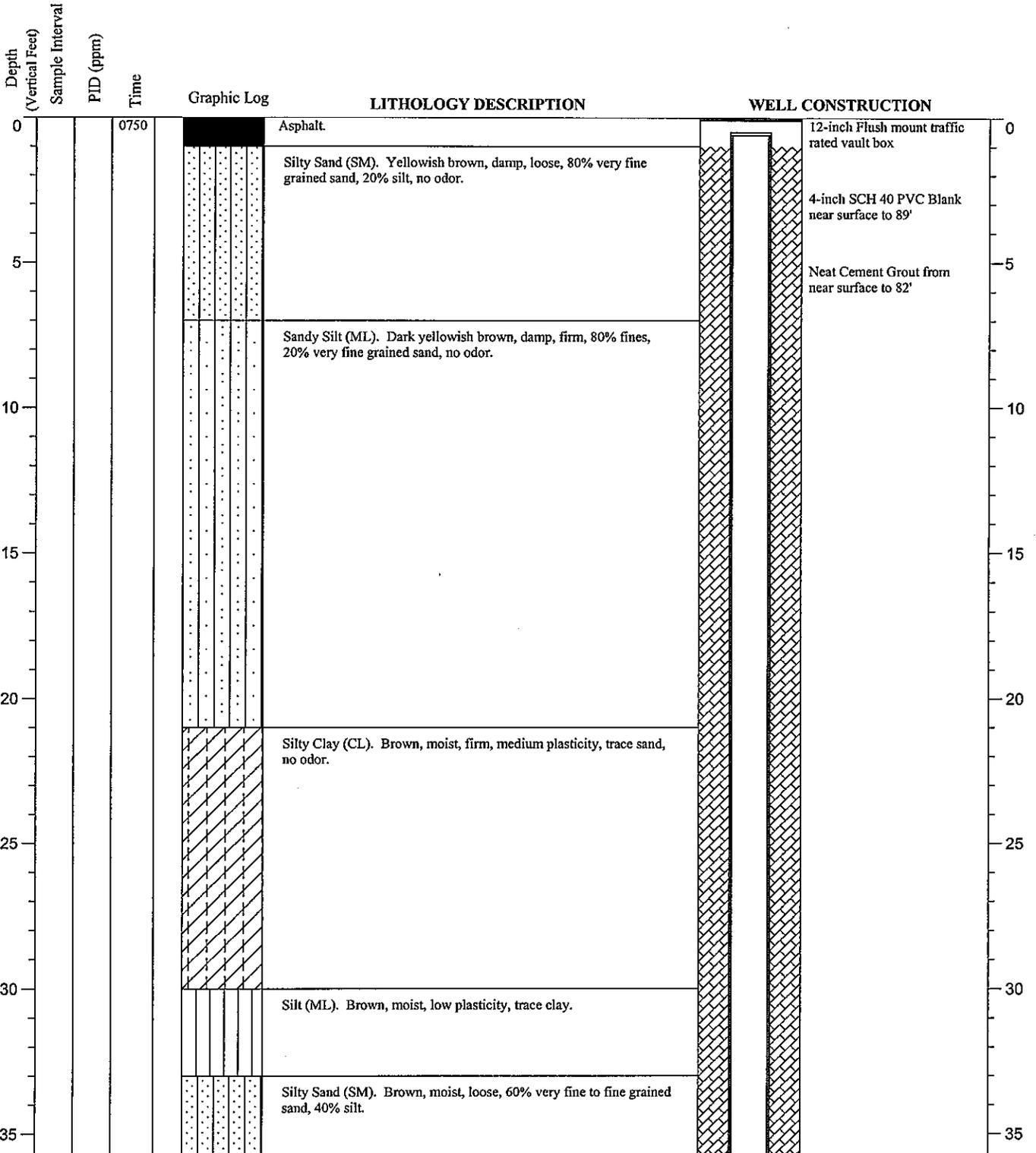
# Project: Cooper Drum

Location: Seam Master Site, South Gate, CA Project Number: 18500147

# Log of Monitoring Well: MW-41

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 100 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 3/6/08	Logged By: S. Lookingbill
Drill Rig: Marl M10	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 3/6/08	Screen Interval: 89-99 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

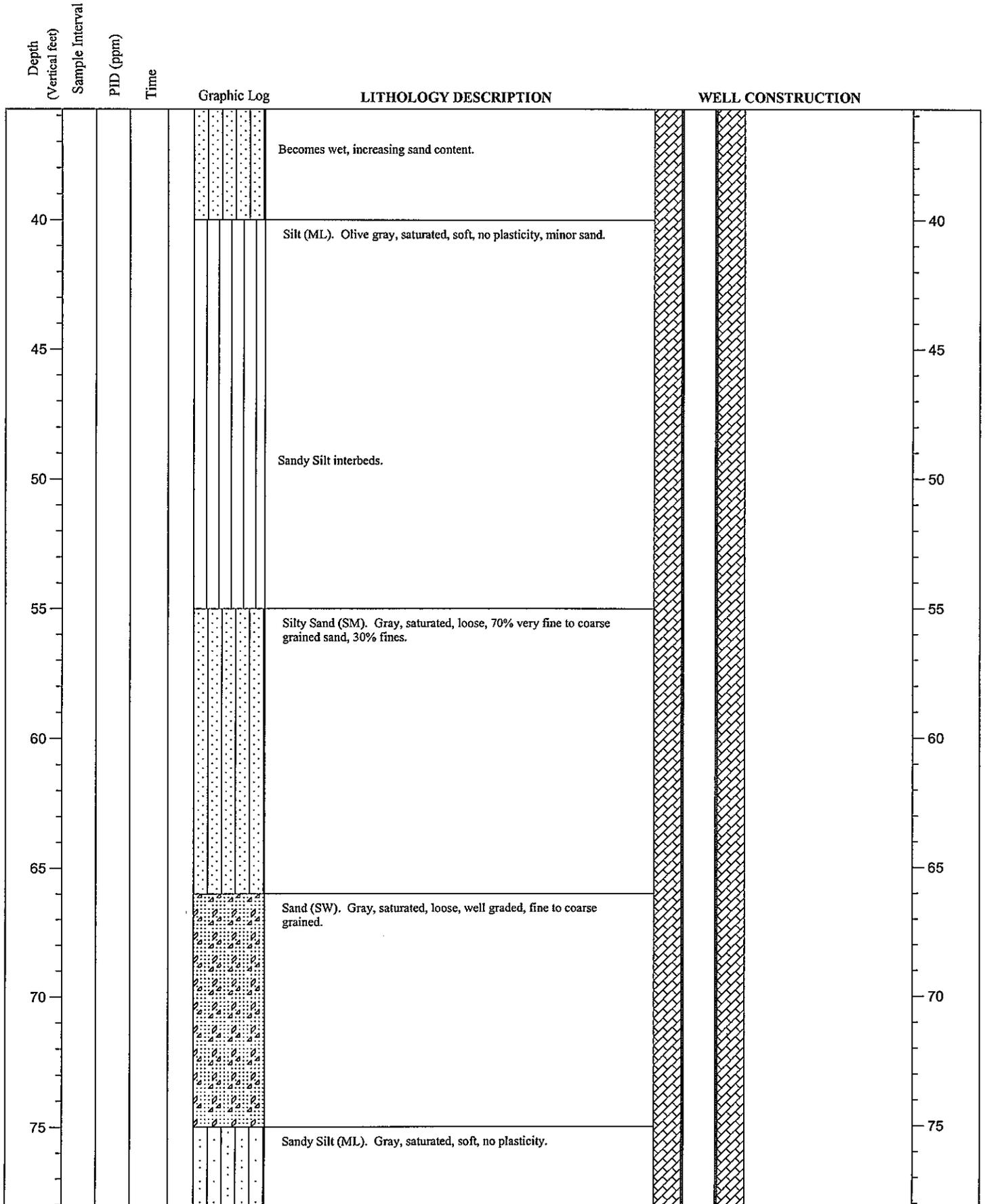
Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-36.



# Project: Cooper Drum

Location: Seam Master Site, South Gate, CA Project Number: 18500147

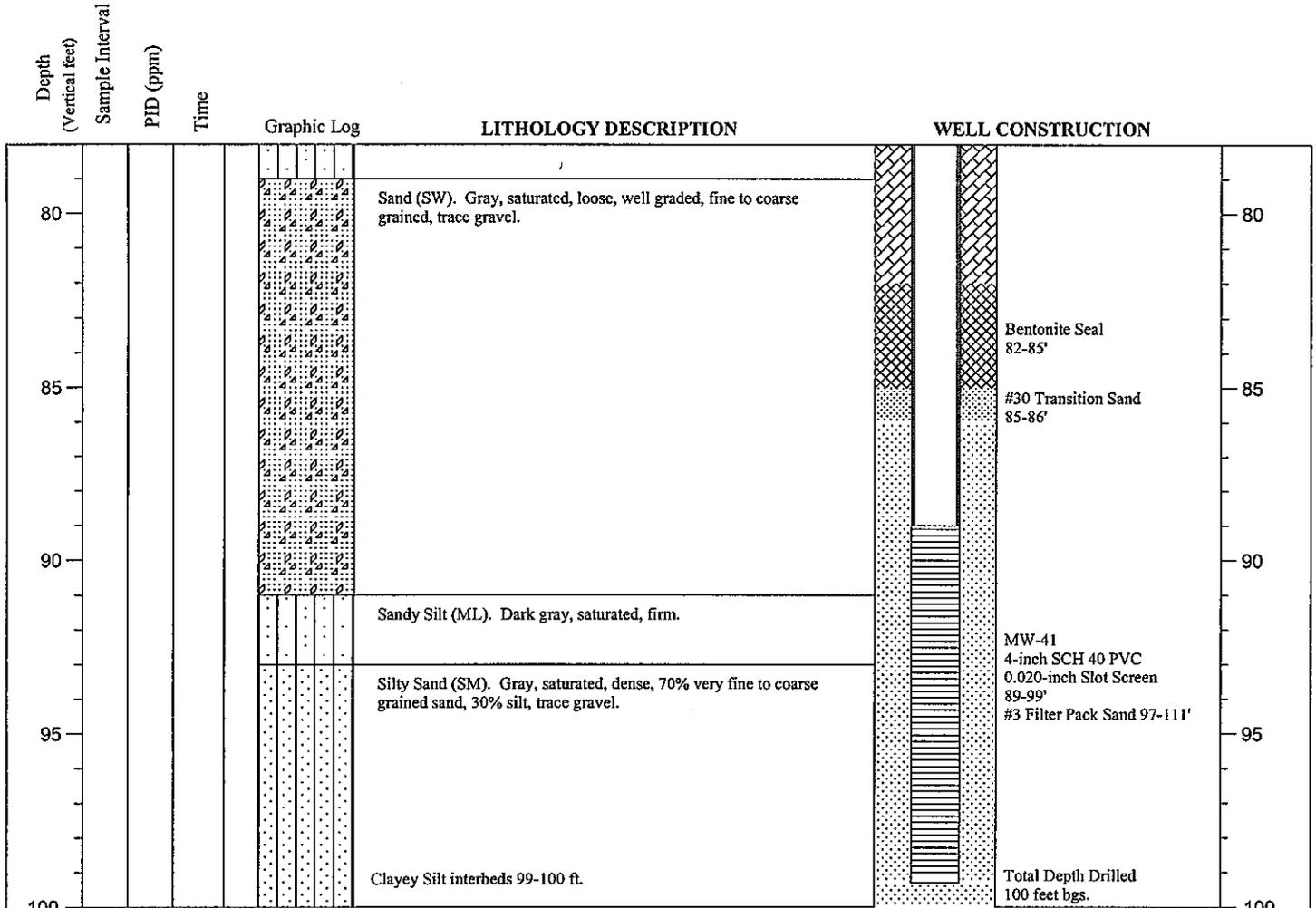
# Log of Monitoring Well: MW-41



# Project: Cooper Drum

Location: Seam Master Site, South Gate, CA Project Number: 18500147

# Log of Monitoring Well: MW-41



# Project: Cooper Drum

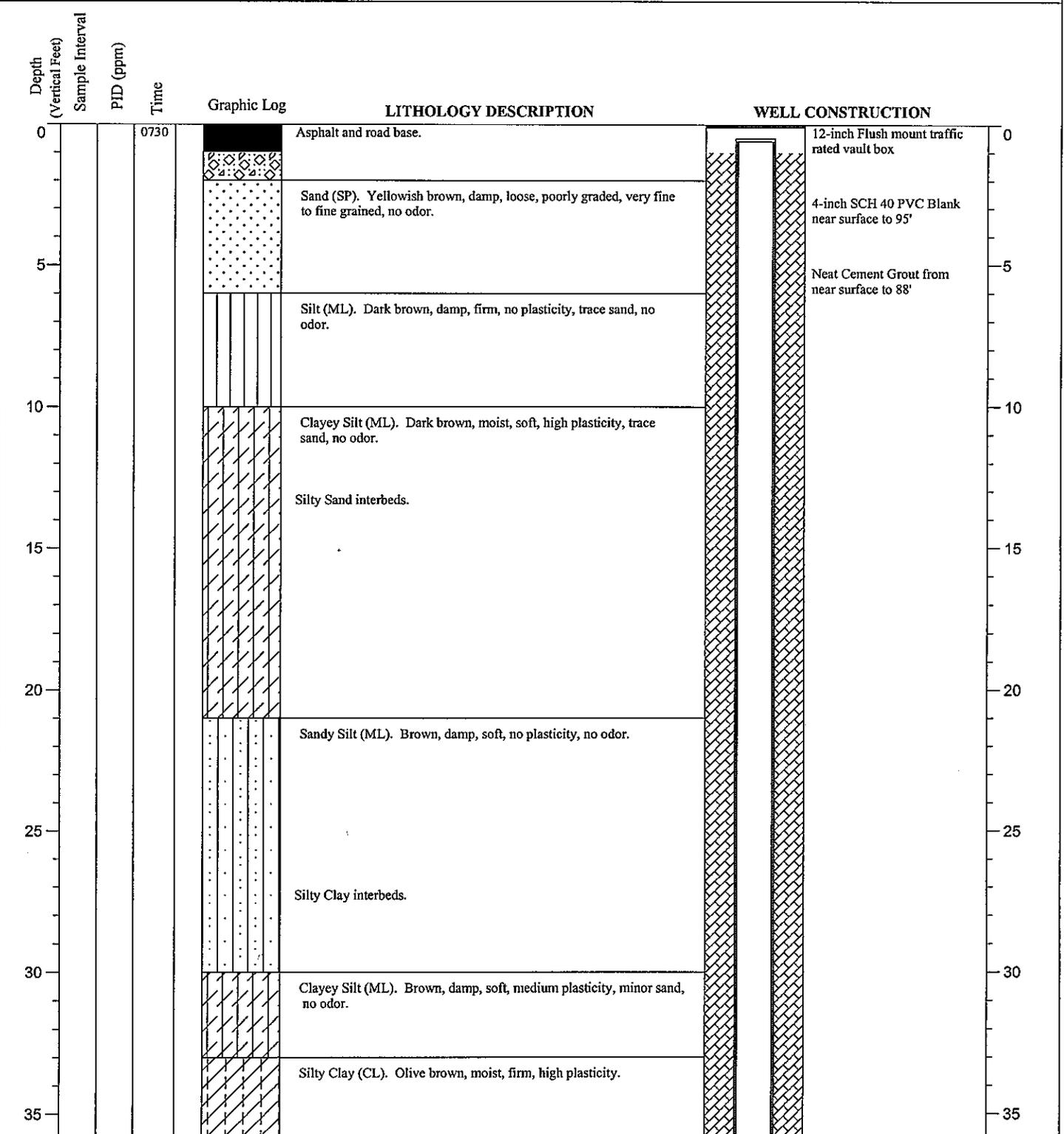
Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-35

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 106 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/27/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/27/08	Screen Interval: 95-105 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-40.

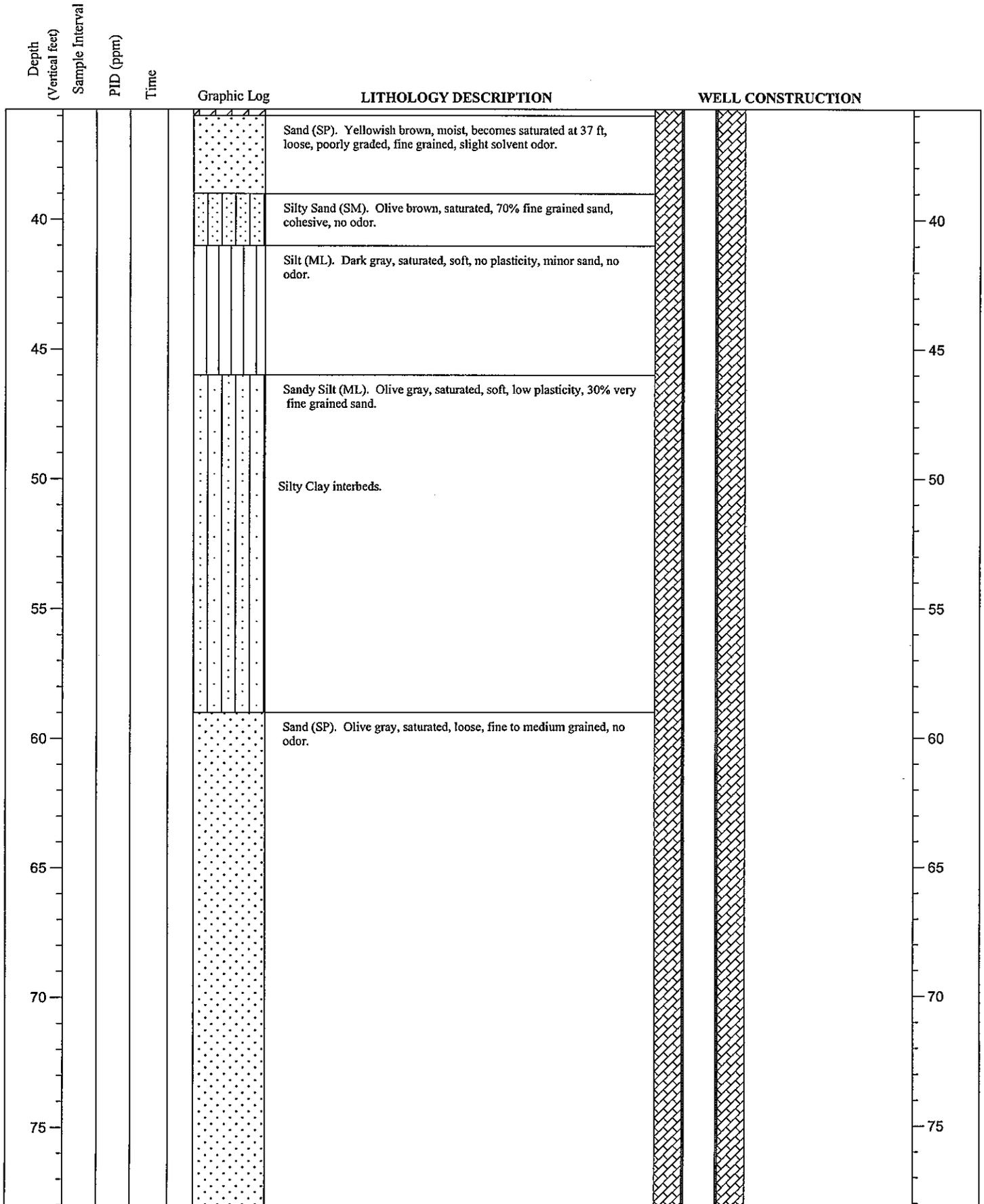


# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-35

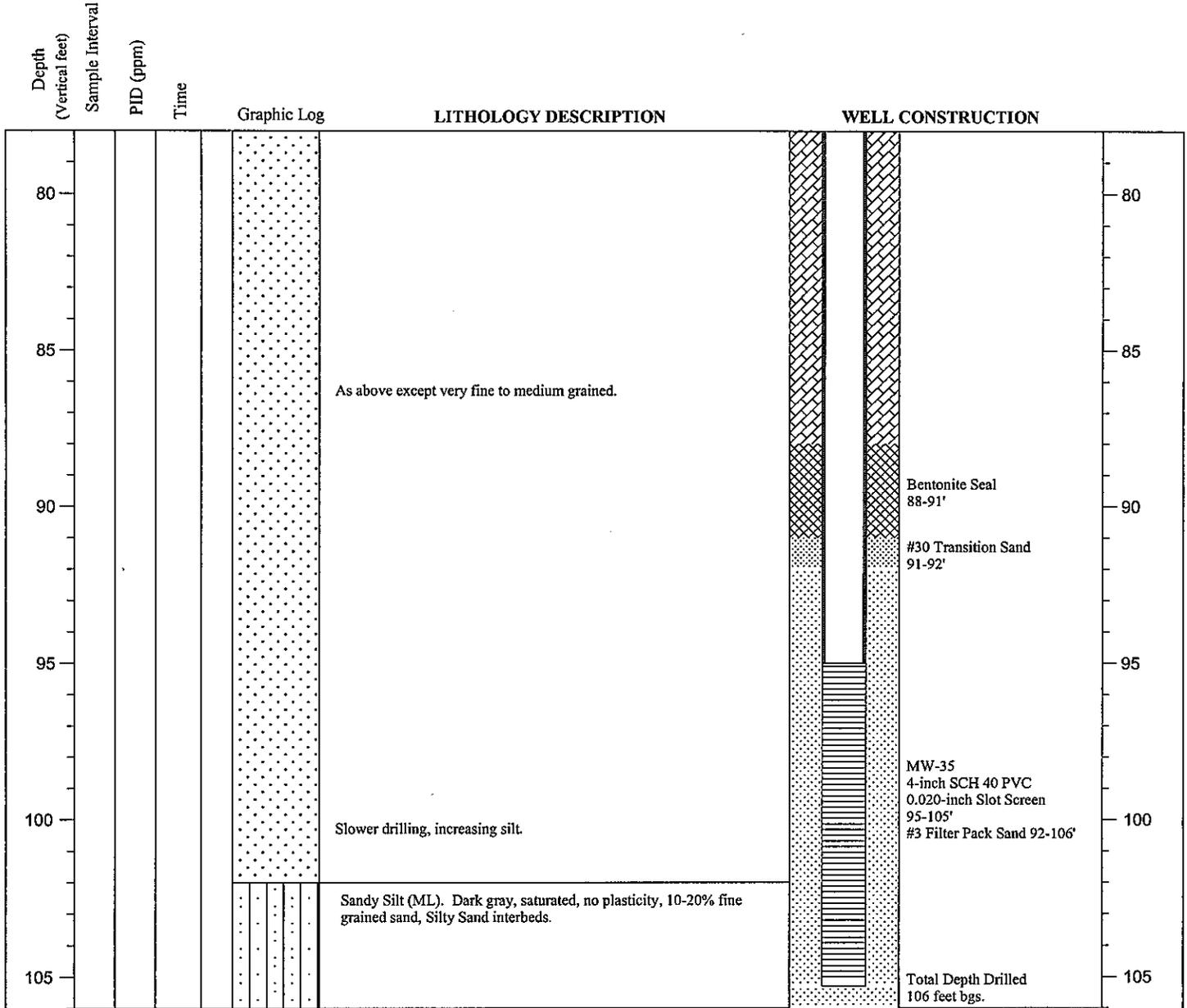


# Project: Cooper Drum

Location: Southern Ave. South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-35



# Project: Cooper Drum

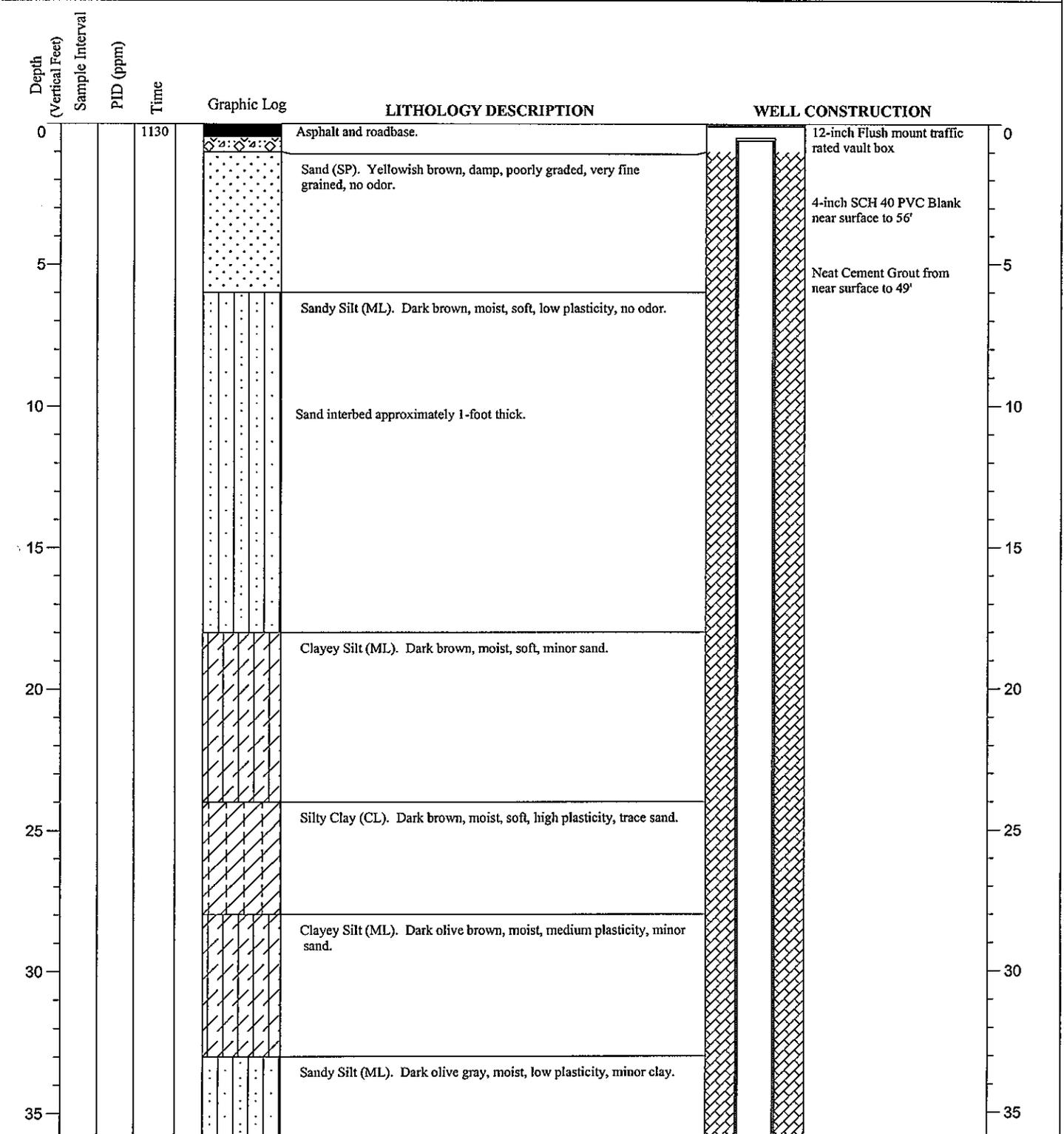
Location: Alley, South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-29A

Drilling Contractor: Gregg Drilling and Testing	Total Depth: 67 feet	Borehole Diameter: 10-inch
Drilling Method: Hollow Stem Auger	Well Construction Date: 2/26/08	Logged By: S. Lookingbill
Drill Rig: Mobile B-61	Casing Diameter: 4-inch	Casing Type: SCH 40 PVC
Date Drilled: 2/26/08	Screen Interval: 56-66 ft	Slot Size: 0.020-inch
		Checked By: Don Gruber
		Sampling Method: Cuttings

Comments: Asphalt surface, No sampling, soil description based on cuttings, well design based on lithology from CPT-38.



# Project: Cooper Drum

Location: Alley, South Gate, CA

Project Number: 18500147

# Log of Monitoring Well: MW-29A

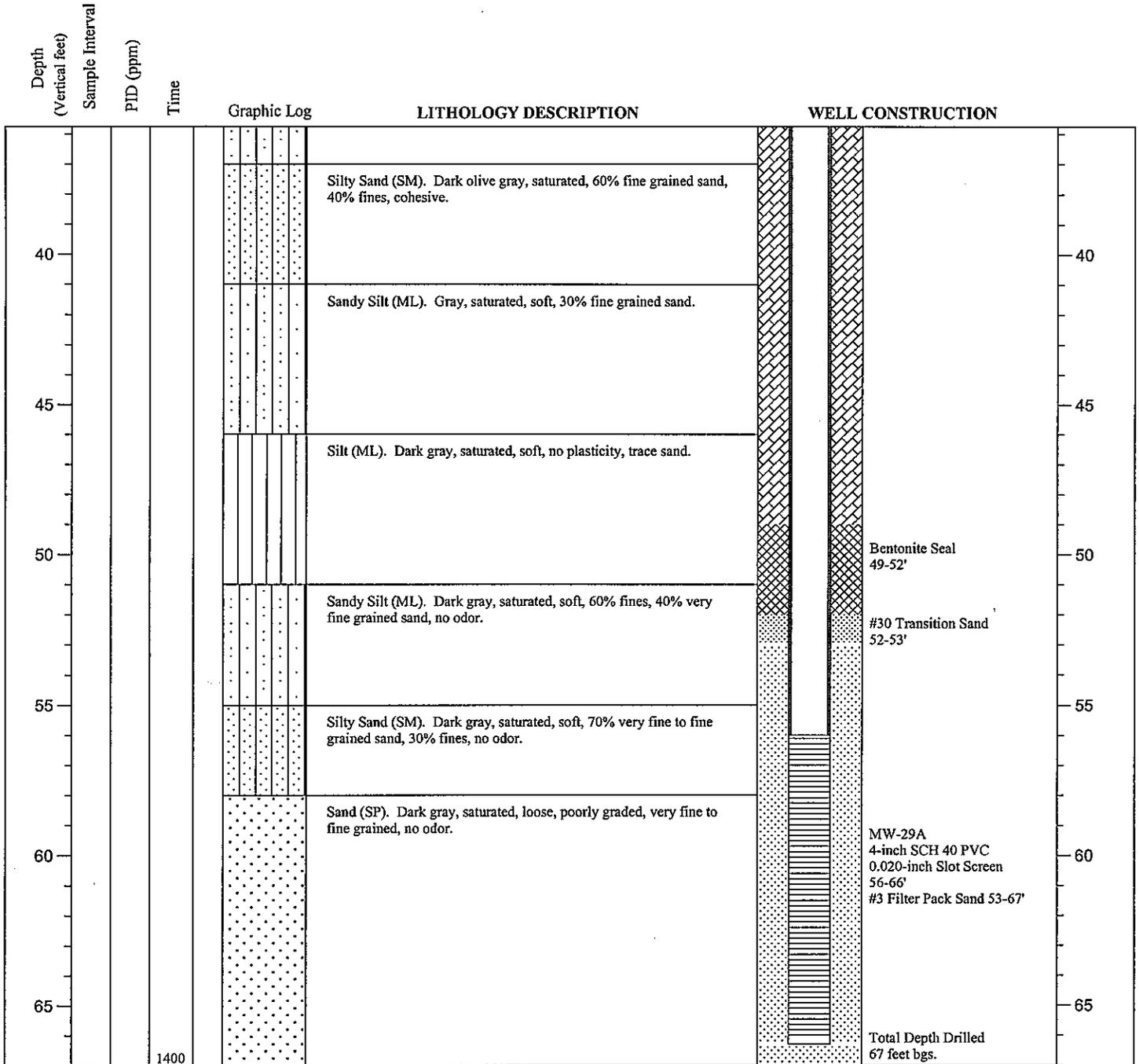
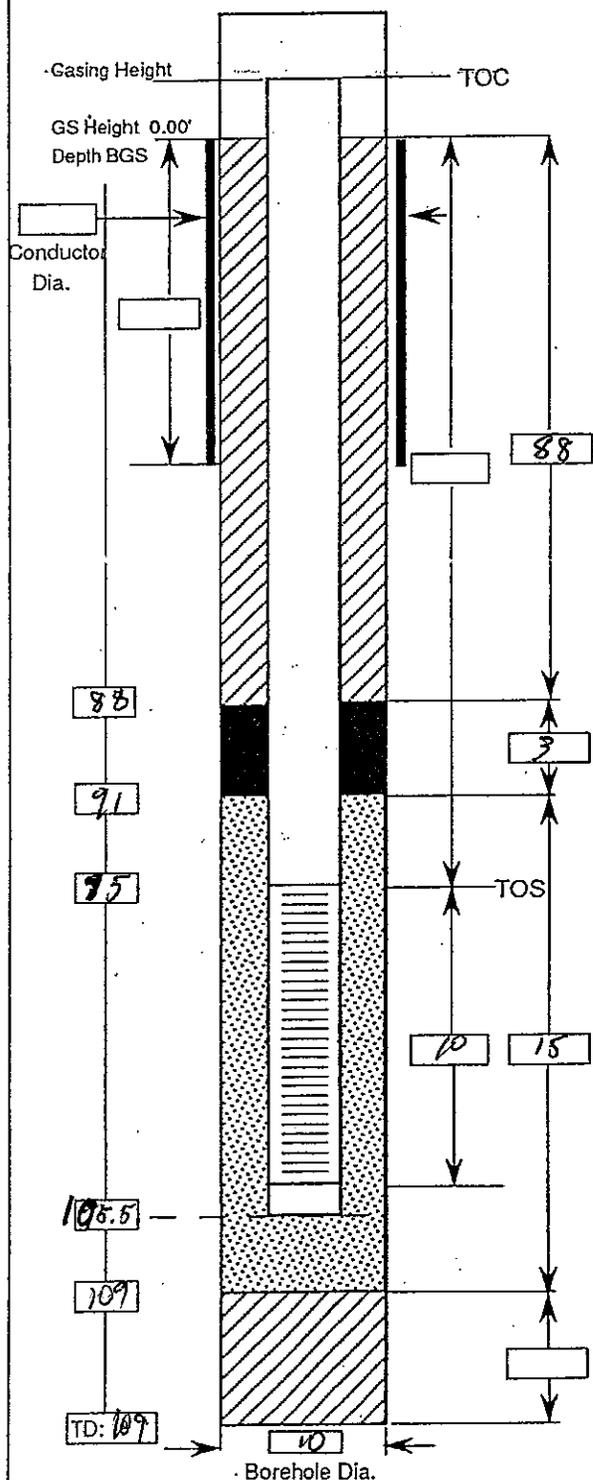


Exhibit 7.2-1  
**Monitor Well Construction Log**

**URS Consultants, Inc.**

Well No.: <b>MW-25B</b>	Site: <b>Cope Dam</b>
Project No.:	Project:
Start Date/Time: <b>2/28/08</b>	End Date/Time: <b>2/28/08</b>
Contractor: <b>Gregg Drilling</b>	URS Installer: <b>S. Lookhoffer</b>
Reviewed By:	Date: _____ Quantity of Construction Water: _____



PROTECTIVE CSG/CONDUCTOR CSG  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_

SURFACE COMPLETION  
**Flush well box**

BLANK CASING  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Total Length (TOC to TOS) **95**

GROUT  
 Composing & Proportions **5% bentonite**

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS **1-88**

CENTRALIZERS (Y/N) \_\_\_\_\_  
 Depth (s) \_\_\_\_\_

SEAL  
 Type **pellets**  
 Setup/Hydration time \_\_\_\_\_ vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK  
 Type **#3 Sand**  
 Amt Used \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

SCREEN  
 Type **0.02 Sch 40 pvc**  
 Diameter **4"**  
 Slot Size & Type **0.02" sch 40 pvc**  
 Interval BGS **95-105**

SUMP (Y/N) **(Y)**  
 Interval BGS **105-109** Length **4'**  
 Bottom Cap (Y/N) **(Y)**

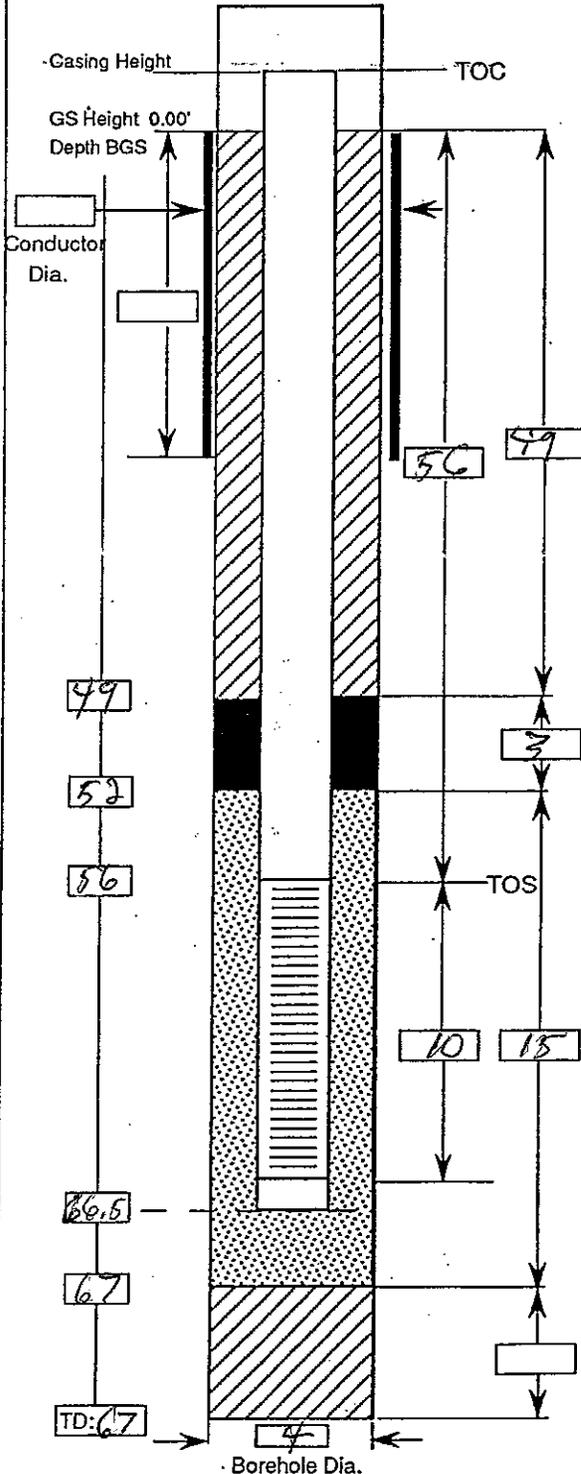
BACKFILL PLUG  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

NESTED WELL COMPLETION (Y/N) \_\_\_\_\_  
 Note if well is nested completion detail should be recored on a separate Monitor Well Construction Log (one completion per Log).

Monitor Well Construction Log

URS Consultants, Inc.

Well No.: <b>MW-29A</b>	Site: <b>Cooper Drum</b>
Project No.:	Project:
Start Date/Time: <b>2/26/08 1250</b>	End Date/Time: <b>2/26/08 1400</b>
Contractor: <b>Gregg</b>	URS Installer: <b>S. Lockingbolt</b>
Reviewed By:	Date: _____
	Quantity of Construction Water: _____



PROTECTIVE CSG/CONDUCTOR CSG

Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
**Flush well box**

BLANK CASING

Type **Sch 40 pvc**  
 Diameter \_\_\_\_\_  
 Total Length (TOC to TOS) **56**  
 GROUT  
 Composing & Proportions **5% bentonite**

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS **1-49**  
 CENTRALIZERS (Y/N) \_\_\_\_\_  
 Depth (s) \_\_\_\_\_

SEAL

Type **Pellets**  
 Setup/Hydration time **1hr** vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK

Type **#3 Sand (bags)**  
 Amt Used **1130 Sand (1 bag)**  
 Tremied (Y/N) \_\_\_\_\_

SCREEN

Type **Sch 40 pvc**  
 Diameter **4"**  
 Slot Size & Type **0.02**  
 Interval BGS \_\_\_\_\_

SUMP

Interval BGS **15-10** Length **4**  
 Bottom Cap (Y/N) \_\_\_\_\_

BACKFILL PLUG

Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

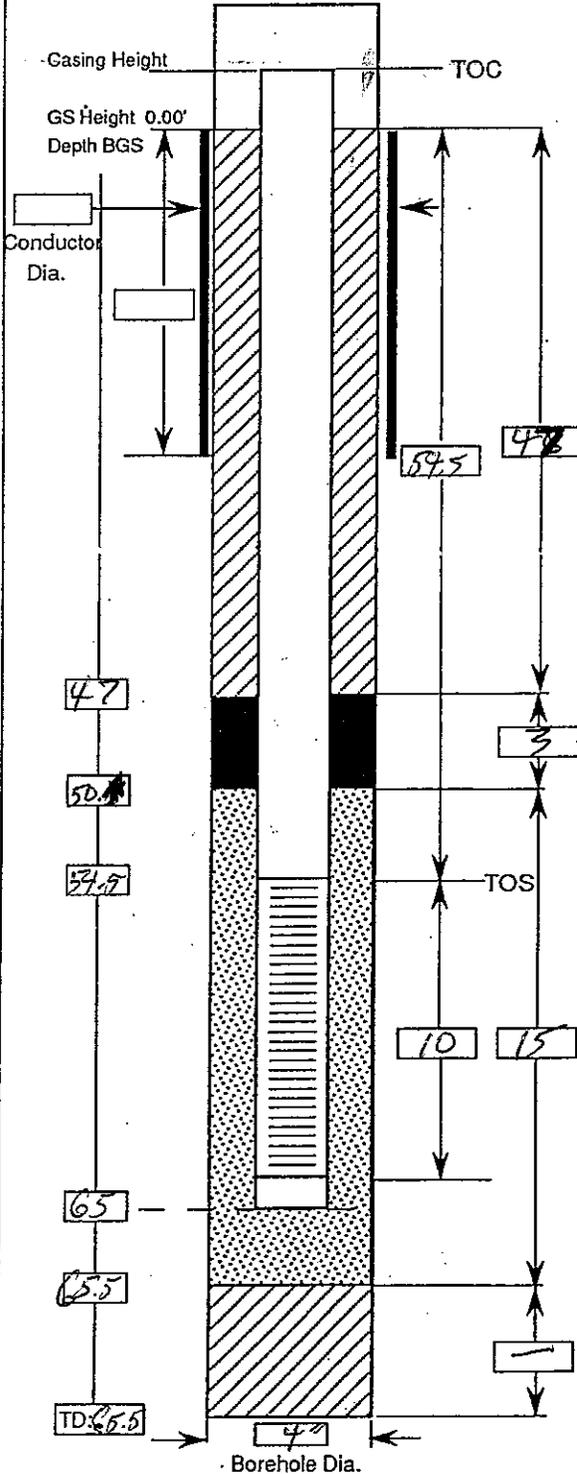
NESTED WELL COMPLETION (Y/N)

Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

Monitor Well Construction Log

URS Consultants, Inc.

Well No.: MW-31A	Site: Cooper Drum
Project No.:	Project:
Start Date/Time: 2/26/08 0830	End Date/Time: 2/26/08 1100
Contractor: Gregg	URS Installer: SDL
Reviewed By:	Date:
	Quantity of Construction Water:



PROTECTIVE CSG/CONDUCTOR CSG

Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
 Flush well to K

BLANK CASING

Type Sch 40 pvc  
 Diameter 4"  
 Total Length (TOC to TOS) 57.5  
 GROUT  
 Composing & Proportions 5% portland

Tremied (Y/N)  
 Interval BGS \_\_\_\_\_  
 CENTRALIZERS (Y/N)  
 Depth (s) \_\_\_\_\_

SEAL

Type pellets  
 Setup/Hydration time 1hr vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N)

FILTER PACK

Type # 3 sand (4 bags)  
 Amt Used # 0/30 sand (1 bag)  
 Tremied (Y/N)

SCREEN

Type 0.02" PVC  
 Diameter 4"  
 Slot Size & Type 0.02"  
 Interval BGS 57.5 - 64.5

SUMP (Y/N)

Interval BGS 64.5 - 65.5 Length 10'  
 Bottom Cap (Y/N)

BACKFILL PLUG

Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N)

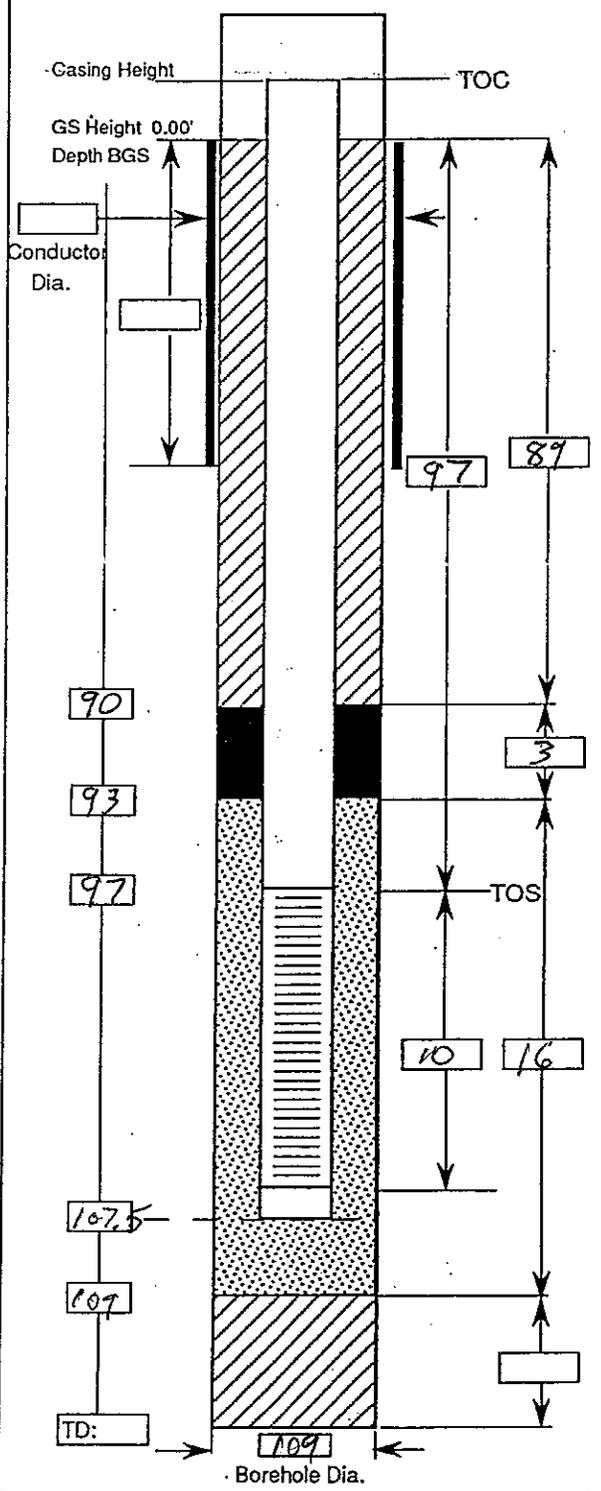
NESTED WELL COMPLETION (Y/N)

Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

Exhibit 7.2-1  
**Monitor Well Construction Log**

**URS Consultants, Inc.**

Well No.: <b>MW-31B</b>	Site: <b>Cooper Drum</b>
Project No.:	Project:
Start Date/Time: <b>2/25/08 1300</b>	End Date/Time: <b>2/25/08</b>
Contractor: <b>Gregg</b>	URS Installer: <b>Six</b>
Reviewed By:	Date: _____
	Quantity of Construction Water:



**PROTECTIVE CSG/CONDUCTOR CSG**  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_

**SURFACE COMPLETION**  
**Flush well box**

**BLANK CASING**  
 Type **PVC** **Sch 40**  
 Diameter **4"**  
 Total Length (TOC to TOS) **97**

**GROUT**  
 Composing & Proportions **5% bentonite**

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS \_\_\_\_\_

**CENTRALIZERS (Y/N)**  
 Depth (s) **1-89**

**SEAL**  
 Type **pellets (2 buckets)**  
 Setup/Hydration time **1 hr** vol. Fluid Added **-**  
 Tremied (Y/N) \_\_\_\_\_

**FILTER PACK**  
 Type **# 3 (4.5 bags)**  
 Amt Used **# 30 (1 bag)**  
 Tremied (Y/N) \_\_\_\_\_

**SCREEN**  
 Type **PVC**  
 Diameter **4"**  
 Slot Size & Type **0.02**  
 Interval BGS **97-107**

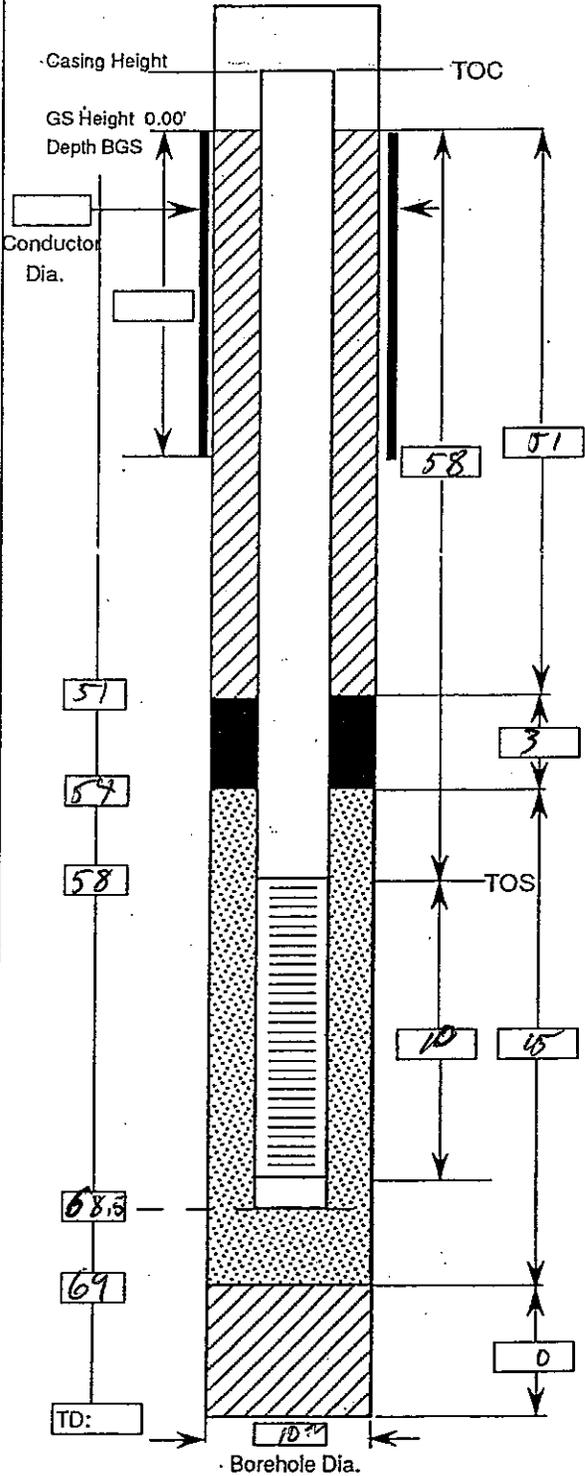
**SUMP (Y/N)** **DA**  
 Interval BGS **107-107** Length **2**  
 Bottom Cap (Y/N) \_\_\_\_\_

**BACKFILL PLUG**  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

**NESTED WELL COMPLETION (Y/N)**  
 Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

Exhibit 7.2-1  
**Monitor Well Construction Log**

<b>URS Consultants, Inc.</b>	
Well No.: <i>MW-34</i>	Site: <i>Cooper Drum</i>
Project No.:	Project:
Start Date/Time: <i>2/28/08 0740</i>	End Date/Time: <i>2/28/08 0910</i>
Contractor: <i>Gregg Drilling</i>	URS Installer: <i>S. Lookingbill</i>
Reviewed By:	Date: _____ Quantity of Construction Water: _____



PROTECTIVE CSG/CONDUCTOR CSG  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_

SURFACE COMPLETION  
*Flush well bow*

BLANK CASING  
 Type *Sch 40 pvc*  
 Diameter *4"*  
 Total Length (TOC to TOS) *58*

GROUT  
 Composing & Proportions *5% bentonite*

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS \_\_\_\_\_

CENTRALIZERS (Y/N) \_\_\_\_\_  
 Depth (s) \_\_\_\_\_

SEAL  
 Type *pellets*  
 Setup/Hydration time \_\_\_\_\_ vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK  
 Type *2/12 Sand (4 bags)*  
 Amt Used *0/30 Sand (1 bag)*  
 Tremied (Y/N)

SCREEN  
 Type *Sch 40 pvc*  
 Diameter *4"*  
 Slot Size & Type *0.01*  
 Interval BGS \_\_\_\_\_

SUMP (Y/N)   
 Interval BGS *68.8* Length \_\_\_\_\_  
 Bottom Cap (Y/N)

BACKFILL PLUG  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

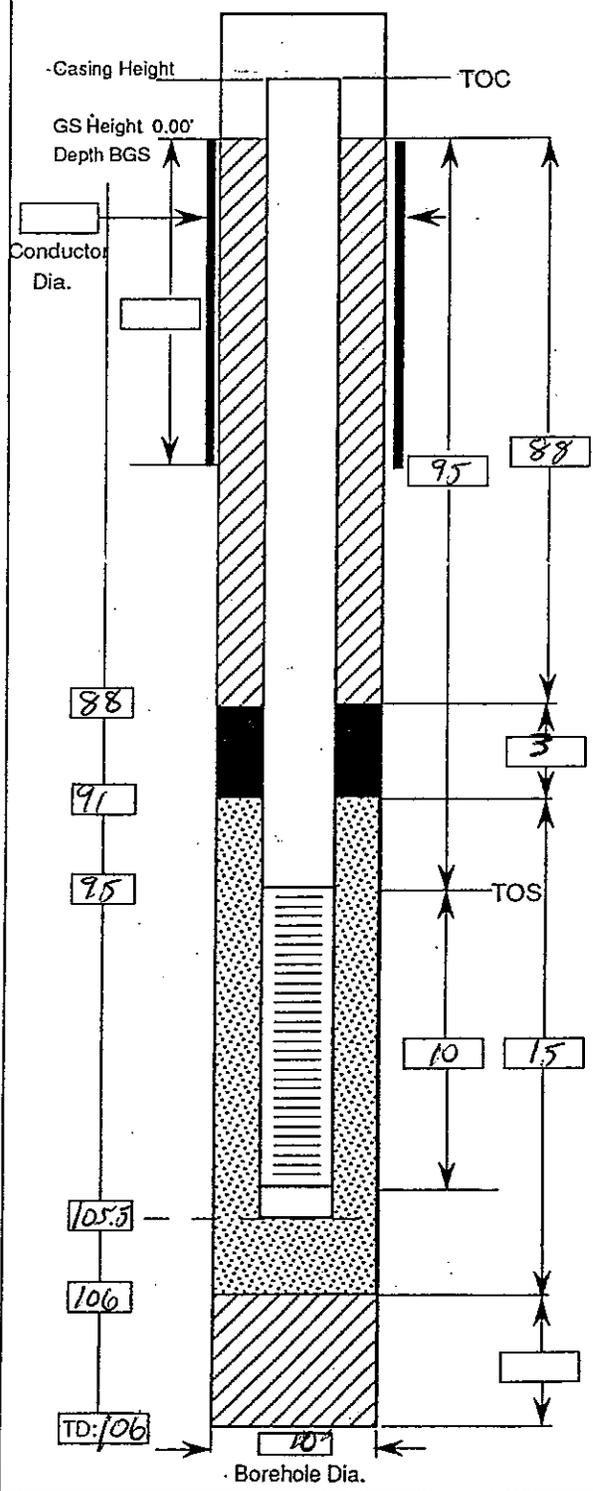
NESTED WELL COMPLETION (Y/N) \_\_\_\_\_  
 Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

*Flowing Sands*

Exhibit 7.2-1  
**Monitor Well Construction Log**

**URS Consultants, Inc.**

Well No.: <i>MW-35</i>	Site: <i>Cooper Drive</i>
Project No.:	Project:
Start Date/Time: <i>2/27/08 0940</i>	End Date/Time: <i>2/27/08 1205</i>
Contractor: <i>Gregg Dilling</i>	URS Installer: <i>S. Lookingbill</i>
Reviewed By:	Date: _____ Quantity of Construction Water:



PROTECTIVE CSG/CONDUCTOR CSG  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
*Flush well box*

BLANK CASING  
 Type *Sch 40 pvc*  
 Diameter *4"*  
 Total Length (TOC to TOS) *95*  
 GROUT  
 Composing & Proportions *5% bentonite*

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS *0-88*  
 CENTRALIZERS (Y/N) \_\_\_\_\_  
 Depth (s) \_\_\_\_\_

SEAL  
 Type *pellets*  
 Setup/Hydration time *1 hr* vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK  
 Type *#3 Sand (5 bags)*  
 Amt Used *#0/30 Sand (1 bag)*  
 Tremied (Y/N) \_\_\_\_\_

SCREEN  
 Type *Sch 40 pvc*  
 Diameter *4"*  
 Slot Size & Type *0.02"*  
 Interval BGS *9.5-10.5*

SUMP (Y/N) \_\_\_\_\_  
 Interval BGS *10.5-10.6* Length *9"*  
 Bottom Cap (Y/N) \_\_\_\_\_

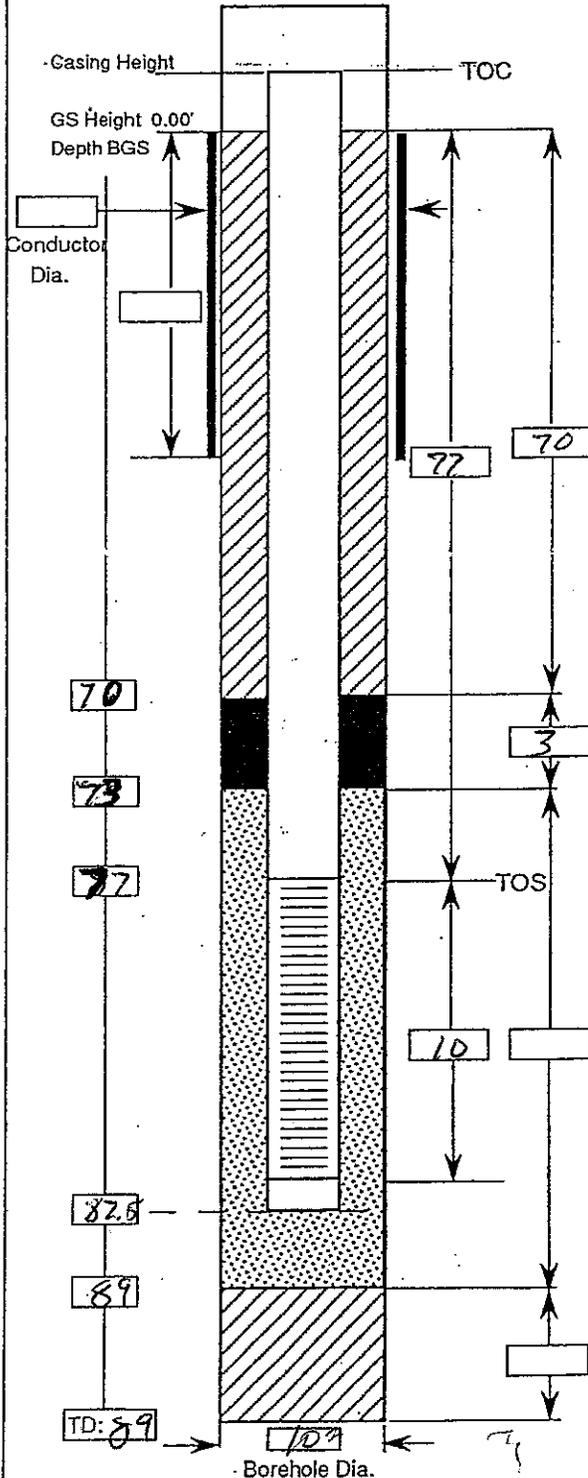
BACKFILL PLUG  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

NESTED WELL COMPLETION (Y/N) \_\_\_\_\_  
 Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

Monitor Well Construction Log

URS Consultants, Inc.

Well No.: <b>MW-36</b>	Site: <b>Cooper Drum</b>
Project No.:	Project:
Start Date/Time: <b>3/4/08</b>	End Date/Time:
Contractor: <b>Gregg Drilling</b>	URS Installer: <b>S. Lookingbill</b>
Reviewed By:	Date: _____ Quantity of Construction Water: _____



PROTECTIVE CSG/CONDUCTOR CSG

Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
**Flush well box**

BLANK CASING

Type **Sch 40 pvc**  
 Diameter **4"**  
 Total Length (TOC to TOS) **77**

GROUT

Composing & Proportions **5% bentonite**

Tremied (Y/N)

Interval BGS **1-70**

CENTRALIZERS (Y/N)

Depth (s) \_\_\_\_\_

SEAL

Type **Pellets**

Setup/Hydration time \_\_\_\_\_ vol. Fluid Added \_\_\_\_\_

Tremied (Y/N)

FILTER PACK

Type **#3 Sand (6 bags)**

Amt Used **#0/30 Sand (1 bag)**

Tremied (Y/N)

SCREEN

Type **Sch 40 pvc**

Diameter **4"**

Slot Size & Type **0.02"**

Interval BGS **77-87**

SUMP  (Y/N)

Interval BGS **87-89** Length **2'**

Bottom Cap  (Y/N)

BACKFILL PLUG

Material \_\_\_\_\_

Setup/Hydration time \_\_\_\_\_

Tremied (Y/N)

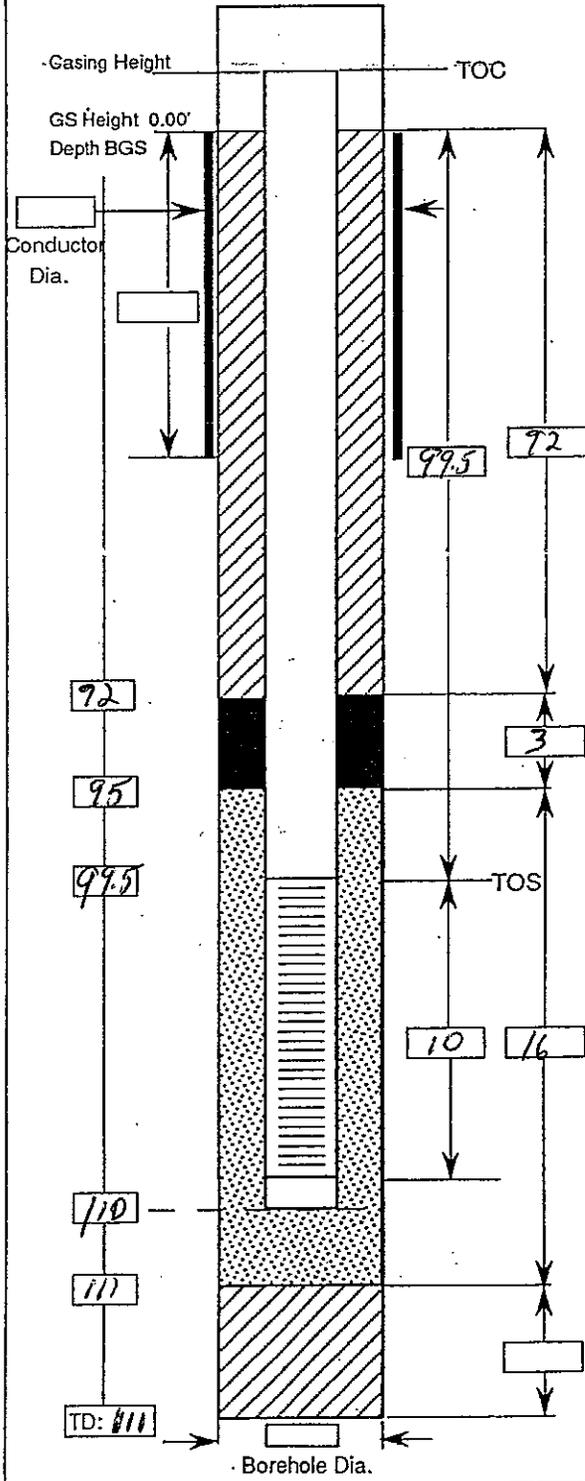
NESTED WELL COMPLETION (Y/N)

Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

Exhibit 7.2-1  
**Monitor Well Construction Log**

**URS Consultants, Inc.**

Well No.: <b>MW-37</b>	Site: <b>Cooper Drum</b>
Project No.:	Project:
Start Date/Time: <b>3/5/08 1025</b>	End Date/Time: <b>3/5/08 1320</b>
Contractor: <b>Gregg Drilling</b>	URS Installer: <b>S. Lookingbill</b>
Reviewed By:	Date: _____
Quantity of Construction Water: _____	



**PROTECTIVE CSG/CONDUCTOR CSG**  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_

**SURFACE COMPLETION**  
 \_\_\_\_\_  
**Flush well box**

**BLANK CASING**  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Total Length (TOC to TOS) **99.5**

**GROUT**  
 Composing & Proportions **5% bentonite**

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS **1-92**

**CENTRALIZERS (Y/N)**  
 Depth (s) \_\_\_\_\_

**SEAL**  
 Type **pellets**  
 Setup/Hydration time \_\_\_\_\_ vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

**FILTER PACK**  
 Type **# 3 sand (1 bag)**  
 Amt Used **# 0/30 sand (1 bag)**  
 Tremied (Y/N) \_\_\_\_\_

**SCREEN**  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Slot Size & Type **0.02"**  
 Interval BGS \_\_\_\_\_

**SUMP (Y/N)** **Y**  
 Interval BGS **99.5-111** Length **15**  
 Bottom Cap (Y/N) **Y**

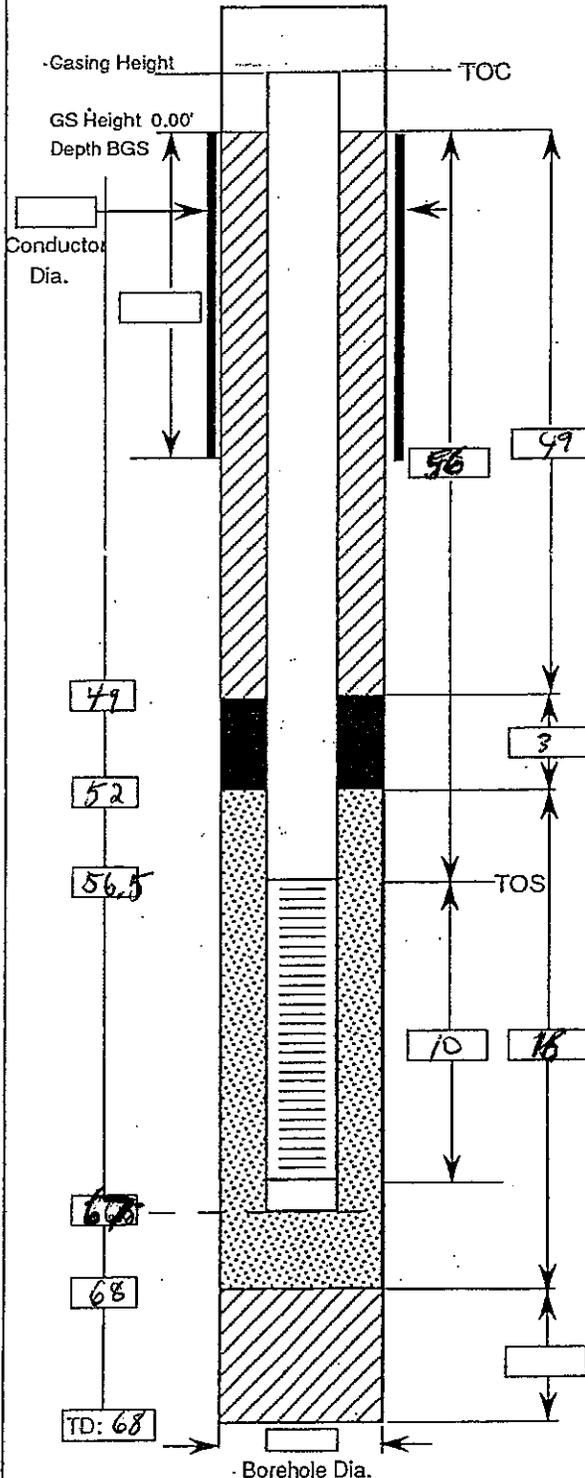
**BACKFILL PLUG**  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

**NESTED WELL COMPLETION (Y/N)**  
 Note if well is nested completion detail should be recored on a separate Monitor Well Construction Log (one completion per Log).

Monitor Well Construction Log

URS Consultants, Inc.

Well No.: <b>MW-38</b>	Site: <b>Cooper Drumm</b>
Project No.:	Project:
Start Date/Time: <b>3/4/08 0825</b>	End Date/Time: <b>3/4/08 1110</b>
Contractor: <b>Gregg Drilling</b>	URS Installer: <b>S. Lookang</b>
Reviewed By:	Date: _____
	Quantity of Construction Water:



PROTECTIVE CSG/CONDUCTOR CSG

Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
**Flush well bore**

BLANK CASING

Type **Sch 40 pvc**  
 Diameter **4"**  
 Total Length (TOC to TOS) \_\_\_\_\_  
 GROUT  
 Composing & Proportions **5% bentonite**

Tremied (Y/N)

Interval BGS **1-49'**  
 CENTRALIZERS (Y/N)  
 Depth (s) \_\_\_\_\_

SEAL

Type **pellets**  
 Setup/Hydration time \_\_\_\_\_ vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N)

FILTER PACK

Type **#2/12 sand (4 bags)**  
 Amt Used **#0/30 sand (1 bag)**  
 Tremied (Y/N)

SCREEN

Type **Sch 40 pvc**  
 Diameter **4"**  
 Slot Size & Type **0.01"**  
 Interval BGS **56" CC**

SUMP (Y/N)

Interval BGS **16-68** Length **52'**  
 Bottom Cap (Y/N)

BACKFILL PLUG

Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N)

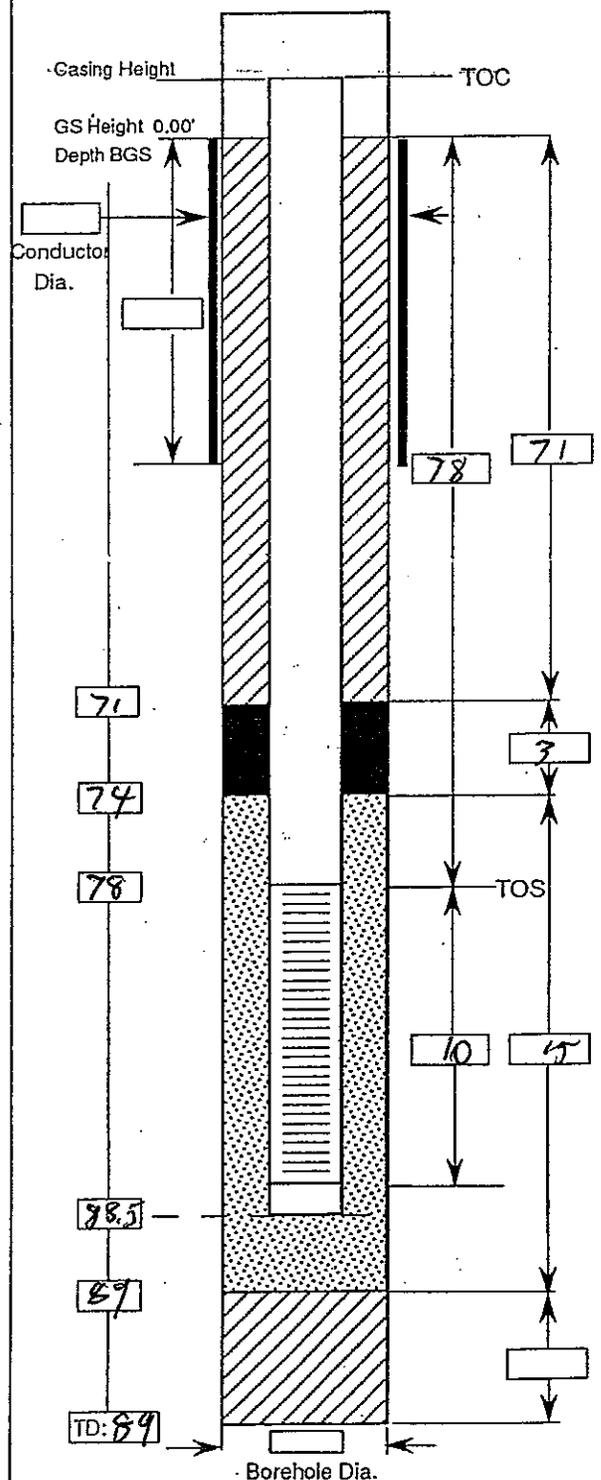
NESTED WELL COMPLETION (Y/N)

Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

Exhibit 7.2-1  
**Monitor Well Construction Log**

**URS Consultants, Inc.**

Well No.: <b>MW-39</b>	Site: <b>COOPER DAM</b>
Project No.: <b>2/29/08</b>	Project: <b>2/29/08</b>
Start Date/Time: <b>3/1/08 0905</b>	End Date/Time: <b>3/1/08 1150</b>
Contractor: <b>Gregg Drilling</b>	URS Installer: <b>SDL</b>
Reviewed By: _____	Date: _____ Quantity of Construction Water: _____



PROTECTIVE CSG/CONDUCTOR CSG  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
 \_\_\_\_\_  
 \_\_\_\_\_

BLANK CASING  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Total Length (TOC to TOS) **78'**

GROUT  
 Composing & Proportions **5% bentonite**

Tremied (Y/N) **Y**  
 Interval BGS **1-71**  
 CENTRALIZERS (Y/N) **Y**  
 Depth (s) \_\_\_\_\_

SEAL  
 Type **pellets**  
 Setup/Hydration time **1 hr** vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK  
 Type **#3 sand (4.5 bags)**  
 Amt Used **#0/30 sand (1 bag)**  
 Tremied (Y/N) \_\_\_\_\_

SCREEN  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Slot Size & Type **0.02**  
 Interval BGS **78-88**

SUMP (Y/N) **Y**  
 Interval BGS **88-89** Length \_\_\_\_\_  
 Bottom Cap (Y/N) **Y**

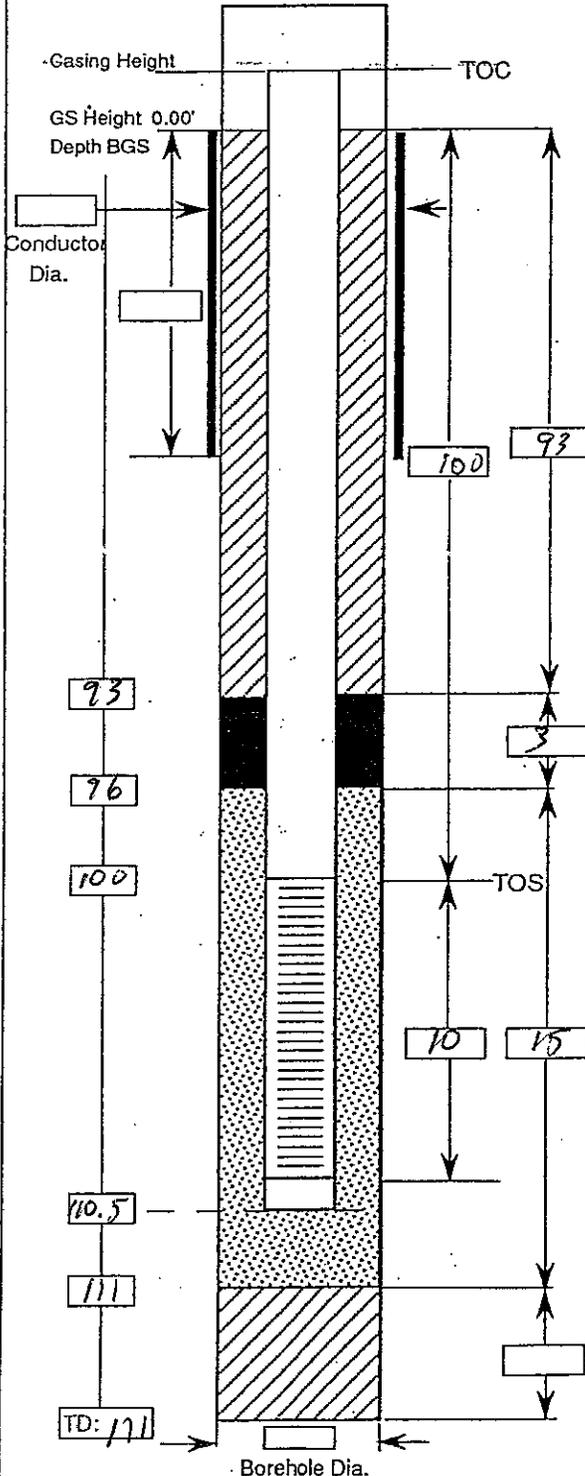
BACKFILL PLUG  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

NESTED WELL COMPLETION (Y/N)  
 Note if well is nested completion detail should be recored on a separate Monitor Well Construction Log (one completion per Log).

Monitor Well Construction Log

URS Consultants, Inc.

Well No.: <i>MW-40</i>	Site: <i>Cooper Drum</i>
Project No.:	Project:
Start Date/Time: <i>3/3/08 1035</i>	End Date/Time: <i>3/3/08 1350</i>
Contractor: <i>Gregg</i>	URS Installer: <i>S. Lookingbill</i>
Reviewed By:	Date: _____
	Quantity of Construction Water: _____



PROTECTIVE CSG/CONDUCTOR CSG

Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
*Flush well box*

BLANK CASING

Type *Sch 40 pvc*  
 Diameter *4"*  
 Total Length (TOC to TOS) *100*  
 GROUT  
 Composing & Proportions *5% bentonite*

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS *1-93*  
 CENTRALIZERS (Y/N) \_\_\_\_\_  
 Depth (s) \_\_\_\_\_

SEAL

Type *Pellets*  
 Setup/Hydration time *1 1/2 hr* vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK

Type *# 3 Sand (5 bags)*  
 Amt Used *# 0/30 Sand (1 bag)*  
 Tremied (Y/N) \_\_\_\_\_

SCREEN

Type *Sch 40 pvc*  
 Diameter \_\_\_\_\_  
 Slot Size & Type *0.02"*  
 Interval BGS *100-110*

SUMP (Y/N)

Interval BGS *110-111* Length *1'*  
 Bottom Cap (Y/N) \_\_\_\_\_

BACKFILL PLUG

Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

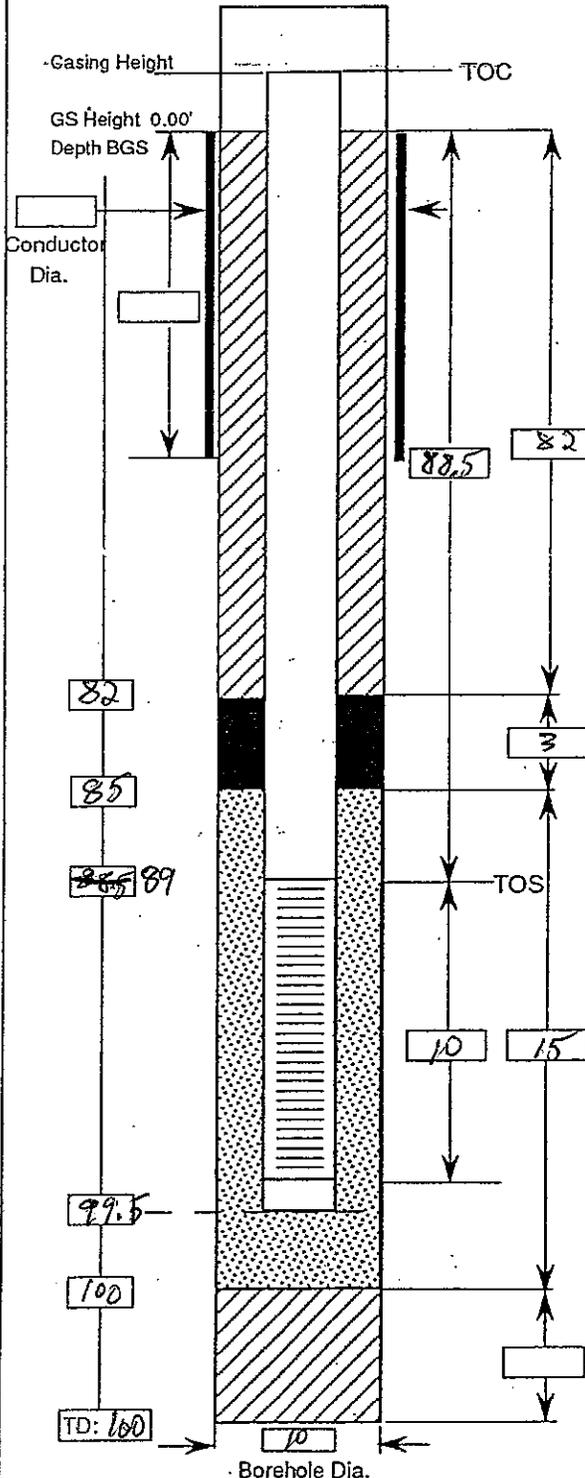
NESTED WELL COMPLETION (Y/N)

Note if well is nested completion detail should be recored on a separate Monitor Well Construction Log (one completion per Log).

Monitor Well Construction Log

URS Consultants, Inc.

Well No.: <b>MW-41</b>	Site: <b>Cooper Drum</b>
Project No.:	Project:
Start Date/Time: <b>3/6/08 0935</b>	End Date/Time: <b>3/6/08 1320</b>
Contractor: <b>Gregg Drilling</b>	URS Installer: <b>J. Loo Kingbill</b>
Reviewed By:	Date: _____
Quantity of Construction Water: _____	



PROTECTIVE CSG/CONDUCTOR CSG  
 Material/Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Depth BGS \_\_\_\_\_  
 No. \_\_\_\_\_ Type \_\_\_\_\_  
 SURFACE COMPLETION  
**Flush well box**

BLANK CASING  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Total Length (TOC to TOS) **88.5 99**  
 GROUT  
 Composing & Proportions **5% bentonite**

Tremied (Y/N) \_\_\_\_\_  
 Interval BGS \_\_\_\_\_  
 CENTRALIZERS (Y/N) \_\_\_\_\_  
 Depth (s) \_\_\_\_\_

SEAL  
 Type **pellets**  
 Setup/Hydration time **12hr** vol. Fluid Added \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

FILTER PACK  
 Type **# 30 Sand (4 bags)**  
 Amt Used **# 0/30 Sand (1 bag)**  
 Tremied (Y/N) \_\_\_\_\_

SCREEN  
 Type **Sch 40 pvc**  
 Diameter **4"**  
 Slot Size & Type **0.02"**  
 Interval BGS **88.5 - 98.5 89 - 99**

SUMP (Y/N) **NO**  
 Interval BGS **88.5 - 98.5** Length **#**  
 Bottom Cap (Y/N) \_\_\_\_\_

BACKFILL PLUG  
 Material \_\_\_\_\_  
 Setup/Hydration time \_\_\_\_\_  
 Tremied (Y/N) \_\_\_\_\_

NESTED WELL COMPLETION (Y/N) \_\_\_\_\_  
 Note if well is nested completion detail should be recorded on a separate Monitor Well Construction Log (one completion per Log).

**Monitor Well Development Data**

Project: Cooper Drumm  
Site No: \_\_\_\_\_  
Boring No: MW-25B  
Sample No: \_\_\_\_\_  
Sampling Date: 3-5-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Congg Douling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 47.08 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 102.98 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom \_\_\_\_\_ ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals 365.027  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Drum  
Site No: \_\_\_\_\_  
Boring No: MW-3(B)  
Sample No: \_\_\_\_\_  
Sampling Date: \_\_\_\_\_  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: 3/6/08  
Sampled By: Gregg Dredky  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 47.89 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 104.26 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom \_\_\_\_\_ ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals 373.3201  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Drive  
Site No: \_\_\_\_\_  
Boring No: MW-34  
Sample No: \_\_\_\_\_  
Sampling Date: 3/6/08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Grigg Drilling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.43 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 67.11 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom \_\_\_\_\_ ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals 131.7754  
(for 2"x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Drum  
Site No: \_\_\_\_\_  
Boring No: mw-35  
Sample No: \_\_\_\_\_  
Sampling Date: 3-5-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Gregg Drilling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.89 ft (from casing top as marked) Method of Measurement: \_\_\_\_\_
- 2) Depth to Product (if present) 103.38 ft Pre Method of Measurement: \_\_\_\_\_
- 3) Static Water Level Elevation \_\_\_\_\_ ft (casing top elevation minus 1)
- 4) Depth to Well Bottom 104.78 ft Post (from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft (4 minus 1)

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals 368.88 gal  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)  
Amount of Water Removed from Well \_\_\_\_\_ gals  
Method of Water Removal \_\_\_\_\_ Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C  
Specific Conductance \_\_\_\_\_ micromhos Method of Measurement \_\_\_\_\_  
pH \_\_\_\_\_ Method of Measurement \_\_\_\_\_  
Physical Appearance \_\_\_\_\_  
Remarks \_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Drum  
Site No: \_\_\_\_\_  
Boring No: MW-36  
Sample No: \_\_\_\_\_  
Sampling Date: 3-10-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Greg Downing  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.73 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 87.10 ft
- 3) Static Water Level Elevation ~~87.10~~ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom 87.11 ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals  
(for 2"x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Dam  
Site No: \_\_\_\_\_  
Boring No: MW-37  
Sample No: \_\_\_\_\_  
Sampling Date: 3-10-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Gregg Drollins  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.73 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 105.50 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom 109.14 ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



Exhibit 7.4-1  
Monitor Well Development Data

Project: \_\_\_\_\_  
Site No: \_\_\_\_\_  
Boring No: MW-29A  
Sample No: \_\_\_\_\_  
Sampling Date: 3-10-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Bregg Drilling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.81 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 66.54 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom 66.52 ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Drun  
Site No: \_\_\_\_\_  
Boring No: MW-38  
Sample No: \_\_\_\_\_  
Sampling Date: 3-7-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Gregg Drilling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.28 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 66.05 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom 66.20 ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_  
Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals  
(for 2"x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_ Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_ Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_  
\_\_\_\_\_



**Monitor Well Development Data**

Project: Casper Drumm  
Site No: \_\_\_\_\_  
Boring No: MW-39  
Sample No: \_\_\_\_\_  
Sampling Date: 3-7-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Gregg Drolling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.39 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 87.12 ft
- 3) Static Water Level Elevation 87.15 ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom \_\_\_\_\_ ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



**Monitor Well Development Data**

Project: Cooper Drumm  
Site No: \_\_\_\_\_  
Boring No: MW-40  
Sample No: \_\_\_\_\_  
Sampling Date: 3-7-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: Gregg Drilling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 46.07 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 167.63 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom 109.84 ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_

Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals 401.9868  
(for 2" x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_

Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos

Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_

Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



Monitor Well Development Data

Project: Cooper Drm  
Site No: \_\_\_\_\_  
Boring No: MMW-41  
Sample No: \_\_\_\_\_  
Sampling Date: 3-10-08  
Sampling Method: \_\_\_\_\_  
Bar. Pres.: \_\_\_\_\_

Job No: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
Sampled By: GG Drilling  
Reviewed By: \_\_\_\_\_  
Elevation: \_\_\_\_\_  
Weather: \_\_\_\_\_  
Amb. Temp. (°F) \_\_\_\_\_ °C

METHOD OF WELL DEVELOPMENT:

- Pumping
- Surging
- Air Lift and Surge
- Bailing
- Mechanical Surging
- Bailer
- Other \_\_\_\_\_

GROUND WATER ELEVATION

- 1) Depth Water Surface 47.97 ft  
(from casing top as marked)
- 2) Depth to Product (if present) 92.95 ft
- 3) Static Water Level Elevation \_\_\_\_\_ ft  
(casing top elevation minus 1)
- 4) Depth to Well Bottom 98.22 ft  
(from casing top as marked)
- 5) Height of Water Column (h) \_\_\_\_\_ ft  
(4 minus 1)

Method of Measurement: \_\_\_\_\_  
Method of Measurement: \_\_\_\_\_

WATER SAMPLING DATA

Volume of Water in Well: (x)(h) = \_\_\_\_\_ gals 293.7194  
(for 2"x = 0.163 gal/ft for 4" x = 0.653 gal/ft)

Amount of Water Removed from Well \_\_\_\_\_ gals

Method of Water Removal \_\_\_\_\_ Was Well Pumped Dry  Yes  No

FIELD ANALYSIS

Water Temp \_\_\_\_\_ °C

Specific Conductance \_\_\_\_\_ micromhos Method of Measurement \_\_\_\_\_

pH \_\_\_\_\_ Method of Measurement \_\_\_\_\_

Physical Appearance \_\_\_\_\_

Remarks \_\_\_\_\_



---

---

**ATTACHMENT 2**

**Summary of Survey Data for Sampling Locations**

---

---

Summary of Cooper Drum Survey Data (2001 to 2008)

2001 Survey Data

Point	Northing	Easting	Elev.	Location
1022	1803630.24	6507664.48	103.88	CPT 12
1091	1802761.46	6507921.34	102.43	CPT-10
1064	1803433.95	6507583.15	104.08	CPT-11
1124	1803457.58	6507221.10	104.12	CPT-13
1150	1803462.79	6506773.06	105.10	CPT-14
1134	1803247.82	6507263.80	103.39	CPT-15
1112	1803054.77	6507524.00	104.12	CPT-16 BORE H
1113	1803055.29	6507522.92	104.21	CPT-16 LOCATI
1081	1803079.68	6507650.76	104.27	CPT-17
1084	1803095.39	6507885.89	103.24	CPT-18
1057	1803033.23	6507272.39	103.08	CPT-19
1094	1802936.21	6507950.60	102.81	CPT-20
1089	1802735.29	6508033.95	102.38	CPT-21
1048	1803270.09	6507385.87	103.68	EW-1
1121	1803400.80	6507285.02	104.71	SB-10
1123	1803376.30	6507317.39	104.82	SB-11
1132	1803326.97	6507341.43	104.14	SB-12
1140	1803245.04	6506943.28	103.93	SB-13
1137	1803218.09	6507096.37	103.52	SB-14
1153	1803177.38	6506887.19	104.56	SB-15
1156	1803125.58	6507042.53	104.05	SB-16
1148	1803434.66	6506649.28	105.62	SB-17
1128	1803409.80	6507244.04	103.88	SB-8
1129	1803372.29	6507240.75	103.89	SB-9
1157	1803158.80	6507060.96	103.40	SG-10
1127	1803409.91	6507244.87	103.89	SG-11
1126	1803415.93	6507272.99	103.97	SG-11R
1130	1803373.06	6507240.94	103.91	SG-12
1120	1803418.15	6507317.12	104.78	SG-13
1122	1803367.03	6507285.89	104.87	SG-14
1042	1803356.82	6507400.11	104.92	SG15 PO
1131	1803300.09	6507323.20	104.01	SG-16
1041	1803387.66	6507430.90	103.89	SG17
1136	1803217.59	6507097.37	103.52	SG-7
1139	1803243.23	6506949.55	103.88	SG-8
1154	1803176.92	6506887.55	104.58	SG-9
cooper3nad83zone5.xls				
12	1803252.22	6507445.41	103.59	CPT -1
13	1803174.82	6507385.81	103.39	CPT -2
11	1803307.95	6507488.28	103.68	CPT -3
24	1803414.42	6507357.16	104.18	CPT -4
33	1803222.80	6507006.71	102.83	MON WELL 1 (RIM 103.72)
29	1803133.60	6507400.91	103.83	MON WELL 10
30	1803279.93	6507514.51	104.25	MON WELL 12
27	1803015.78	6507972.84	102.22	MON WELL 14 BROKEN TOP
35	1803365.35	6507291.23	0.00	MON WELL 2 CASING TEMP UNACCESSIBLE
34	1803309.34	6507347.56	103.42	MON WELL 5 (RIM 104.17)
28	1803160.27	6507706.89	103.21	MON WELL 8 BROKEN TOP
16	1803261.92	6507379.90	103.56	SB-1
26	1803167.60	6507262.48	103.30	SB-2

38	1803505.75	6507392.34	104.30	SB-3
18	1803326.23	6507284.69	103.97	SB-4
17	1803329.65	6507284.14	104.02	SB-4A
25	1803321.17	6507087.84	103.65	SB-5
cprdrm3nad83zone5.xls				
236	1803270.11	6507385.94	103.06	"1"" CASING" EW-1
235	1803270.11	6507385.94	103.24	"6"" CASING"
12	1803253.39	6507445.72	103.59	CPT -1
13	1803175.96	6507386.15	103.39	CPT -2
11	1803309.13	6507488.56	103.68	CPT -3
24	1803415.55	6507357.41	104.18	CPT -4
225	1802761.49	6507921.27	102.47	GSE CPT-10
232	1803015.00	6506878.86	104.61	GSE CPT-5
233	1803129.78	6507077.24	104.14	GSE CPT-6
212	1803384.35	6507472.62	103.89	GSE CPT-7
223	1802871.96	6507644.53	102.69	GSE CPT-8
224	1802957.20	6507565.97	103.18	GSE CPT-9
211	1803270.11	6507385.94	103.63	GSE MW-1
215	1803317.29	6507287.14	103.81	GSE SG-1
216	1803375.30	6507321.30	104.52	GSE SG-2
217	1803418.04	6507341.69	104.33	GSE SG-3
220	1803327.62	6507236.53	103.69	GSE SG-4
219	1803254.93	6507120.83	103.35	GSE SG-5
218	1803230.53	6507064.55	103.59	GSE SG-6
33	1803223.78	6507007.03	102.83	MON WELL 1 (RIM 103.72)
29	1803134.74	6507401.26	103.83	MON WELL 10
30	1803281.12	6507514.81	104.25	MON WELL 12
27	1803017.15	6507973.24	102.22	MON WELL 14 BROKEN TOP
35	1803366.45	6507291.50	0.00	MON WELL 2 CASING TEMPORARILY UNACC
34	1803310.47	6507347.85	103.42	MON WELL 5 (RIM 104.17)
28	1803161.53	6507707.23	103.21	MON WELL 8 BROKEN TOP
214	1803713.94	6507790.63	108.08	RR SLY RAIL -/+CL
231	1802650.93	6508178.64	105.56	RR WLY RAIL +/-CL
16	1803263.05	6507380.20	103.56	SB 1
26	1803168.69	6507262.82	103.30	SB 2
38	1803506.89	6507392.55	104.30	SB 3
18	1803327.33	6507284.97	103.97	SB 4
17	1803330.74	6507284.41	104.02	SB 4A
25	1803322.19	6507088.11	103.65	SB 5

end

southgateSurveyjan4.xls

JOB:2000-030 SOUTH GATE

DATE:1/04/01

COORDINATE SYSTEM:NAD83 ZONE 5

PREPARED BY:PETER WEILBACHER

POINT #	NORTHING	EASTING	ELEV.	DESCRIPTION
2036	1802762.60	6507922.69	102.46	CPT-10
2013	1803366.30	6507409.40	103.98	CPT-22
2032	1803092.44	6507205.35	104.03	CPT-23
2001	1802894.32	6507171.41	102.55	CPT-24
2012	1803269.99	6507386.12	103.27	EW-1 TOC 6IN
2026	1803334.17	6507323.55	104.08	EW-2 NRIM GS
2025	1803333.82	6507323.58	103.65	EW-2 TOC
2004	1803036.36	6507280.90	102.77	MW-15 TOC
2002	1803030.41	6507276.45	102.75	MW-16 TOC
2009	1803260.73	6507452.73	103.65	MW-17 NRIM GS
2008	1803260.45	6507452.54	103.36	MW-17 TOC
2007	1803251.48	6507445.74	103.64	MW-18 N RIM GS
2006	1803251.12	6507445.53	103.42	MW-18 TOC
2011	1803517.95	6507651.69	104.35	MW-19 NRIM GS
2010	1803517.69	6507651.49	104.05	MW-19 TOC
2023	1803367.07	6507291.37	105.02	MW-2 NRIM GS
2022	1803366.59	6507291.45	104.6	MW-2 TOC
2028	1803310.92	6507348.23	104.2	MW-5 NRIM GS
2027	1803310.50	6507347.75	103.43	MW-5 TOC
2003	1803030.76	6507276.73	102.96	N RIM GS MW-16
2021	1803373.86	6507289.78	104.96	SVE-1 NRIM GS
2020	1803373.33	6507289.57	104.5	SVE-1 TOC
2019	1803356.98	6507306.97	104.54	VP-1
2024	1803378.23	6507240.59	103.91	VP-2
2005	1803036.66	6507281.11	102.98	MW-15 N RIM GS

2003- 072

SOUTH- GATE

PT. #	Northing	Easting	ELEV.	DESC.
118	1803455.239	6507294.211	104.74	CPT-25
277	1802678.559	6507527.814	101.57	CPT-26
131	1803451.61	6507527.105	104.38	CPT- 27
133	1803136.291	6507282.418	103.06	CPT-28
228	1802897.154	6507256.428	104.17	CPT-29
229	1803000.766	6507335.95	104.38	CPT-30
203	1803133.647	6507162.121	103.66	CPT-31
231	1802778.36	6507125.566	102.29	CPT-33
232	1802765.91	6507223.082	102.3	CPT-34
249	1802744.081	6507361.472	101.99	CPT-35
230	1802833.225	6507436.075	102.68	CPT-36
317	1802645.796	6507155.934	101.88	CPT-37
302	1802594.306	6507372.115	101.45	CPT-38
129	1803353.865	6507314.052	104.33	CPT-39
125	1803354.428	6507317.422	104.24	hrc 1
126	1803340.366	6507303.444	104.37	hrc 2
127	1803333.321	6507310.321	104.35	hrc 3
128	1803347.794	6507324.367	104.07	hrc 4
134	1803206.79	6507337.446	103.29	MW-20 -.45
130	1803302.691	6507320.169	104.06	MW-21 -.43
204	1803135.689	6507159.632	103.74	MW-22 -.35
132	1803447.683	6507525.647	104.38	MW-23 -.23
233	1802777.844	6507132.228	102.34	MW-24 -.35
242	1802754.146	6507290.293	102.12	MW-25 -.33
241	1802757.4	6507273.567	102.2	MW-26 -.26
315	1802615.828	6507146.42	102.02	MW-27 -.40
316	1802642.088	6507165.333	101.86	MW-28 -.33
303	1802604.44	6507374.587	101.43	MW-29 -.30
304	1802604.722	6507365.912	101.39	MW-30 -.31
276	1802673.19	6507529.862	101.57	MW-31 -.26
275	1802681.673	6507527.057	101.62	MW-32 -.34
116	1803430.777	6507276.278	104.02	SB-18
124	1803394.535	6507345.667	104.41	SB-19
121	1803350.254	6507353.04	104.18	SB-20
122	1803330.312	6507287.79	104.02	SB-21
123	1803333.887	6507236.363	103.8	SB-22
114	1803395.662	6507202.967	103.84	SB-23
112	1803264.846	6506935.14	103.99	SB- 24
111	1803262.113	6506965.797	103.91	SB-25
113	1803234.887	6506942.286	103.97	SB-26
103	1803217.785	6507099.275	103.58	SB-27
104	1803239.752	6507086.705	103.56	SB-28
102	1803235.27	6507117.287	103.49	SB-29
101	1803199.878	6507108.977	103.53	SB-30
107	1803208.137	6507064.845	103.58	SB-31

HRC grid corner

TOP PLASTIC el.	102.84
TOP PLASTIC el.	103.63
TOP PLASTIC el.	103.39
TOP PLASTIC el.	104.15
TOP PLASTIC el.	101.99
TOP PLASTIC el.	101.79
TOP PLASTIC el.	101.94
TOP PLASTIC el.	101.62
TOP PLASTIC el.	101.53
TOP PLASTIC el.	101.13
TOP PLASTIC el.	101.08
TOP PLASTIC el.	101.31
TOP PLASTIC el.	101.28

2003- 072

SOUTH- GATE

PT. #	NORTHING	EASTING	ELEV.	DESC.
120	1803400.841	6507285.022	104.69	SB-32
116	1803463.659	6507275.771	104.39	SG-18
119	1803452.365	6507330.02	104.58	SG-19
115	1803398.263	6507203.715	103.84	SB-20
200	1803163.456	6507020.183	104.04	SG-21
201	1803123.764	6507051.034	104.17	SG-22
202	1803149.035	6507101.381	103.54	SG-23
109	1803218.814	6506978.889	103.79	SG-24
106	1803206.848	6507063.278	103.12	SG-25
108	1803224.596	6507017.5	103.71	SG-26
110	1803222.527	6506979.689	103.88	SG-27
105	1803210.213	6507063.72	103.29	SG-28
100	1803202.162	6507110.571	103.44	SG-29

April 2008 Survey

POINT	NORTHING	EASTING	Elev. (North Rim)	ELEV (TOC)	DESCRIPTION
1004	1803236.13	6507365.58	103.36	102.68	MW-33B
1007	1803239.45	6507363.47	103.31	102.91	MW-33A
1011	1802859.87	6507450.84	102.82	102.32	MW-41
1013	1802852.98	6507451.50	102.74	N/A	HP-36
1014	1802865.10	6507597.82	102.59	N/A	HP-8
1015	1802691.87	6507525.04	101.64	N/A	HP-26
1017	1802662.36	6507532.70	101.47	101.12	MW-31B
1019	1802654.60	6507535.51	101.45	101.03	MW-31A
1021	1802795.20	6507315.34	101.57	N/A	HP-35
1023	1802751.95	6507308.22	102.01	101.53	MW-25B
1025	1802015.45	6507656.21	98.81	N/A	CPT-45
1041	1802439.45	6507268.25	101.07	100.49	MW-37
1043	1802441.06	6507259.23	101.05	N/A	CPT-44
1045	1802441.09	6507256.32	101.10	100.72	MW-36
1060	1802408.87	6507517.66	100.59	N/A	CPT-43
1062	1802408.29	6507520.58	100.65	100.05	MW-40
1064	1802409.31	6507510.79	100.67	100.32	MW-39
1067	1802409.65	6507503.87	100.70	100.25	MW-38
1074	1802375.77	6507764.07	100.28	N/A	CPT-42
1081	1802699.77	6507706.06	101.69	N/A	CPT-40
1083	1802700.24	6507709.70	101.72	101.19	MW-34
1086	1802701.22	6507702.23	101.71	101.22	MkW-35
1089	1802606.00	6507357.06	101.42	100.87	MW-29A
1091	1802548.34	6507802.00	100.92	N/A	CPT-41

Note all survey data performed by the Westland Group, Rancho Cucomonga, CA

---

---

**ATTACHMENT 3**

**Monitor Well Sampling Sheets**

---

---

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stack (Blaine Tech)

Sampling Date: 3-19-08

Reviewer(s): \_\_\_\_\_ Date: 3-19-08

Sampling Method: tubing

Weather: Sunny

Sampling Time: 1320

Ambient Temp. (F): 72

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval:

- 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked)
- 2) Depth to Water Surface (DTW) 49.76 ft  
(from casing top as marked)
- 3) Well Depth (WD): 81.51  
(from casing top as marked)
- 4) Height of Water Column (H) \_\_\_\_\_ ft  
(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-19-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Was Well Pumped Dry? Y

Fe<sup>2</sup> (mg/L): 1.4

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1254	- Start	Purge -			Pump	depth	63ft			
1257	20.44	9013	7.00	7	-114.6	8.12	50.52	2.1	0.7	
1300	20.76	8969	6.99	6	-116.3	1.18	50.52	4.2	0.7	
1303	21.42	8859	6.99	5	-118.0	0.50	50.52	6.3	0.7	
1306	21.72	8839	6.99	5	-119.2	0.39	50.52	8.4	0.7	
1309	21.82	8809	6.98	4	-119.1	0.35	50.52	10.5	0.7	
1312	21.92	8792	6.98	4	-119.3	0.32	50.52	12.6	0.7	
1315	21.98	8781	6.98	4	-119.1	0.30	50.52	14.7	0.7	
- Purge Complete					Sampled @ 1320					

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stahl (Blaine Tech)

Sampling Date: 3-20-08

Reviewer(s): \_\_\_\_\_ Date: 3-20-08

Sampling Method: tab 23

Weather: Cloudy

Sampling Time: 0745

Ambient Temp. (F): 65°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval:

- 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked) 46.86
- 2) Depth to Water Surface (DTW) \_\_\_\_\_ ft  
(from casing top as marked) 71.58
- 3) Well Depth (WD): \_\_\_\_\_ ft  
(from casing top as marked)
- 4) Height of Water Column (H) \_\_\_\_\_ ft  
(from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Purge Method: 2" Grundfos submersible pump

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Date: \_\_\_\_\_

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Was Well Pumped Dry? Y  N

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Fe<sup>2</sup> (mg/L): 0.1

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0720	-	Start	Purge				Pump depth = 67ft			
0723	18.28	1299	6.99	18	100.5	0.73	47.02	2.1	0.7	
0726	18.27	1296	7.04	10	85.8	0.69	47.02	4.2	0.7	
0729	18.18	1288	7.20	9	70.7	0.68	47.02	6.3	0.7	
0732	18.03	1286	7.20	8	62.5	0.70	47.02	8.4	0.7	
0735	18.31	1281	7.20	8	40.1	0.70	47.02	10.5	0.7	
0738	18.54	1283	7.19	8	38.3	0.72	47.02	12.6	0.7	
0741	18.76	1280	7.19	8	35.8	0.72	47.02	14.7	0.7	
-		Purge Complete			Sample @ 0745					

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-4 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/19/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1050 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval: \_\_\_\_\_  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 47.62 ft  
 (from casing top as marked) 81.64  
 3) Well Depth (WD): 34.02 ft  
 (from casing top as marked)  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/19/08  
 Was Well Pumped Dry? Y (N)  
 Fe<sup>2</sup> (mg/L): 3.2

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1021	19.98	12887	6.97	11	-155.2	0.28	48.40	3	1000	
1024	20.45	12950	7.01	15	-188.6	0.29	48.75	4.5	500	
1027	20.55	12971	7.01	10	-193.0	0.34	48.75	6.0	"	
1030	20.62	12979	7.01	7	-207.0	0.36	48.81	7.5	"	
1033	20.79	12983	7.01	6	-204.9	0.30	49.02	9.0	"	
1036	20.83	12985	7.01	4	-204.5	0.30	49.02	10.5	"	
<del>1039</del>								<del>12.0</del>	"	

**INSTRUCTIONS AND COMMENTS**  
 Purging/Sampling Remarks: Pump @ ~ 76'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-5  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3/19/08  
 Sampling Method: \_\_\_\_\_  
 Sampling Time: 1305

Job No: 18500147.03210  
 Sampler(s): \_\_\_\_\_  
 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Weather: \_\_\_\_\_  
 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval: \_\_\_\_\_  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 36.13 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 74.59  
 (from casing top as marked)  
 4) Height of Water Column (H) 38.46 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/19/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 0.4

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1239	20.05	3292	7.34	145	-336.1	0.14	36.69	3	1000	ODOR
1242	20.09	3217	7.34	173	-341.0	0.16	36.69	6	"	
1245	20.65	3146	7.32	123	-320.3	0.28	36.69	9	"	
1248	20.74	3133	7.31	116	-316.0	0.30	36.69	12	"	
1251	20.97	3106	7.29	124	-298.6	0.28	36.69	15	"	
1254	20.98	3095	7.28	181	-290.2	0.31	36.69	18	"	
1257	21.07	3081	7.27	161	-285.0	0.36	36.68	21	"	
1300	21.16	3061	7.26	94	-274.8	0.42	36.68	24	"	
1303	21.20	3053	7.25	67	-270.0	0.48	36.68	27	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~70

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-20-08  
 Sampling Method: tub's  
 Sampling Time: 1100

Job No: 18500147.03210  
 Sampler(s): Alex Stech  
 Reviewer(s): \_\_\_\_\_ Date: 3-20-08  
 Weather: Sunny  
 Ambient Temp. (F): 68

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ fi  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 46.41 fi  
 (from casing top as marked)  
 3) Well Depth (WD): 68.37  
 (from casing top as marked)  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3-20-08  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 0.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1030		Start	Purge				Pump depth = 64ft			
1033	21.21	2216	7.19	249	-4.7	1.30	47.91	12.1	0.7	
1036	22.24	2219	7.19	58	-5.0	1.08	47.91	4.2	0.7	
1039	22.51	2220	7.19	55	-6.3	1.01	47.91	6.3	0.7	
1042	22.50	2219	7.19	37	-7.2	0.97	47.91	8.4	0.7	
1045	22.48	2217	7.19	37	-7.2	0.96	47.91	10.5	0.7	
1048	22.63	2215	7.19	35	-7.5	0.95	47.91	12.6	0.7	
1051	22.61	2213	7.19	34	-7.9	0.93	47.91	14.7	0.7	
		Purge Complete			Sample @		1100			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stack (Blaine Tech)

Sampling Date: 3-20-08

Reviewer(s): \_\_\_\_\_ Date: 3-20-08

Sampling Method: Tubing

Weather: Cloudy

Sampling Time: \_\_\_\_\_

Ambient Temp. (F): 67°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval: \_\_\_\_\_

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft

(from casing top as marked)

2) Depth to Water Surface (DTW) 49.04 ft

(from casing top as marked)

3) Well Depth (WD): 73.32

(from casing top as marked)

4) Height of Water Column (H) 24.28 ft

(from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-20-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Was Well Pumped Dry? Y  N

Fe<sup>2</sup> (mg/L): 1.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0830	Start	Purge					Pump depth 69 ft			
0833	19.75	2663	7.06	10	-135.1	5.01	49.24	2.1	0.7	
0836	20.05	2682	7.11	8	-146.7	3.95	49.24	4.2	0.7	
0839	20.25	2696	7.11	8	-149.5	2.96	49.24	6.3	0.7	
0842	20.44	2701	7.12	8	-150.9	1.96	49.24	8.4	0.7	
0845	20.56	2706	7.12	7	-152.4	1.20	49.24	10.5	0.7	
0848	21.78	2722	7.13	7	-147.3	0.80	49.24	12.6	0.7	
0851	22.01	2751	7.13	6	-145.9	0.61	49.24	14.7	0.7	
0854	22.06	2778	7.13	4	-145.3	0.59	49.24	16.8	0.7	
0857	22.11	2791	7.13	4	-144.4	0.56	49.24	18.9	0.7	
	Purge	Complete					Sampled @ 0905			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stack (Blaine Tech)

Sampling Date: 3-20-08

Reviewer(s): \_\_\_\_\_ Date: 3-20-08

Sampling Method: tubing

Weather: Cloudy

Sampling Time: 1005

Ambient Temp. (F): 68°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounding  Y  N

Other: \_\_\_\_\_

Screened interval: \_\_\_\_\_

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked)

2) Depth to Water Surface (DTW) 49.11 ft  
(from casing top as marked)

3) Well Depth (WD): 60.91  
(from casing top as marked)

4) Height of Water Column (H) 11.8 ft  
(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y <input type="radio"/> N <input type="radio"/>
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-20-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Was Well Pumped Dry? Y  N

Fe<sup>2</sup> (mg/L): 0.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0927	Start	Purge					Pump depth	66.54		
0930	19.74	2342	7.04	198	-10.4	8.43	49.72	2.1	0.7	
0933	20.13	2345	7.02	344	-15.6	1.12	49.72	7.2	0.7	
0936	20.84	2343	7.03	413	-16.2	0.79	49.72	6.3	0.7	
0937	21.75	2352	7.03	322	-16.6	0.57	49.72	8.4	0.7	
0942	21.89	2359	7.04	224	-17.3	0.48	49.72	10.5	0.7	
0945	22.01	2359	7.04	151	-17.6	0.46	49.72	12.6	0.7	
0948	22.12	2361	7.03	84	-18.0	0.42	49.72	14.7	0.7	
0951	22.46	2362	7.03	60	-18.1	0.40	49.72	16.8	0.7	
0954	22.61	2364	7.04	44	-18.0	0.37	49.72	18.9	0.7	
0957	22.65	2366	7.03	40	-18.5	0.33	49.72	21.0	0.7	
1000	22.64	2367	7.03	39	-18.8	0.31	49.72	23.7	0.7	
		Purge Complete					Sample @	1005		

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-15 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/18/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1400 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 48.08 ft  
 (from casing top as marked) 84.93  
 3) Well Depth (WD): 36.85 ft  
 (from casing top as marked)  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/18/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 20-8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1323	21.55	5441	7.00	108	-234.3	0.48	48.13	3	1000	
1326	22.05	5565	7.00	48	-255.5	0.37	48.13	6	"	
1329	22.38	5581	7.01	19	-308.0	0.39	48.13	9	"	
1332	22.53	5584	7.01	13	-335.9	0.36	48.13	12	"	
1335	22.57	5588	7.01	12	-368.8	0.34	48.13	15	"	
1338	22.61	5585	7.01	10	-427.8	0.31	48.13	18	"	
1341	22.67	5587	7.01	8	-424.0	0.29	48.13	21	"	
1344	22.71	5584	7.01	8	-420.9	0.27	48.13	24	"	
1347	22.74	5578	7.01	7	-409.9	0.26	48.13	27	"	
1435								30 gal	✓ PA	
VA 353								35 gal	✓ PA	

**INSTRUCTIONS AND COMMENTS**  
 Purging/Sampling Remarks: Pump @ ~ 80'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: mw-16 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/18/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1300 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 51.49 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 127.83  
 (from casing top as marked)  
 4) Height of Water Column (H) 76.34 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/18/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 0-0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1232	21.34	2615	7.26	238	-295.0	0.64	51.82	3	1000	
1235	21.32	2623	7.18	938	-324.2	0.38	51.82	6	"	
1238	21.52	2859	7.12	319	-332.5	0.34	51.82	9	"	
1241	21.76	3009	7.10	61	-344.9	0.32	51.82	12	"	
1244	21.79	3072	7.09	29	-355.2	0.35	51.82	15	"	
1247	21.78	3098	7.09	17	-366.7	0.39	51.82	18	"	
1250	21.84	3108	7.09	12	-391.0	0.47	51.82	21	"	
1253	21.80	3110	7.09	6	-344.3	0.45	51.82	24	"	
1256	KA							24	KA	KA

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~ 123'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-17 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/19/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 0800 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked) 48.31  
 2) Depth to Water Surface (DTW) \_\_\_\_\_ ft  
 (from casing top as marked) 78.63  
 3) Well Depth (WD): \_\_\_\_\_ ft  
 (from casing top as marked) 30.32  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/19/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 4.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0733	20.35	10632	6.97	132	-161.2	6.39	48.54	3	1000	ODOR
0736	21.28	10470	6.97	63	-161.7	0.37	48.54	6	"	
0739	21.68	10220	6.97	28	-165.6	0.33	48.54	9	"	
0742	21.79	9979	6.97	15	-169.0	0.28	48.54	12	"	
0745	21.85	9822	6.97	8	-175.2	0.26	48.54	15	"	
0748	21.88	9760	6.97	5	-184.1	0.24	48.54	18	"	
0751	21.95	9724	6.97	4	-191.3	0.23	48.54	21	"	

**INSTRUCTIONS AND COMMENTS**  
 Purging/Sampling Remarks: Pump @ ~74'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-18  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3/19/08  
 Sampling Method: \_\_\_\_\_  
 Sampling Time: 0850

Job No: 18500147.03210  
 Sampler(s): \_\_\_\_\_  
 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Weather: \_\_\_\_\_  
 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 53.53 ft  
 (from casing top as marked) 127.56  
 3) Well Depth (WD): \_\_\_\_\_ ft  
 (from casing top as marked) 71.03  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/19/08  
 Was Well Pumped Dry? Y (N)  
 Fe<sup>2</sup> (mg/L): 1.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0817	19.31	3267	6.75	28	-191.4	0.78	53.57	1.8	0.6	
0820	19.72	3567	10.33	189	-229.3	0.39	53.57	3.6	"	
0823	19.92	3621	8.97	401	-236.9	0.34	53.57	5.4	"	
0826	20.30	3861	8.17	286	-231.2	0.35	53.57	7.2	"	
0829	20.64	4308	7.37	171	-211.6	0.34	53.57	9.0	"	
0832	20.97	4520	7.12	98	-210.9	0.35	53.57	10.8	"	
0835	20.96	4609	7.08	55	-215.6	0.36	53.57	12.6	"	
0838	21.02	4638	7.06	46	-221.6	0.31	53.57	14.4	"	
0841	21.10	4654	7.06	34	-226.4	0.36	53.57	15.2		

**INSTRUCTIONS AND COMMENTS**  
 Purging/Sampling Remarks: Pump @ ~ 123'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-19 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/19/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 0955 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 40.69 ft  
 (from casing top as marked) 77.17  
 3) Well Depth (WD): \_\_\_\_\_ ft  
 (from casing top as marked) 28.48  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/19/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 3.4

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0925	20.61	6172	6.99	209	-169.1	0.28	48.77	3	1000	
0928	21.80	6190	7.00	89	-213.1	0.25	48.77	6	"	
0931	22.23	6163	7.00	46	-237.7	0.27	48.77	9	"	
0934	22.39	6118	7.00	25	-254.0	0.25	48.77	12	"	
0937	22.53	6111	7.00	17	-256.9	0.21	48.77	15	"	
0940	22.61	6110	7.00	13	-264.7	0.22	48.77	18	"	
0943	22.53	6099	7.00	11	-271.9	0.20	48.77	21	"	

**INSTRUCTIONS AND COMMENTS**  
 Purging/Sampling Remarks: Pump @ ~ 73'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: \_\_\_\_\_  
 Location No: \_\_\_\_\_ Job No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_ Sampler(s): Alex Stack (Blaine Tech)  
 Sampling Date: 3-19-08 Reviewer(s): \_\_\_\_\_ Date: 3-19-08  
 Sampling Method: tubing Weather: Cloudy  
 Sampling Time: 0755 Ambient Temp. (F): 66°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_

- 1) Well Casing Elevation (WCE) \_\_\_\_\_  
 (from casing top as marked)
- 2) Depth to Water Surface (DTW) 48.03  
 (from casing top as marked)
- 3) Well Depth (WD) 68.52  
 (from casing top as marked)
- 4) Height of Water Column (H) 20.49  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DAT**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grand Seg  
 Purge Date: 3-19-08  
 Was Well Pumped Dry? Y   
 Fe<sup>2</sup> (mg/L): 0.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0721	-	Start	Purge			Pump	depth =	6354		
0724	19.11	5962	6.87	39	244.4	1.15	48.43	2.1	0.7	
0727	20.33	5858	6.87	34	205.3	0.91	48.47	4.2	0.7	
0730	20.64	5917	6.91	29	180.2	0.90	48.48	6.3	0.7	
0733	21.35	5900	6.92	26	148.4	0.92	48.48	8.4	0.7	
0736	21.75	5926	6.93	24	117.2	0.98	48.48	10.5	0.7	
0739	21.97	5961	6.93	21	84.1	1.02	48.48	12.6	0.7	
0742	22.05	5987	6.93	20	81.4	1.00	48.48	14.7	0.7	
0745	22.07	5996	6.92	18	78.3	0.97	48.48	16.8	0.7	
0748	22.11	6004	6.92	17	75.3	0.95	48.45	18.9	0.7	
-		Purge Complete				Sampled @ 0755				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

### Monitor Well Sampling Data

Project: \_\_\_\_\_

Location No: \_\_\_\_\_

Job No: \_\_\_\_\_

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stack

Sampling Date: 3-19-08

Reviewer(s): \_\_\_\_\_ Date: 3-19-08

Sampling Method: tubing

Weather: cloudy

Sampling Time: 0845

Ambient Temp. (F): 65°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

1) Well Casing Elevation (WCE) \_\_\_\_\_  
(from casing top as marked)

2) Depth to Water Surface (DTW) 48.13  
(from casing top as marked)

3) Well Depth (WD) 89.51  
(from casing top as marked)

4) Height of Water Column (H) 41.38  
(from casing top as marked)

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DAT**

Purge Method: 2" Grindstones

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Date: 3-19-08

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Was Well Pumped Dry? Y  N

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Fe<sup>2</sup> (mg/L): 3.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0815		Start	Purge			Pump	depth ~ 85 ft			
0818	20.55	7849	6.95	21	-131.9	0.93	48.72	2.1	0.7	
0821	21.13	7883	6.93	20	-108.7	0.79	48.72	4.2	0.7	
0824	21.54	7894	6.95	20	-103.5	0.66	48.72	6.3	0.7	
0827	21.71	7899	6.95	20	-103.7	0.55	48.72	8.4	0.7	
0830	21.84	7902	6.94	20	-107.2	0.51	48.72	10.5	0.7	
0833	21.82	7900	6.96	20	-110.6	0.48	48.72	12.6	0.7	
0836	21.85	7899	6.96	20	-111.2	0.45	48.72	14.7	0.7	
0839	21.89	7896	6.96	20	-113.4	0.41	48.72	16.8	0.7	
- Purge Complete					Sampled @	0845				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-21  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3/19/08  
 Sampling Method: \_\_\_\_\_  
 Sampling Time: 1150

Job No: 18500147.03210  
 Sampler(s): \_\_\_\_\_  
 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Weather: \_\_\_\_\_  
 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked) 48.75  
 2) Depth to Water Surface (DTW) 74.58 ft  
 (from casing top as marked)  
 3) Well Depth (WD): \_\_\_\_\_ ft  
 (from casing top as marked)  
 4) Height of Water Column (H) 25.83 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/19/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 1.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1126	20.11	8403	6.93	95	-188.7	0.53	48.64	3	1000	
1129	21.22	8448	6.93	38	-210.3	0.46	48.64	6	"	
1132	21.48	8446	6.93	19	-217.5	0.41	48.64	9	"	
1135	21.60	8427	6.93	14	-225.1	0.35	48.64	12	"	
1138	21.64	8407	6.93	10	-227.5	0.34	48.64	15	"	
1141	21.75	8372	6.94	8	-220.2	0.31	48.64	18	"	
1143	21.78	8329	6.94	7	-224.2	0.29	48.64	21	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~ 70'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: MW-22

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): \_\_\_\_\_

Sampling Date: 3/18/08

Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_

Sampling Method: \_\_\_\_\_

Weather: \_\_\_\_\_

Sampling Time: 1430

Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N

Other: \_\_\_\_\_

Screened interval:

- 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked) 48.57
- 2) Depth to Water Surface (DTW) 73.18 ft  
(from casing top as marked)
- 3) Well Depth (WD): \_\_\_\_\_ ft  
(from casing top as marked) 24.61
- 4) Height of Water Column (H) \_\_\_\_\_ ft  
(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3/18/08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Was Well Pumped Dry? Y (N)

Fe<sup>2</sup> (mg/L): 3.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1415	21.82	6546	7.11	180	-380.6	0.31	48.62	3	1000	
1418	22.24	6543	7.10	148	-383.6	0.34	48.62	6	"	
1421	22.67	6525	7.11	119	-377.7	0.38	48.62	9	"	
1424	22.83	6500	7.17	84	-385.9	0.34	48.62	12	"	
1427	22.85	6477	7.17	78	-363.6	0.30	48.62	15	"	
1430	22.94	6454	7.16	73	-359.2	0.27	48.62	18	"	
1433	23.01	6427	7.17	69	-354.9	0.25	48.62	21	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~68'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Steck (Blaine Tech)

Sampling Date: 3-19-08

Reviewer(s): \_\_\_\_\_ Date: 3-19-08

Sampling Method: Tubing

Weather: Sunny

Sampling Time: 1430

Ambient Temp. (F): 72°

WATER ELEVATION DATA

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval:

- 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked)
- 2) Depth to Water Surface (DTW) 48.83 ft  
(from casing top as marked)
- 3) Well Depth (WD): 79.72  
(from casing top as marked)
- 4) Height of Water Column (H) 30.89 ft  
(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

WELL PURGE AND SAMPLING DATA

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-19-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TV)

Was Well Pumped Dry? Y  N

Fe<sup>2</sup> (mg/L): 2.9

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1406		Start	Purge		- Pump depth	- 75 ft				
1409	21.60	8872	7.03	5	-114.9	1.92	49.21	2.1	0.7	
1412	21.43	8830	7.01	4	-110.6	1.08	49.21	4.2	0.7	
1415	21.77	8858	7.00	4	-106.5	0.66	49.21	6.3	0.7	
1418	22.50	8870	6.97	4	-101.5	0.43	49.21	8.4	0.7	
1421	22.37	8885	6.96	4	-99.9	0.31	49.21	10.5	0.7	
1424	22.40	8900	6.96	4	-98.8	0.30	49.21	12.6	0.7	
1427	22.43	8916	6.96	4	-97.8	0.31	49.21	14.7	0.7	
		Purge Complete			-		Sampled @		1430	

INSTRUCTIONS AND COMMENTS

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-24 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/18/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 0745 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval: \_\_\_\_\_  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 47.67 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 84.12  
 (from casing top as marked)  
 4) Height of Water Column (H) 36.45 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
CV = 3.14 [(D/2)/12 in.ft]^2 h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/18/08  
 Was Well Pumped Dry? Y (N)  
 Fe<sup>2</sup> (mg/L): 3.4

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0753	20.51	5499	6.79	409	-84.0	0.64	47.68	3	1000	
0756	20.94	5433	6.77	249	-110.2	0.69	47.68	6	"	
0759	21.74	5172	6.77	156	-131.7	0.64	47.68	9	"	
0802	22.15	4760	6.79	100	-152.3	0.49	47.68	12	"	
0805	22.26	4555	6.78	100	-167.9	0.46	47.68	15	"	
0808	22.34	4496	6.79	94	-176.5	0.42	47.68	18	"	
0811	22.40	4458	6.80	96	-186.7	0.42	47.68	21	"	
0814	22.46	4449	6.79	30	-192.7	0.41	47.68	24	"	
0817	22.50	4455	6.79	22	-198.9	0.39	47.68	27	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~80'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-25  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3/10/08  
 Sampling Method: \_\_\_\_\_  
 Sampling Time: 1115

Job No: 18500147.03210  
 Sampler(s): \_\_\_\_\_  
 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Weather: \_\_\_\_\_  
 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 47.57 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 88.79 ft  
 (from casing top as marked)  
 4) Height of Water Column (H) 41.22 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/18/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 3.6

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1104	21.41	4759	7.05	196	-324.0	0.40	47.59	3	1000	
1107	21.63	4784	7.04	182	-357.8	0.35	47.59	6	"	
1110	22.25	4787	7.04	107	-319.1	0.42	47.59	9	"	
1113	22.48	4789	7.04	69	-375.0	0.40	47.59	12	"	
1116	22.51	4788	7.04	66	-383.7	0.36	47.59	15	"	
1119	22.53	4785	7.04	62	-381.7	0.33	47.59	18	"	
1122	22.57	4779	7.04	55	-372.0	0.31	47.59	21	"	

**INSTRUCTIONS AND COMMENTS**  
 Purging/Sampling Remarks: Pump @ ~ 84'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-25B Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/18/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1015 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 47.42 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 104.34  
 (from casing top as marked)  
 4) Height of Water Column (H) 56.92 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/18/08  
 Was Well Pumped Dry? Y (N)  
 Fe<sup>2</sup> (mg/L): 3.6

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0942	20.95	5985	7.04	183	-148.9	1.28	48.21	3	1000	
0945	20.97	6137	7.03	130	-171.8	1.00	48.40	6	"	
0948	21.19	6175	7.02	88	-179.5	1.21	49.23	7.5	500	
0951	21.35	6169	7.02	240	-187.2	1.22	49.30	9.0	"	
0954	21.49	6177	7.02	425	-179.3	1.08	49.57	10.5	"	
0957	21.81	6184	7.01	102	-203.4	0.92	50.00	12.0	"	
1000	21.80	6181	7.01	84	-209.6	1.00	50.00	13.5	"	
1003	22.11	6186	7.01	44	-201.0	0.84	50.00	15.0	"	
1006	22.34	6178	7.02	41	-207.5	0.90	50.00	16.5	"	
1009	22.27	6190	7.02	25	-208.5	0.91	50.00	18.0	"	
1012	22.22	6179	7.02	22	-210.9	0.88	50.00	19.5	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks Pump @ ~100'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-26 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/18/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 0915 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 52.11 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 131.76  
 (from casing top as marked)  
 4) Height of Water Column (H) 79.65 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/18/08  
 Was Well Pumped Dry? Y (N)  
 Fe<sup>2</sup> (mg/L): 0.4

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0849	20.43	2413	7.17	>1000	-110.6	0.36	52.37	3	1000	
0852	20.83	2543	7.17	>1000	-165.5	0.45	52.37	6	"	
0855	21.26	2590	7.16	580	-198.2	0.54	52.37	9	"	
0858	21.31	2638	7.15	142	-208.1	0.54	52.37	12	"	
0901	21.42	2685	7.14	41	-227.3	0.57	52.37	15	"	
0904	21.42	2689	7.14	35	-231.0	0.56	52.37	18	"	
0907	21.47	2688	7.14	27	-240.5	0.49	52.37	21	"	
0910	21.52	2681	7.14	23	-246.8	0.44	52.37	24	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks Pump @ ~ 127'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stock (Blaine Tech)

Sampling Date: 3-17-08

Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_

Sampling Method: Hand

Weather: Sunny

Sampling Time: 1235

Ambient Temp. (F): 72°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  Y  N

Other: \_\_\_\_\_

Screened interval: \_\_\_\_\_

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked)

2) Depth to Water Surface (DTW) 47.51 ft  
(from casing top as marked)

3) Well Depth (WD): 89.87  
(from casing top as marked)

4) Height of Water Column (H) 42.36 ft  
(from casing top as marked)

Product Obs: Y  N

Depth to Product: \_\_\_\_\_

Method of Measurement: Interface Probe Y  N

Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Purge Method: 2" Grundfos submersible pump

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Date: 3-17-08

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Was Well Pumped Dry? Y  N

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TV)

Fe<sup>2</sup> (mg/L): 3.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1205		Start	Purge		Pump	depth - 85 ft			0.7	
1208	22.15	4175	6.96	6	-91.0	2.86	47.59	2.1	0.7	odor
1211	21.77	4236	6.98	5	-90.1	1.65	47.62	4.2	0.7	
1214	22.21	4262	6.96	5	-90.4	1.30	47.63	6.3	0.7	
1217	22.74	4305	6.93	5	-91.6	0.89	47.64	8.4	0.7	
1220	22.86	4327	6.90	5	-92.8	0.79	47.64	10.6	0.7	
1223	22.93	4340	6.91	5	-93.2	0.78	47.65	12.7	0.7	
1226	22.96	4345	6.91	5	-93.9	0.74	47.65	14.8	0.7	
		Purge Complete				Sampled @	1235			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Steck (Blake Tech)

Sampling Date: 3-17-08

Reviewer(s): \_\_\_\_\_ Date: 3-17-08

Sampling Method: tubing

Weather: Sunny

Sampling Time: 1400

Ambient Temp. (F): 74°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder (Y) N

Other: \_\_\_\_\_

Screened interval: \_\_\_\_\_

- 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked)
- 2) Depth to Water Surface (DTW) 47.79 ft  
(from casing top as marked)
- 3) Well Depth (WD): 113.70  
(from casing top as marked)
- 4) Height of Water Column (H) 66.21 ft  
(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-17-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TV)

Was Well Pumped Dry? Y N

Fe<sup>2</sup> (mg/L): 3.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1301		Start Purge			Pump depth ~ 110 ft					
1304	21.50	92	7.22	56	-31.3	9.58	47.83	2.1	0.7	
1307	21.72	53	6.40	47	-82.9	1.22	47.86	4.2	0.7	
1310	21.83	52	6.30	22	-98.7	1.03	47.88	6.3	0.7	
1313	22.07	440	6.32	18	-118.1	0.81	47.90	8.4	0.7	
1316	22.47	4492	6.80	15	-81.0	0.78	47.93	10.5	0.7	
1319	22.44	6767	6.85	10	-80.3	0.80	47.95	12.6	0.7	
1322	22.45	6761	6.88	5	-78.9	0.77	47.96	14.7	0.7	
1325	22.54	6842	6.88	5	-76.4	0.75	47.98	16.8	0.7	
		Purge Complete								

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 5-18-08  
 Sampling Method: tubing  
 Sampling Time: 1120

Job No: 18500147.03210  
 Sampler(s): Alex Stack (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Weather: Sunny  
 Ambient Temp. (F): 70

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 46.84 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 65.71  
 (from casing top as marked)  
 4) Height of Water Column (H) 18.87 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3-18-08  
 Was Well Pumped Dry? Y   
 Fe<sup>2</sup> (mg/L): 1.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1054	-	Start	Purge				Pump depth ~ 61 ft			
1057	21.66	2189	6.91	5	-98.4	1.14	46.96	2.1	0.7	
1100	22.55	2218	6.91	5	-103.9	0.54	46.97	4.2	0.7	
1103	22.99	2243	6.91	5	-103.4	0.43	47.00	6.3	0.7	
1106	22.58	2243	6.91	4	-100.3	0.31	47.01	8.4	0.7	
1109	22.73	2244	6.91	4	-101.6	0.29	47.01	10.5	0.7	
1112	22.84	2247	6.91	4	-101.5	0.30	47.01	12.6	0.7	
1115	23.00	2251	6.91	4	-100.1	0.29	47.01	14.7	0.7	
-		Purge Complete					Sample @ 1120			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-18-08  
 Sampling Method: tubing  
 Sampling Time: 1250

Job No: 18500147.03210  
 Sampler(s): Alex Stack (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: 3-16-08  
 Weather: \_\_\_\_\_  
 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounding  Y  N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 90.11 47.23 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 90.11  
 (from casing top as marked)  
 4) Height of Water Column (H) 42.88 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3-18-08  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 3.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1226		Start		Purge		Pump	depth ~ 86 ft			
1229	21.86	5401	7.06	8	-96.4	2.22	47.33	2.1	0.7	
1232	22.25	5435	7.03	8	-101.2	0.74	47.34	4.2	0.7	
1235	22.70	5454	7.01	6	-102.6	0.41	47.34	6.3	0.7	
1238	22.69	5458	7.01	6	-102.5	0.30	47.34	8.4	0.7	
1241	22.72	5484	7.01	6	-102.5	0.28	47.34	10.5	0.7	
1244	22.77	5501	7.00	6	-102.6	0.27	47.34	12.6	0.7	
Purge Complete								Sample @	1250	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: \_\_\_\_\_  
 Location No: \_\_\_\_\_ Job No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_ Sampler(s): Alex Stack (Blake Tech)  
 Sampling Date: 3-18-08 Reviewer(s): \_\_\_\_\_ Date: 3-18-08  
 Sampling Method: Tubing Weather: Sunny  
 Sampling Time: \_\_\_\_\_ Ambient Temp. (F): 73°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_

- 1) Well Casing Elevation (WCE) \_\_\_\_\_  
 (from casing top as marked)
- 2) Depth to Water Surface (DTW) 47.71  
 (from casing top as marked)
- 3) Well Depth (WD) 115.03  
 (from casing top as marked)
- 4) Height of Water Column (H) 67.32  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
	CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)

**WELL PURGE AND SAMPLING DAT**

Purge Method: 2" Gravel/Sag  
 Purge Date: 3-18-08  
 Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Was Well Pumped Dry? Y  N  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)  
 Fe<sup>2</sup> (mg/L): 0.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1316	-	Start		Purge			Pump depth ~ 111 ft			
1319	23.42	4852	7.45	15	-172.1	1.07	47.83	2.1	0.7	OK
1322	22.00	5124	7.24	15	-182.0	0.63	47.83	4.2	0.7	
1325	22.34	5607	7.11	11	-168.5	0.45	47.83	6.3	0.7	
1328	22.57	5773	7.08	9	-160.5	0.39	47.83	8.4	0.7	
1332	22.58	6584	7.01	7	-115.9	0.37	47.84	10.5	0.7	
1334	22.55	6746	7.00	6	-110.4	0.35	47.84	12.6	0.7	
1337	22.57	6775	6.99	6	-105.3	0.33	47.85	14.7	0.7	
1340	22.62	6783	6.99	6	-100.9	0.30	47.85	16.8	0.7	
-		Purge Complete				Sampled @ 1345				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stock (Blake Tech)

Sampling Date: 3-18-05

Reviewer(s): \_\_\_\_\_ Date: 3-18-05

Sampling Method: 7.615

Weather: Sunny

Sampling Time: 1620

Ambient Temp. (F): 69°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  Y  N

Other: \_\_\_\_\_

Screened interval:

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft

(from casing top as marked)

2) Depth to Water Surface (DTW) 46.78 ft

(from casing top as marked)

3) Well Depth (WD): 63.65

(from casing top as marked)

4) Height of Water Column (H) 16.87 ft

(from casing top as marked)

Product Obs:	<input type="radio"/> Y	<input type="radio"/> N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	<input type="radio"/> Y <input type="radio"/> N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Purge Method: 2" Grundfos submersible pump

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals

(CV x H = VW)

Purge Date: 3-18-05

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Was Well Pumped Dry?  Y  N

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals

(VW x NC = TV)

Fe<sup>2</sup> (mg/L): 1.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0953	-	Start	Purge	Pump	Depth	~ 59 ft				
0956	22.02	3496	6.88	67	-54.5	9.36	46.90	2.1	0.7	
0959	22.14	3489	6.87	57	-57.1	1.91	46.90	4.2	0.7	
1002	22.81	3452	6.86	47	-56.6	1.07	46.90	6.3	0.7	
1005	23.21	3440	6.87	38	-55.3	0.83	46.90	8.4	0.7	
1008	23.63	3442	6.88	34	-56.4	0.68	46.90	10.5	0.7	
1011	23.84	3434	6.88	32	-54.4	0.63	46.90	12.6	0.7	
1014	23.98	3428	6.88	31	-54.0	0.60	46.90	14.7	0.7	
		Purge Complete				Sampled @	1020			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stock (Blaine Tech)

Sampling Date: 3-18-08

Reviewer(s): \_\_\_\_\_ Date: 3-18-08

Sampling Method: tubing

Weather: Sunny

Sampling Time: 0845

Ambient Temp. (F): 67°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval:

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft

(from casing top as marked) 47.26

2) Depth to Water Surface (DTW) \_\_\_\_\_ ft

(from casing top as marked)

3) Well Depth (WD): 89.83

(from casing top as marked)

4) Height of Water Column (H) 42.57 ft

(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Purge Method: 2" Grundfos submersible pump

Purge Date: 3-18-08

Was Well Pumped Dry? Y  N

Fe<sup>2</sup> (mg/L): 4.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0817	20.15	2849	6.98	25	-73.7	3.35	47.36	2.1	0.7	
0820	21.03	6419	6.89	6	-73.8	4.23	47.40	4.2	0.7	
0823	21.26	6518	6.92	5	-85.5	2.58	47.42	6.3	0.7	
0826	21.33	6543	6.92	5	-87.0	2.23	47.45	8.4	0.7	
0829	21.58	6624	6.93	5	-90.6	1.76	47.47	10.6	0.7	
0832	21.81	6647	6.94	4	-93.2	1.21	47.50	12.6	0.7	
0835	22.02	6616	6.94	4	-92.4	1.17	47.52	14.7	0.7	
0838	22.50	6604	6.94	4	-93.1	1.10	47.53	16.8	0.7	
-	Purge Complete			-		Sampled @ 0845				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-18-08  
 Sampling Method: tubing  
 Sampling Time: 0935

Job No: 18500147.03210  
 Sampler(s): Alex Stack (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: 3-18-08  
 Weather: Sunny  
 Ambient Temp. (F): 67°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 47.34 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 106.90  
 (from casing top as marked)  
 4) Height of Water Column (H) 59.56 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: \_\_\_\_\_  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 36

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0910	-	Start	Purge				Pump depth ~102 ft			
0913	21.03	6980	7.00	29	-51.0	1.74	47.40	2.1	0.7	
0916	21.80	7023	6.97	17	-69.5	1.42	47.41	4.2	0.7	
0919	22.11	7065	6.96	16	-82.6	1.04	47.42	6.3	0.7	
0922	22.46	7132	6.95	15	-94.8	0.80	47.44	8.4	0.7	
0925	22.63	7159	6.94	13	-101.6	0.78	47.43	10.5	0.7	
0928	22.70	7204	6.93	13	-107.3	0.73	47.45	12.6	0.7	
-	-	Purge Complete					Sampled @	0935		

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-18-08  
 Sampling Method: tablets  
 Sampling Time: \_\_\_\_\_  
 Job No: 18500147.03210  
 Sampler(s): Alex Strack (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Weather: Clear  
 Ambient Temp. (F): 65°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  Y  N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 51.54 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 133.31  
 (from casing top as marked)  
 4) Height of Water Column (H) 81.77 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: \_\_\_\_\_  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 0.034 0.3

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0716	-	Start	Purge				Pump depth ~ 128 ft			
0719	19.71	3798	6.97	20	-163.5	9.58	52.63	2.1	0.7	odor
0722	20.20	3849	7.14	14	-168.8	3.46	51.67	4.2	0.7	
0725	20.73	3892	7.21	14	-181.2	1.87	51.69	6.3	0.7	
0726	21.48	3905	7.20	14	-186.5	1.34	51.70	8.4	0.7	
0731	21.82	3911	7.21	14	-190.0	1.28	51.72	10.5	0.7	
0734	21.90	3915	7.22	14	-188.3	1.21	51.73	12.6	0.7	
		Purge Complete			Sample @		0740			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: \_\_\_\_\_  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-19-08  
 Sampling Method: Boiler  
 Sampling Time: 1025  
 Job No: \_\_\_\_\_  
 Sampler(s): Alex Stock (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: 3-19-08  
 Weather: Sunny  
 Ambient Temp. (F): 69°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_

- 1) Well Casing Elevation (WCE) \_\_\_\_\_  
 (from casing top as marked) 47.82
- 2) Depth to Water Surface (DTW) \_\_\_\_\_  
 (from casing top as marked) 60.53
- 3) Well Depth (WD) \_\_\_\_\_  
 (from casing top as marked) 12.71
- 4) Height of Water Column (H) \_\_\_\_\_  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DAT**

Single Casing Volume of Water in Well (VW) 2.1 gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) 3 gals  
 Total Volume of Water to Purge (TV) 6.3 gals  
 (VW x NC = TC)

Purge Method: Boiler  
 Purge Date: 3-19-08  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 0.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (gals)	Flow Rate (L/min)	Observations Phys. App.
1000		Start	Purge					45.1		
1003	20.65	2451	7.20	71000	190.2	5.10	48.13	1.5	NA	
1006	20.65	4723	7.15	71000	-68.3	3.69	48.31	2.5		
1007	20.60	4700	7.18	71000	-65.2	3.65	48.40	3.5		
1010	20.51	4172	7.15	71000	-60.4	1.50	48.51	4.5		
1014	20.71	4154	7.10	71000	-65.3	1.52	48.72	5.5		
1017	20.59	4157	7.11	71000	-66.4	1.47	48.90	6.5		
-		Purge Complete			Sample @	1025				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

### Monitor Well Sampling Data

Project: \_\_\_\_\_  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-19-08  
 Sampling Method: Tubing  
 Sampling Time: \_\_\_\_\_

Job No: \_\_\_\_\_  
 Sampler(s): Alex Stack (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: 3-19-08  
 Weather: Cloudy  
 Ambient Temp. (F): 68°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N  
 Other: \_\_\_\_\_

- 1) Well Casing Elevation (WCE) \_\_\_\_\_  
 (from casing top as marked) 47.93
- 2) Depth to Water Surface (DTW) \_\_\_\_\_  
 (from casing top as marked) 89.75
- 3) Well Depth (WD) \_\_\_\_\_  
 (from casing top as marked) 41.82
- 4) Height of Water Column (H) \_\_\_\_\_  
 (from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DAT**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) 3.4 gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grindstones  
 Purge Date: \_\_\_\_\_  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 3.6

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0908	-	Start	Purge			Pump depth	~85 ft			
0911	20.90	7451	6.98	5	-98.7	1.78	48.32	2.1	0.7	
0914	21.35	7467	6.99	5	-100.6	0.81	48.32	4.2	0.7	
0917	21.78	7514	6.99	5	-101.7	0.53	48.32	6.3	0.7	
0920	21.95	7551	6.99	4	-101.8	0.41	48.32	8.4	0.7	
0923	22.06	7575	6.99	4	-102.4	0.38	48.32	10.5	0.7	
0926	22.25	7592	6.98	4	-102.5	0.35	48.32	12.6	0.7	
0929	22.31	7596	6.98	4	-100.9	0.32	48.32	14.7	0.7	
0932	22.32	7600	6.98	4	-101.5	0.30	48.32	16.8	0.7	
-		Purge	Complete			Sampled @				0940

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-34 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/17/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1330 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 46.95 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 66.84  
 (from casing top as marked)  
 4) Height of Water Column (H) 19.89 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/17/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 1.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1245	21.80	3391	7.02	36	-287.1	0.34	46.97	3	1000	
1248	23.12	3412	7.01	19	-352.3	0.45	46.97	6	"	
1251	23.13	3415	7.00	16	-356.9	0.43	46.97	9	"	
1254	23.18	3418	7.00	17	-367.0	0.35	46.97	12	"	
1257	23.28	3421	7.00	21	-394.5	0.30	46.97	15	"	
1300	23.29	3421	6.99	20	-395.8	0.30	46.97	18	"	
1303	23.34	3423	7.02	20	-400.7	0.29	46.97	21	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~62'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-35 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/17/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1220 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 47.11 ft  
 (from casing top as marked)  
 3) Well Depth (WD): 104.42  
 (from casing top as marked)  
 4) Height of Water Column (H) 57.31 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/17/08  
 Was Well Pumped Dry? Y (N)  
 Fe<sup>2</sup> (mg/L): 2.6

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1153	21.32	6386	7.01	635	-199.6	0.64	47.35	2.4	800	
1156	21.43	6491	7.01	391	-225.0	0.59	47.35	4.8	"	
1159	21.90	6509	7.01	373	-237.8	0.64	47.35	7.2	"	
1202	22.10	6517	7.01	112	-245.8	0.66	47.35	9.6	"	
1205	22.21	6519	7.01	52	-260.1	0.58	47.35	12	"	
1208	22.23	6515	7.01	37	-276.1	0.52	47.35	14.4	"	
1211	22.28	6509	6.99	24	-296.3	0.47	47.35	16.8	"	
1214	22.32	6506	7.01	21	-300.8	0.45	47.35	19.2	"	
1217	22.34	6502	7.01	20	-305.1	0.42	47.35	21.6	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~100'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-30 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/17/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1100 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 46.76 ft  
 (from casing top as marked) 86.97  
 3) Well Depth (WD): 86.97  
 (from casing top as marked)  
 4) Height of Water Column (H) 40.21 ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
$CV = 3.14 [(D/2)/12 \text{ in. ft}]^2 \text{h (7.48 gal/cu. Ft.)}$	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/17/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 1.5

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1032	21.46	4403	7.01	522	-228.4	0.56	47.67	2.4	800	
1035	21.86	4427	6.84	458	-244.0	0.59	47.67	4.8	"	
1038	22.06	4438	6.85	309	-237.0	0.61	47.67	7.2	"	
1041	22.41	4439	7.00	227	-234.4	0.65	47.67	9.6	"	
1044	22.54	4436	7.05	151	-221.7	0.60	47.67	12	"	
1047	22.71	4436	7.04	145	-222.6	0.54	47.67	14.4	"	
1050	22.81	4417	7.05	137	-229.0	0.51	47.70	16.8	"	
1053	22.86	4408	7.05	113	-227.3	0.51	47.70	19.2	"	
1056	22.94	4384	7.06	104	-219.6	0.47	47.70	21.6	"	
1059	23.00	4378	7.07	99	-218.1	0.47	47.70	23.0	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump @ ~80'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-37 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/17/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1000 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 46.88 ft  
 (from casing top as marked) 108.46  
 3) Well Depth (WD): \_\_\_\_\_ ft  
 (from casing top as marked) 61.58  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/17/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 2.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
<del>107</del>										
0927	21.19	7069	7.03	887	-212.1	0.60	47.07	3	1000	
0930	21.42	7070	7.05	714	-220.7	0.63	47.07	6	"	
0933	21.81	7070	7.06	483	-246.3	0.71	47.07	9	"	
0936	22.01	7064	7.05	198	-261.2	0.57	47.07	12	"	
0939	22.04	7056	6.99	86	-270.7	0.54	47.07	15	"	
0942	22.08	7045	7.11	47	-289.8	0.50	47.07	18	"	
0945	22.12	7038	7.05	35	-289.0	0.48	47.07	21	"	
0948	22.14	7041	7.09	29	-290.5	0.45	47.07	24	"	
0951	22.18	7038	7.09	22	-298.4	0.43	47.07	27	"	
0954	22.21	7036	7.09	23	-300.4	0.42	47.07	30	"	

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks: Pump set @ ~104'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stech (Blaine Tech)

Sampling Date: 3-17-08

Reviewer(s): \_\_\_\_\_ Date: 3-17-08

Sampling Method: tubing

Weather: Sunny

Sampling Time: 1125

Ambient Temp. (F): 67°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval:

- 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
(from casing top as marked)
- 2) Depth to Water Surface (DTW) 46.34 ft  
(from casing top as marked)
- 3) Well Depth (WD): 66.42  
(from casing top as marked)
- 4) Height of Water Column (H) 20.08 ft  
(from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-17-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Was Well Pumped Dry? Y N

Fe<sup>2</sup> (mg/L): 0.4

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1059		Start Purge			Pump	depth = 62.5 ft			0.7	
1102	21.82	2413	6.95	17	-47.4	3.50	46.40	2.1	0.7	
1105	22.42	2405	6.93	15	-51.4	2.38	46.43	4.2	0.7	
1108	23.18	2421	6.87	14	-55.5	1.65	46.45	6.3	0.7	
1111	23.32	2465	6.79	12	-57.9	1.30	46.46	8.4	0.7	
1114	23.37	2482	6.77	8	-55.9	1.02	46.47	10.5	0.7	
1117	23.51	2501	6.78	8	-55.6	0.98	46.47	12.6	0.7	
1120	23.53	2517	6.80	6	-54.2	0.95	46.48	14.7	0.7	
		Purge complete			Sampled @	1125				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stack (Blaine Tech)

Sampling Date: 3-17-08

Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_

Sampling Method: 461MS

Weather: Sunny

Sampling Time: 1030

Ambient Temp. (F): 66°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  Q  N

Other: \_\_\_\_\_

Screened interval:

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft

(from casing top as marked)

2) Depth to Water Surface (DTW) 46.56 ft

(from casing top as marked)

3) Well Depth (WD): 86.57

(from casing top as marked)

4) Height of Water Column (H) 40.41 ft

(from casing top as marked)

Product Obs:	<input type="checkbox"/> Y	<input type="checkbox"/> N
Depth to Product:	_____	
Method of Measurement:	<input type="checkbox"/> Interface Probe	<input type="checkbox"/> Y <input type="checkbox"/> N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
CV = 3.14 [(D/2)/12 in.] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-17-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Was Well Pumped Dry?  Y  N

Fe<sup>2</sup> (mg/L): 2.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1007		Start	Purge	-	Pump	depth	~82.54		0.7	
1010	21.13	4906	7.33	20	-69.7	2.21	46.60	2.1	0.7	odor
1013	21.26	5047	6.99	15	-107.3	1.47	46.63	4.2	0.7	
1016	21.62	5055	6.98	15	-108.8	1.54	46.66	6.3	0.7	
1019	22.00	5058	6.99	15	-115.3	1.55	46.67	8.4	0.7	
1022	22.26	5064	6.98	15	-119.3	1.53	46.69	10.5	0.7	
1025	22.51	5072	6.98	15	-117.4	1.50	46.71	12.6	0.7	
-	Purge Complete			Sampled @		1030				

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum

Location No: \_\_\_\_\_

Job No: 18500147.03210

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stack Blaine Tech

Sampling Date: 3-17-08

Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_

Sampling Method: 2" Grundfos (100 ft) 54 Boston tubing

Weather: Sunny

Sampling Time: 0935

Ambient Temp. (F): 65°F

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder  N

Other: \_\_\_\_\_

Screened interval:

1) Well Casing Elevation (WCE) \_\_\_\_\_ ft

(from casing top as marked)

2) Depth to Water Surface (DTW) 46.26 ft

(from casing top as marked)

3) Well Depth (WD): 109.52

(from casing top as marked)

4) Height of Water Column (H) 63.26 ft

(from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	CV = (23.49) x [(D/24) <sup>2</sup> ]
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Method: 2" Grundfos submersible pump

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Purge Date: 3-17-08

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TC)

Was Well Pumped Dry? Y N

Fe<sup>2</sup> (mg/L): 3.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
0912	-	Start Purge		0.7	L pm	-	Pump ~ 105ft Deep			
0915	21.40	6316	6.87	13	-4.9	9.15	46.49	2.1	0.7	odor
0918	21.40	6424	6.91	11	-94.7	5.63	46.57	4.2	0.7	
0921	21.55	6421	6.93	11	-108.3	3.50	46.60	6.3	0.7	
0924	21.88	6428	6.94	11	-118.3	1.52	46.64	8.4	0.7	
0927	21.96	6436	6.95	11	-120.4	1.46	46.66	10.5	0.7	
0930	22.01	6439	6.95	11	-124.8	1.38	46.68	12.6	0.7	
-		Purge Complete		Sampled @			0935			

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

### Monitor Well Sampling Data

Project: Cooper Drum  
 Location No: MW-4 Job No: 18500147.03210  
 Sample No(s): \_\_\_\_\_ Sampler(s): \_\_\_\_\_  
 Sampling Date: 3/17/08 Reviewer(s): \_\_\_\_\_ Date: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Sampling Time: 1410 Ambient Temp. (F): \_\_\_\_\_

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounder Y N  
 Other: \_\_\_\_\_  
 Screened interval:  
 1) Well Casing Elevation (WCE) \_\_\_\_\_ ft  
 (from casing top as marked)  
 2) Depth to Water Surface (DTW) 48.01 ft  
 (from casing top as marked) 97.83  
 3) Well Depth (WD): \_\_\_\_\_ ft  
 (from casing top as marked) 49.82  
 4) Height of Water Column (H) \_\_\_\_\_ ft  
 (from casing top as marked)

Product Obs: Y N  
 Depth to Product: \_\_\_\_\_  
 Method of Measurement: Interface Probe Y N  
 Other: \_\_\_\_\_

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
CV = 3.14 [(D/2)/12 in.ft] <sup>2</sup> h (7.48 gal/cu. Ft.)	

**WELL PURGE AND SAMPLING DATA**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TC)

Purge Method: 2" Grundfos submersible pump  
 Purge Date: 3/17/08  
 Was Well Pumped Dry? Y N  
 Fe<sup>2</sup> (mg/L): 3-2

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1344	21.97	8870	7.00	169	-259.2	0.45	48.09	3	1000	
1347	22.39	8915	7.00	127	-272.6	0.44	48.09	6	"	
1350	22.57	8894	6.99	83	-265.4	0.48	48.09	9	"	
1353	22.71	8821	6.99	45	-272.6	0.48	48.09	12	"	
1356	22.78	8676	6.99	37	-273.4	0.44	48.09	15	"	
1359	22.78	8600	7.00	23	-280.6	0.40	48.09	18	"	
1402	22.78	8578	7.00	14	-283.5	0.39	48.09	21	"	
1405	22.85	8561	7.00	13	-289.4	0.36	48.09	24	"	
1408	22.83	8554	7.00	7	-289.9	0.34	48.09	27	"	

**INSTRUCTIONS AND COMMENTS**  
 Pumping @ ~ 92'

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be re

# Monitor Well Sampling Data

MONITOR WELL NO: EW-1  
EXTRACTION

Project: \_\_\_\_\_  
 Location No: \_\_\_\_\_  
 Sample No(s): \_\_\_\_\_  
 Sampling Date: 3-19-08  
 Sampling Method: tubing  
 Sampling Time: 1120

Job No: \_\_\_\_\_  
 Sampler(s): Alex Stack (Blaine Tech)  
 Reviewer(s): \_\_\_\_\_ Date: 3-19-08  
 Weather: Sunny  
 Ambient Temp. (F): 72

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounding  N  
 Other: \_\_\_\_\_

- 1) Well Casing Elevation (WCE) \_\_\_\_\_  
 (from casing top as marked) 46.37
- 2) Depth to Water Surface (DTW) \_\_\_\_\_  
 (from casing top as marked) 89.64
- 3) Well Depth (WD) \_\_\_\_\_  
 (from casing top as marked)
- 4) Height of Water Column (H) 41.27  
 (from casing top as marked)

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y
Other:	_____	

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
$CV = 3.14 [(D/2)/12 \text{ in. ft.}]^2 \times (7.48 \text{ gal/cu. Ft.})$	

**WELL PURGE AND SAMPLING DAT**

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
 (CV x H = VW)  
 Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals  
 Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
 (VW x NC = TV)

Purge Method: \_\_\_\_\_  
 Purge Date: 3-19-08  
 Was Well Pumped Dry? Y  N  
 Fe<sup>2</sup> (mg/L): 2.8

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1050	-	Start	Purge			Pump	depth	~85ft		
1053	20.96	4714	7.04	12	-101.4	3.04	48.72	2.1	0.7	
1056	21.47	4686	7.05	8	-106.0	0.55	48.73	4.2	0.7	
1059	21.87	4696	7.06	7	-108.3	0.41	48.73	6.3	0.7	
1102	21.90	4699	7.06	7	-108.8	0.38	48.73	8.4	0.7	
1105	21.98	4698	7.06	6	-108.3	0.34	48.73	10.5	0.7	
1108	22.15	4701	7.06	6	-109.4	0.30	48.73	12.6	0.7	
1111	22.16	4700	7.07	6	-110.3	0.28	48.73	14.7	0.7	
-	Purge Complete					Sampled @		1120		

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

# Monitor Well Sampling Data

EXTRACTION

Project: \_\_\_\_\_

Location No: \_\_\_\_\_

Job No: \_\_\_\_\_

Sample No(s): \_\_\_\_\_

Sampler(s): Alex Stock (Blaine Tech)

Sampling Date: 3-19-08

Reviewer(s): \_\_\_\_\_ Date: 3-19-08

Sampling Method: tubing

Weather: Sunny

Sampling Time: 1215

Ambient Temp. (F): 72°

**WATER ELEVATION DATA**

Method of Measurement: Depth Sounding  N

Other: \_\_\_\_\_

Product Obs:	Y	N
Depth to Product:	_____	
Method of Measurement:	Interface Probe	Y N
Other:	_____	

1) Well Casing Elevation (WCE) \_\_\_\_\_

(from casing top as marked) 48.33

2) Depth to Water Surface (DTW) \_\_\_\_\_

(from casing top as marked) 82.47

3) Well Depth (WD) \_\_\_\_\_

(from casing top as marked) 34.14

4) Height of Water Column (H) \_\_\_\_\_

(from casing top as marked)

Well Diameter (in)	Casing Volume (CV)/ft (gals)
2	0.163
4	0.652
6	1.468
D	$CV = (23.49) \times [(D/24)^2]$
$CV = 3.14 [(D/2)/12 \text{ in. ft}]^2 \times (7.48 \text{ gal/cu. Ft.})$	

**WELL PURGE AND SAMPLING DAT**

Purge Method: 2" Gravel

Single Casing Volume of Water in Well (VW) \_\_\_\_\_ gals  
(CV x H = VW)

Purge Date: \_\_\_\_\_

Number of Casing Volumes to Purge (NC) \_\_\_\_\_ gals

Was Well Pumped Dry? Y  N

Total Volume of Water to Purge (TV) \_\_\_\_\_ gals  
(VW x NC = TV)

Fe<sup>2</sup> (mg/L): 0.0

Time	Temp (C)	Cond (umhos)	pH	Turbidity (NTU)	ORP (mV)	D.O. (mg/L)	Water Level (ft. bgs)	Removed (L)	Flow Rate (L/min)	Observations Phys. App.
1148		Start	Purge							
1151	21.20	4663	7.21	7	-249.4	2.91	48.66	2.11	0.7	
1154	21.34	4677	7.16	5	-245.5	0.51	48.66	4.2	0.7	
1157	21.36	4680	7.15	5	-255.2	0.37	48.66	6.3	0.7	
1200	21.77	4682	7.14	5	-248.9	0.22	48.66	8.4	0.7	
1203	22.00	4682	7.14	5	-250.1	0.20	48.66	10.5	0.7	
1206	22.09	4688	7.14	4	-251.3	0.19	48.66	12.6	0.7	
1209	22.10	4680	7.15	4	-253.1	0.17	48.66	14.7	0.7	
1212	22.02	4679	7.15	4	-252.8	0.16	48.66	16.8	0.7	
—		Sample @	1215							

**INSTRUCTIONS AND COMMENTS**

Purging/Sampling Remarks \_\_\_\_\_

Note: A complete list of containers and analyses used can be found in the associated sample log. The final row of readings should list the time sampling was completed and an estimate of the total volume of water removed. Water measurements should be recorded at each well casing volume. In the observations field, not which reading applies to the values recorded at sampling

URS CORPORATION

HYDRODATA SHEET

Project Cooper Draw

Event April 14, 2008

Sampler DA

Project No. \_\_\_\_\_

Datum TOC <sup>water</sup> <sub>leads</sub>

Sheet 1 of 2

WELL or LOCATION	DATE	TIME	MEASUREMENT	TOTAL DEPTH	COMMENTS
MW-38	4/14/08	0920	46.37		
MW-39			46.47		
MW-40			46.42		
MW-36			46.86		
MW-37			47.00		
MW-24			47.61		
MW-26		0952	52.18		Bolts
MW-25			<del>47.50</del>		Bolts
MW-25B			47.43		Bolts
MW-32			51.71		
MW-31			47.14		
MW-31B			47.40		
MW-31A			46.70		
MW-29			47.08		
MW-30			47.70		
MW-29A			46.80		
MW-28			47.78		
MW-27			47.53		
MW-35			47.53		
MW-34		1120	46.97		
MW-41			48.08		
MW-22			48.57		
MW-23			48.81		
MW-3			46.52		

