GALATI | BLEK LLP

455 Capitol Mall Suite 350
Sacramento CA 95814
Tel· 916.441.6575
Fax· 916.441.6553

DOCKET
09-AFC-8
DATE DEC 23 2009
RECD. DEC 23 2009

December 23, 2009

California Energy Commission
Docket Unit
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **LOW RESOULTION SCAN OF THE BOREHOLE LOGS FOR OBS-1, OBS-2, TW-1, AND TW-2 FOR GENESIS SOLAR ENERGY PROJECT**
DOCKET NO. (09-AFC-8)

Enclosed for filing with the California Energy Commission is the original of **LOW RESOULTION SCAN OF THE BOREHOLE LOGS FOR OBS-1, OBS-2, TW-1, AND TW-2 FOR GENESIS SOLAR ENERGY PROJECT,** for the Genesis Solar Energy Project Docket No. (09-AFC-8).

Sincerely,

Ashley Y Garner

Ashley Y Garner

WorleyParsons
resources & energy

Lithologic Log of OBS-01

Genesis Solar, LLC
Project Number: 52004617

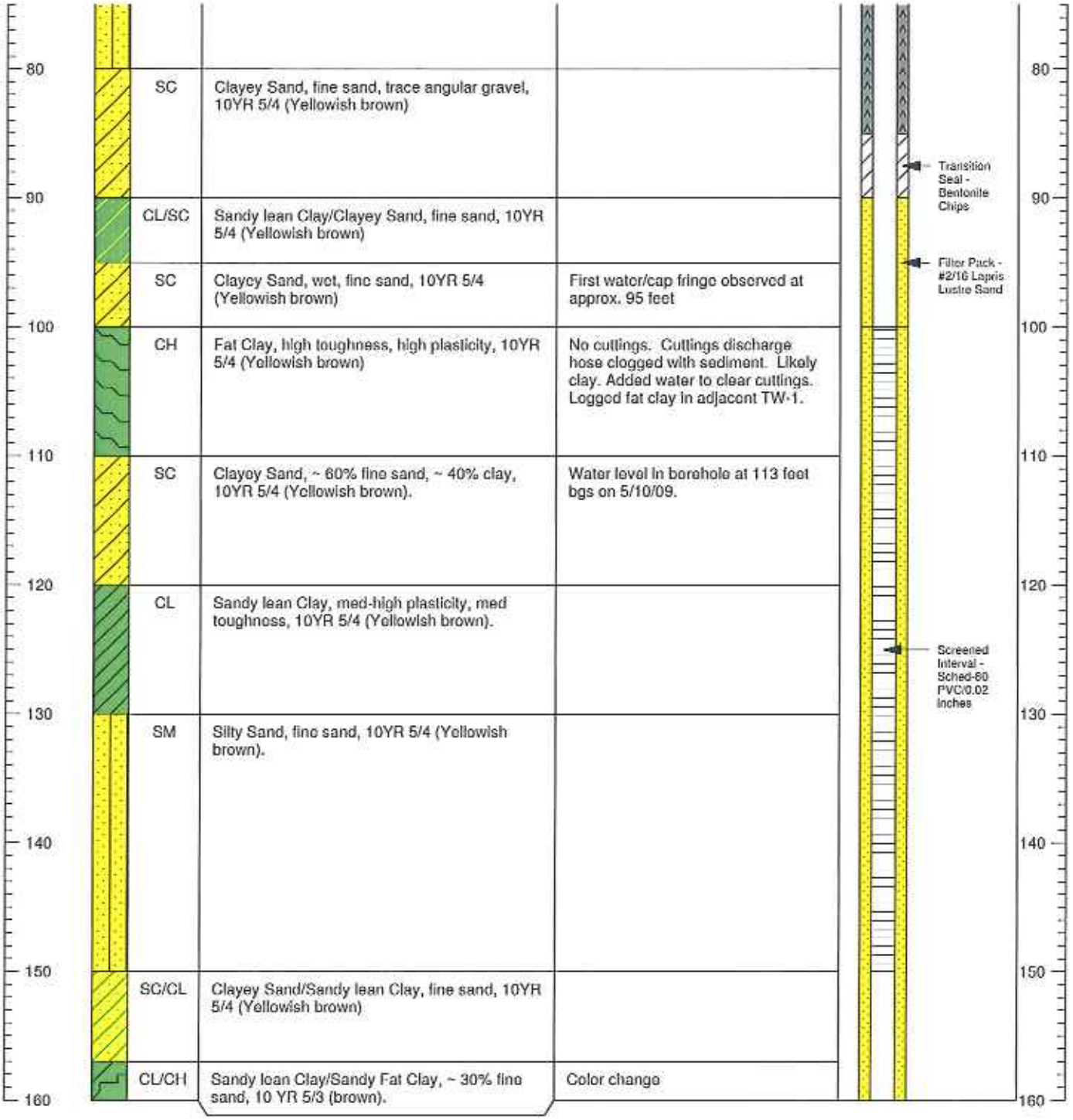
Date Drilled: 05/08/2009 to 05/09/2009		Borehole Location: N33°40' 24.91" W115°03'5.85"	
Drilling Method: Air Rotary, 10" Diameter		Ground Surface Elevation: 383 feet amsl	
Drilling Contractor: WDC Exploration		Static Water Level: 76.77 feet amsl	
Geologist: Ryan Farrel	Reviewer: Nat Beal	Total Depth: 160 ft	Well Depth:
Notes:			

Depth - Feet	Graphic Log	USCS Soil Type	Geologic Description	Remarks	Well Schematic
0–10		SM	Silty Sand, well graded, dry	Collected off top of spoils could be biased to finer grains.	
10–20		SC	Claycy Sand, ~ 40% clay, ~ 60% fine - coarse sand, trace fine subangular gravel, 10YR 5/4 (Yellowish brown)		Neat Cement
20–30		SM	Silty fine sand, trace subangular fine gravel, slightly moist, 10YR 5/4 (Yellowish brown).		
30–40		CL	Sandy lean Clay, fine sand, high dry strength, medium plasticity, medium toughness, 10YR 5/4 (Yellowish brown).	Driller says he feels clay at 35 feet.	
40–50		SP	Poorly graded fine Sand with silt, approximately 20% silt, dry, 10YR 5/4 (Yellowish brown).	Driller says back into sand at 40 feet.	Well Casing - Sched 80 PVC, 5"
50–60		SC	Clayey Sand, moist, 10YR 5/4 (Yellowish brown).		Grout
60–70		SM	Silty Sand, fine sand, low plasticity, low toughness, slightly moist, 10YR 5/4 (Yellowish brown).		

WorleyParsons
resources & energy

Lithologic Log of OBS-1

Genesis Solar, LLC
Project Number: 52004617



80	SC	Clayey Sand, fine sand, trace angular gravel, 10YR 5/4 (Yellowish brown)	
90	CL/SC	Sandy lean Clay/Clayey Sand, fine sand, 10YR 5/4 (Yellowish brown)	
	SC	Clayey Sand, wet, fine sand, 10YR 5/4 (Yellowish brown)	First water/cap fringe observed at approx. 95 feet
100	CH	Fat Clay, high toughness, high plasticity, 10YR 5/4 (Yellowish brown)	No cuttings. Cuttings discharge hose clogged with sediment. Likely clay. Added water to clear cuttings. Logged fat clay in adjacent TW-1.
110	SC	Clayey Sand, ~ 60% fine sand, ~ 40% clay, 10YR 5/4 (Yellowish brown).	Water level in borehole at 113 feet bgs on 5/10/09.
120	CL	Sandy lean Clay, med-high plasticity, med toughness, 10YR 5/4 (Yellowish brown).	
130	SM	Silty Sand, fine sand, 10YR 5/4 (Yellowish brown).	
140			
150	SC/CL	Clayey Sand/Sandy lean Clay, fine sand, 10YR 5/4 (Yellowish brown)	
160	CL/CH	Sandy lean Clay/Sandy Fat Clay, ~ 30% fine sand, 10 YR 5/3 (brown).	Color change

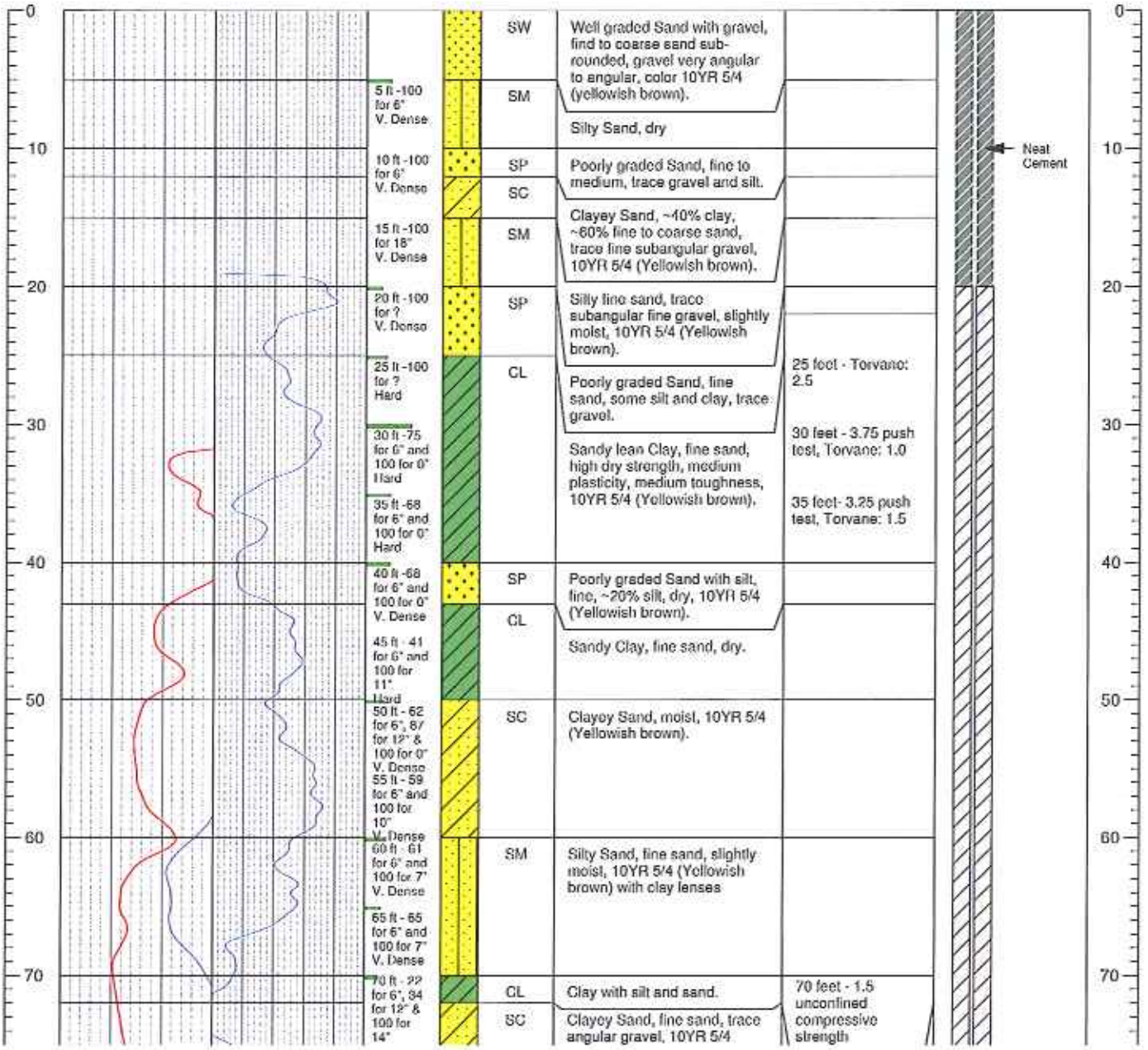
Lithologic Log of OBS-2 - 0 fbgs to 75 fbgs

Genesis Solar, LLC
Project Number: 52004617

WorleyParsons
resources & energy

Date Drilled: 05/28/2009 to 07/02/2009		Borehole Location: N33°40.419' W115°03.268	
Drilling Method: Mud Rotary, 10" Diameter		Ground Surface Elevation: 383 feet amsl	
Drilling Contractor: WDC Exploration		Static Water Level: N/A	
Geologist: Andie Gehlhausen	Reviewer: Nat Beal	Total Depth: 900 ft	Well Depth: 405 ft

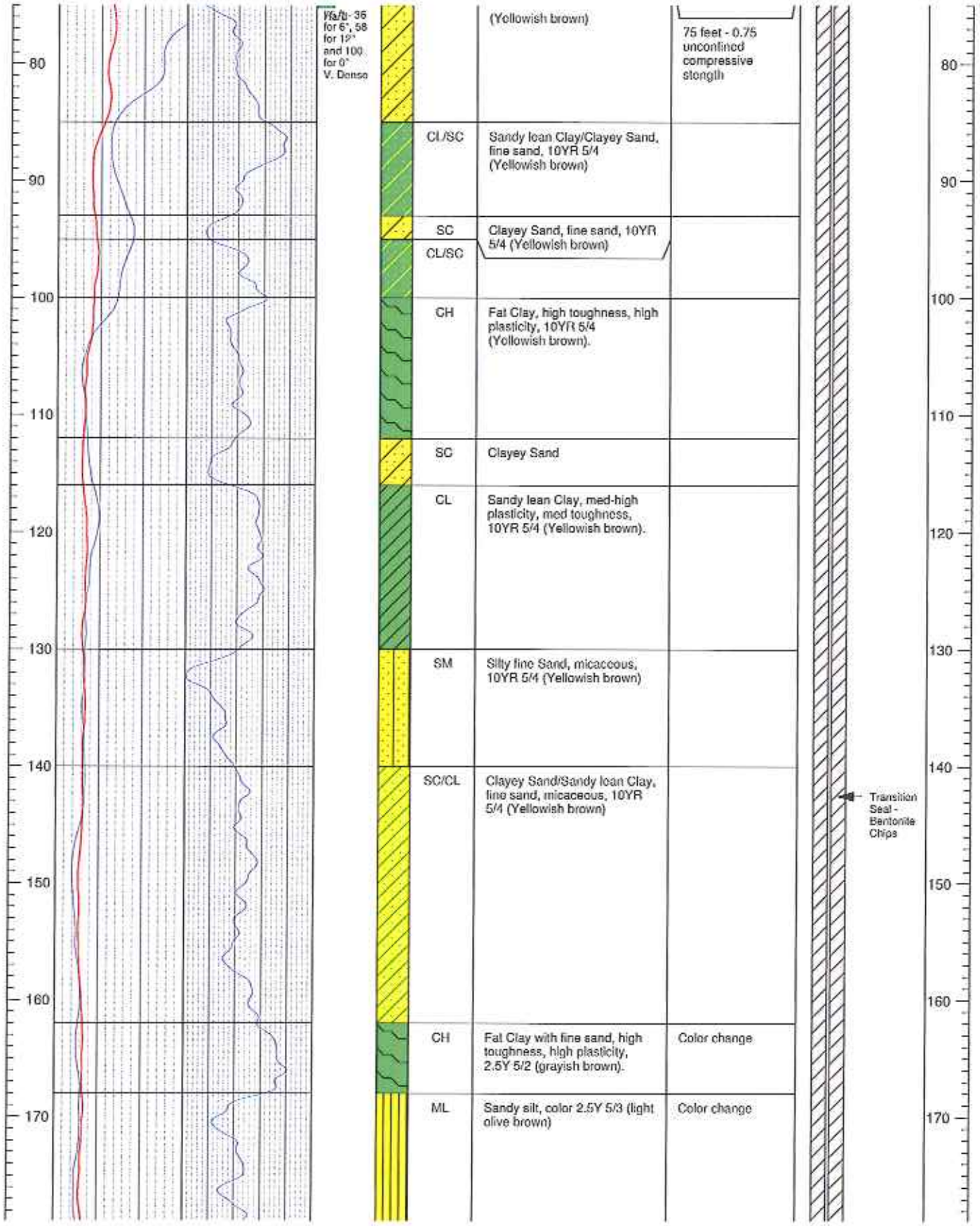
Notes:
1) Lithologic log was adjusted based on the cuttings log from OBS-1 and the geophysical logs
2) RSN and RLS have been corrected to 77 degrees F
3) Soil samples were collected using a Modified California Split Spoon Sampler and a standard 140-pound drive hammer



WorleyParsons
resources & energy

Lithologic Log of OBS-2

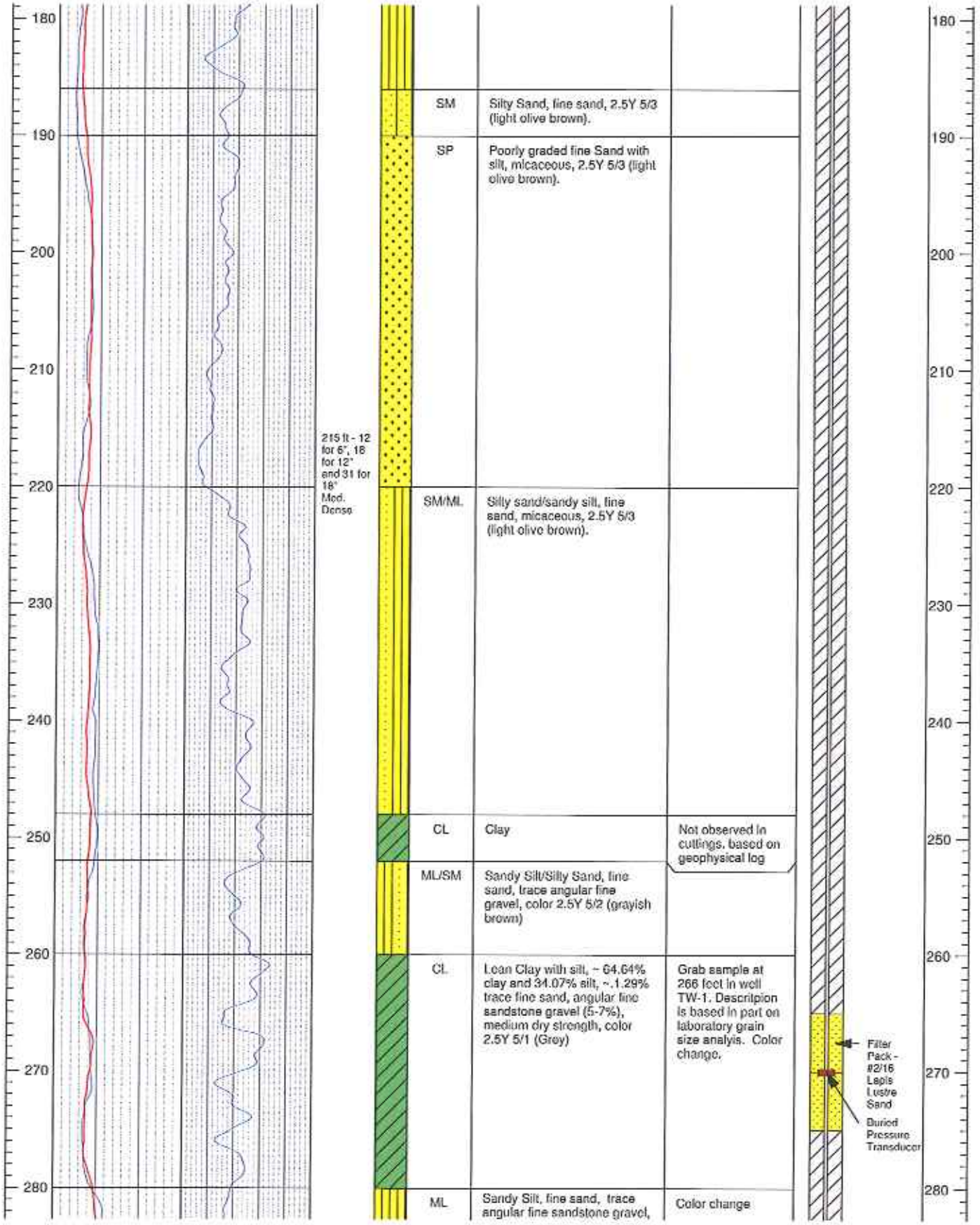
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Lithologic Log of OBS-2

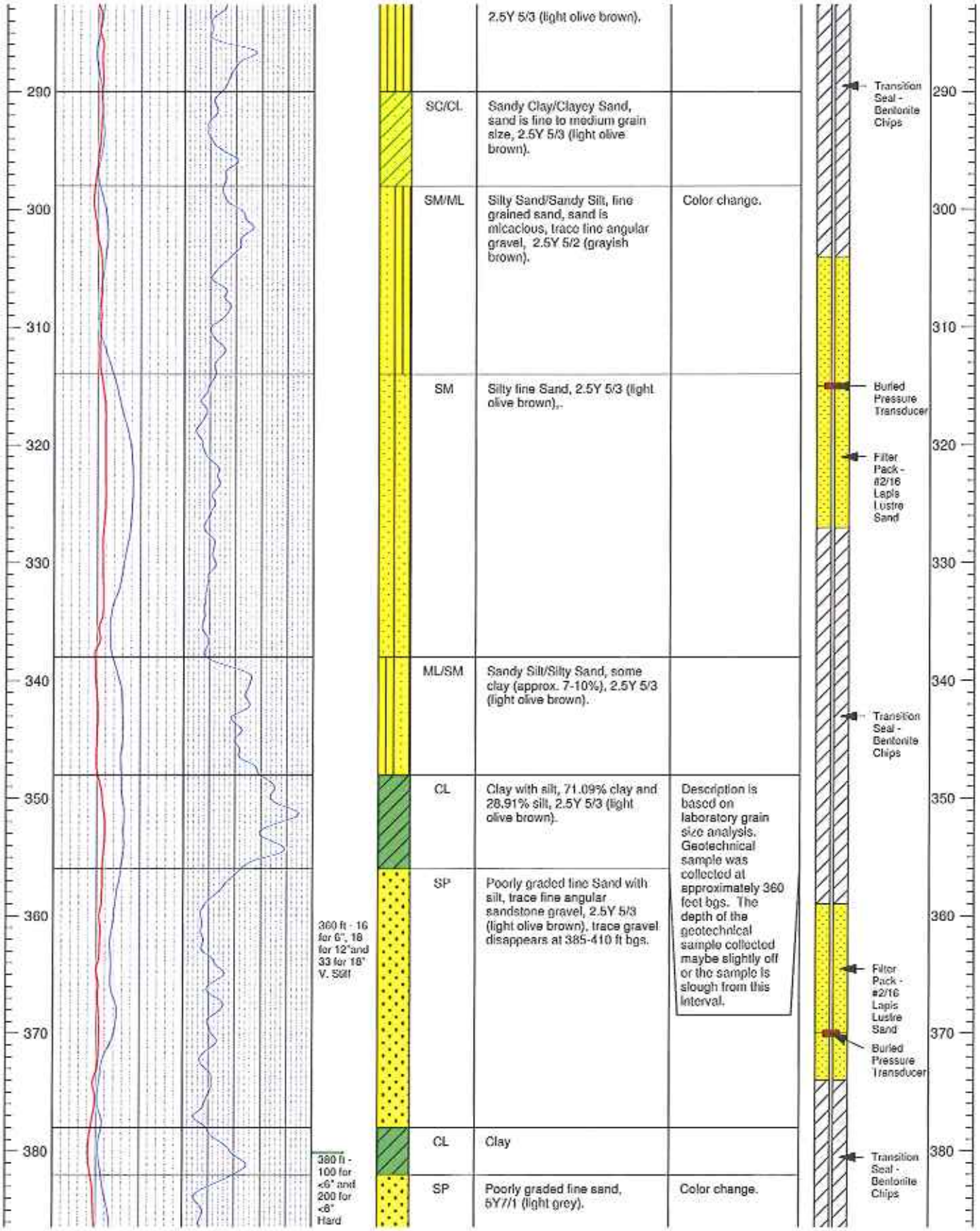
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Lithologic Log of OBS-2

Genesis Solar, LLC
Project Number: 52004617

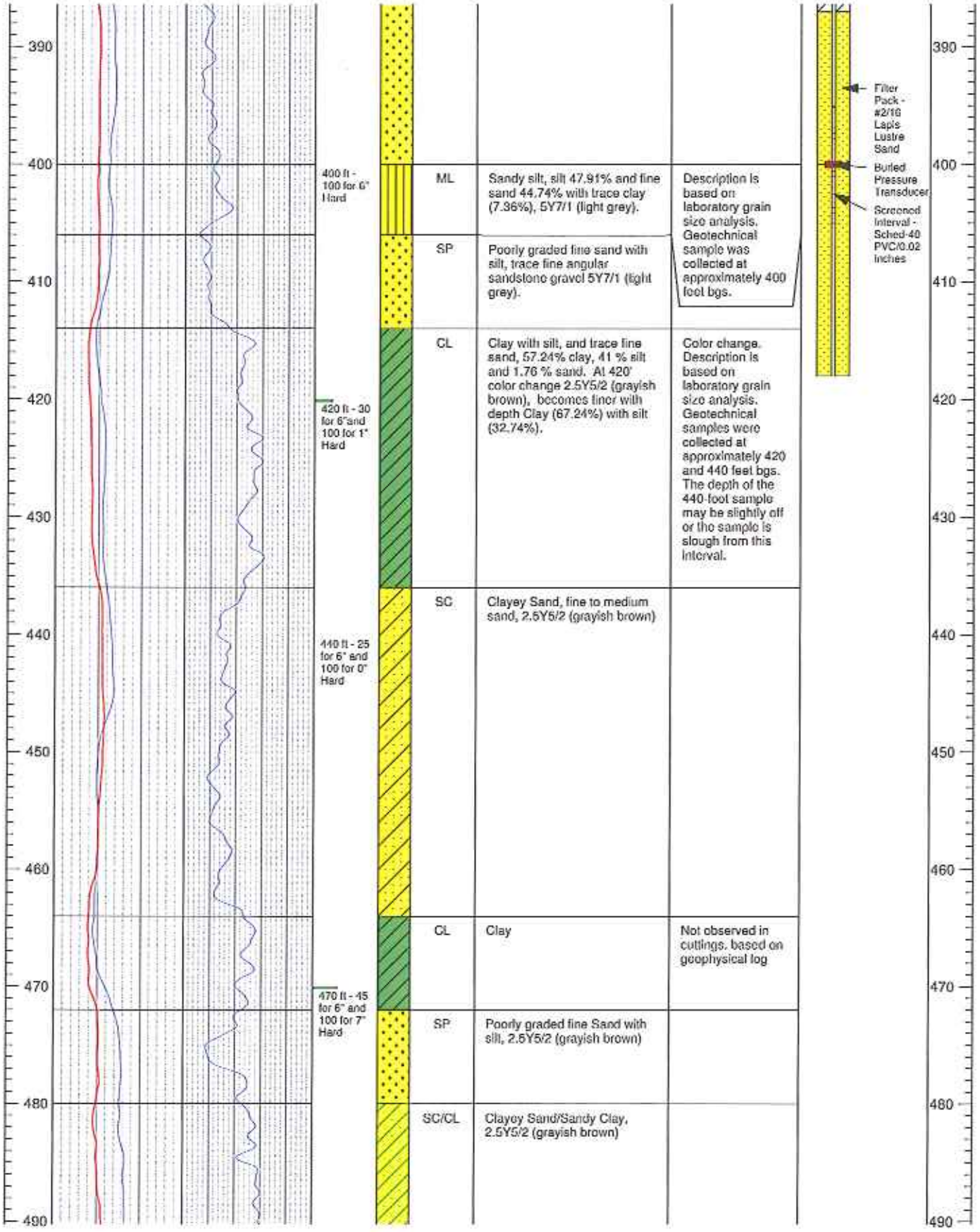


	2.5Y 5/3 (light olive brown).	
SC/CL	Sandy Clay/Clayey Sand, sand is fine to medium grain size, 2.5Y 5/3 (light olive brown).	
SM/ML	Silty Sand/Sandy Silt, fine grained sand, sand is micaceous, trace fine angular gravel, 2.5Y 5/2 (grayish brown).	Color change.
SM	Silty fine Sand, 2.5Y 5/3 (light olive brown),.	
ML/SM	Sandy Silt/Silty Sand, some clay (approx. 7-10%), 2.5Y 5/3 (light olive brown).	
CL	Clay with silt, 71.09% clay and 28.91% silt, 2.5Y 5/3 (light olive brown).	Description is based on laboratory grain size analysis. Geotechnical sample was collected at approximately 360 feet bgs. The depth of the geotechnical sample collected maybe slightly off or the sample is slough from this interval.
SP	Poorly graded fine Sand with silt, trace fine angular sandstone gravel, 2.5Y 5/3 (light olive brown), trace gravel disappears at 385-410 ft bgs.	
CL	Clay	
SP	Poorly graded fine sand, 5Y7/1 (light grey).	Color change.

WorleyParsons
resources & energy

Lithologic Log of OBS-2

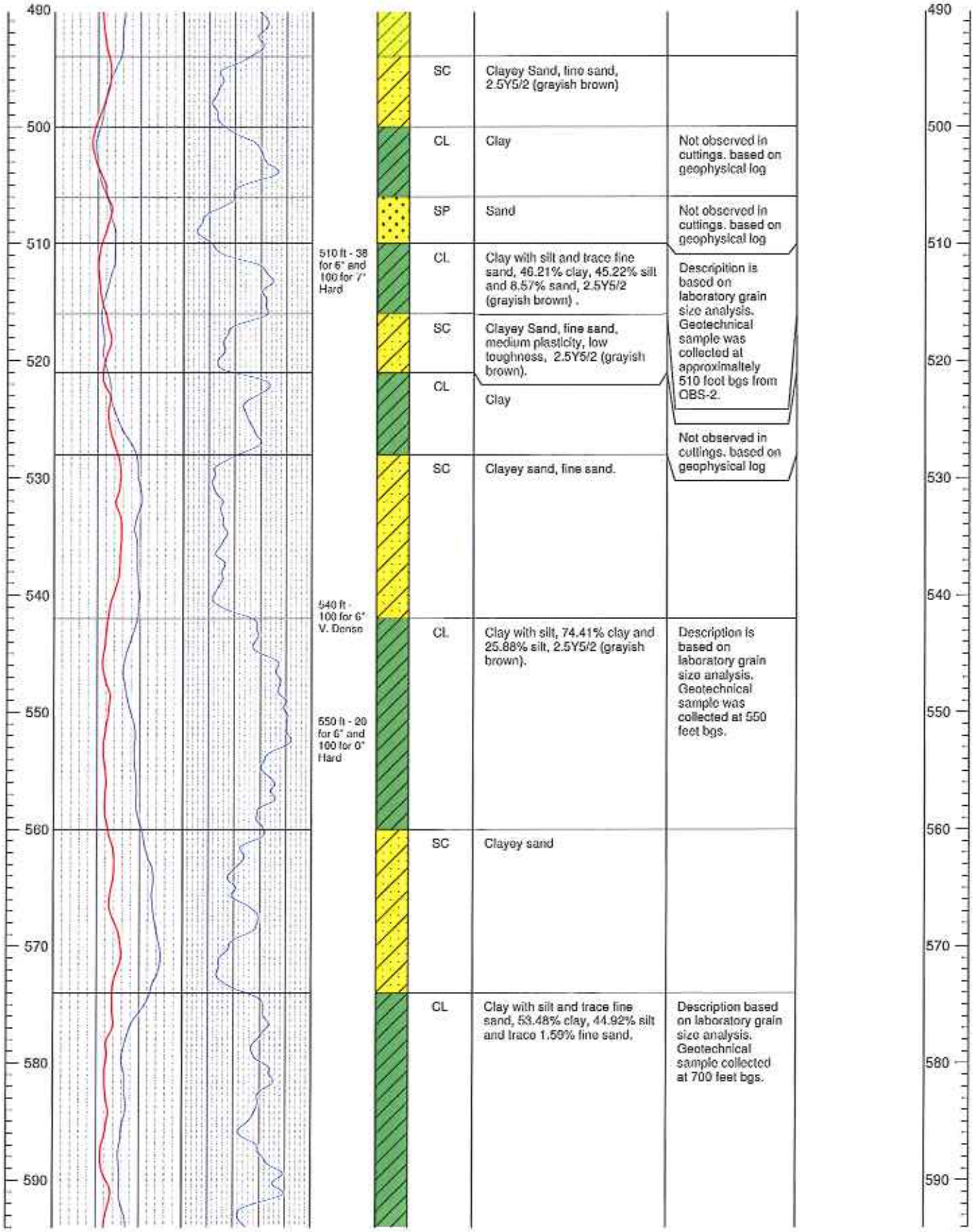
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Lithologic Log of OBS-2

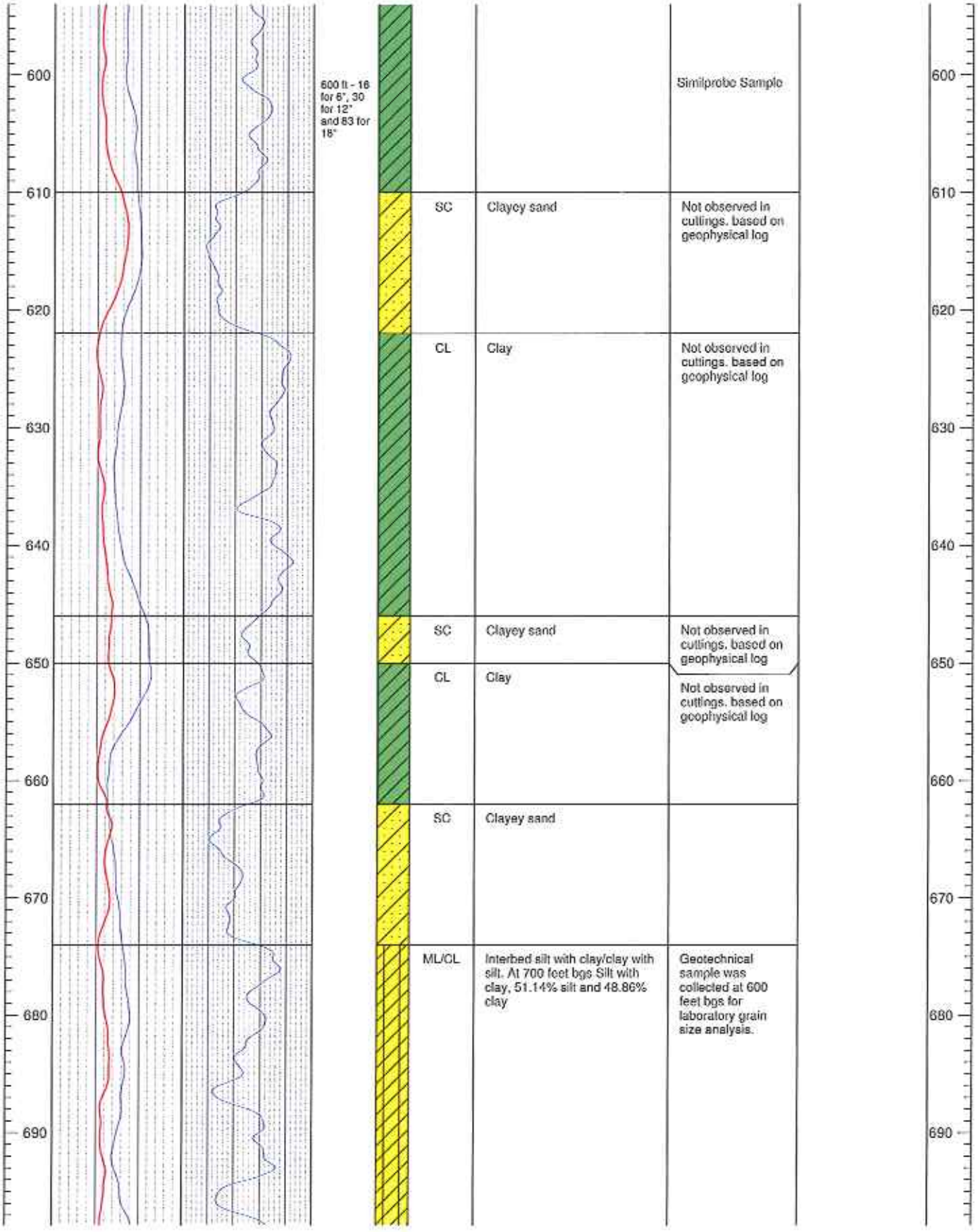
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Lithologic Log of OBS-2

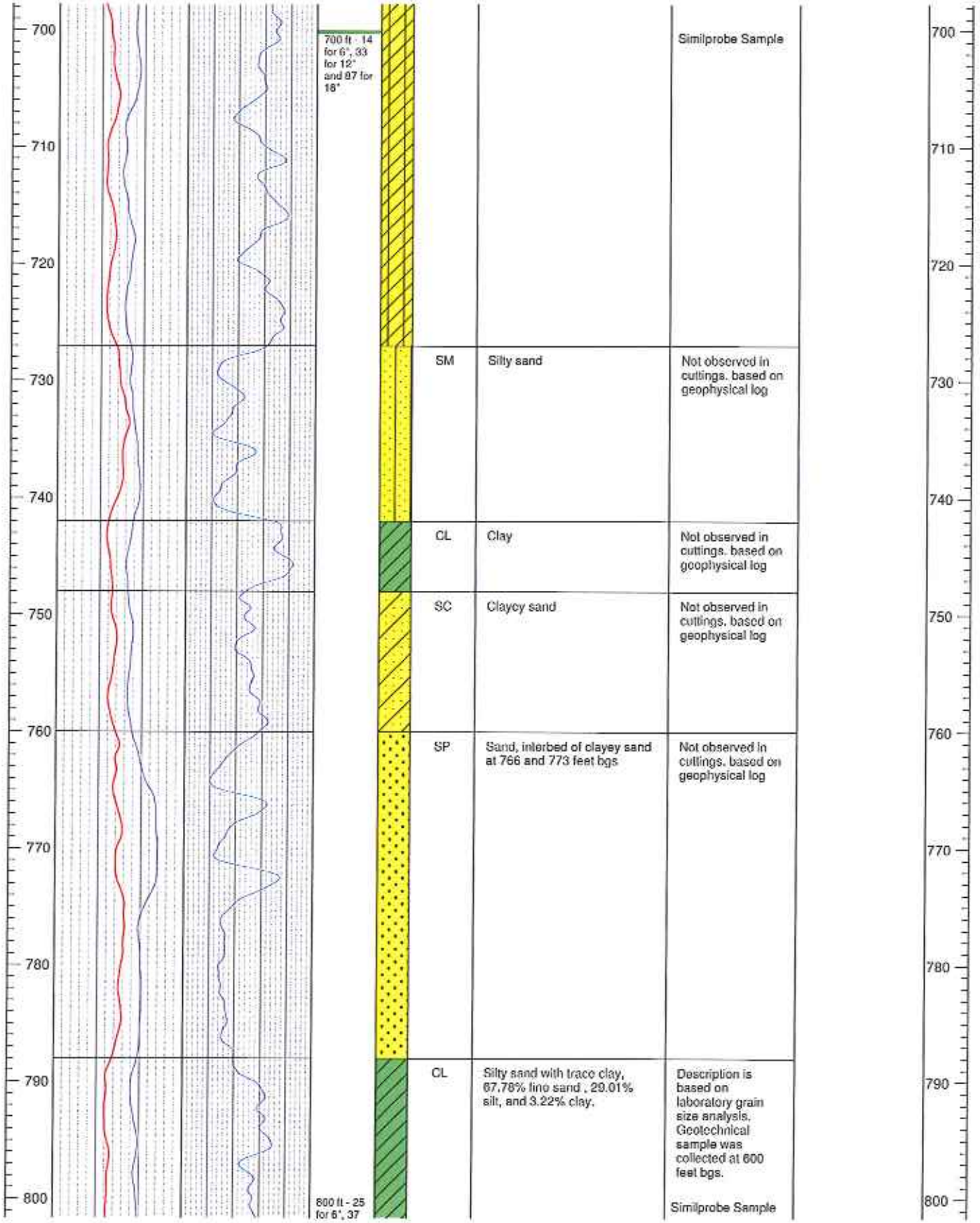
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Lithologic Log of OBS-2

Genesis Solar, LLC
Project Number: 52004617



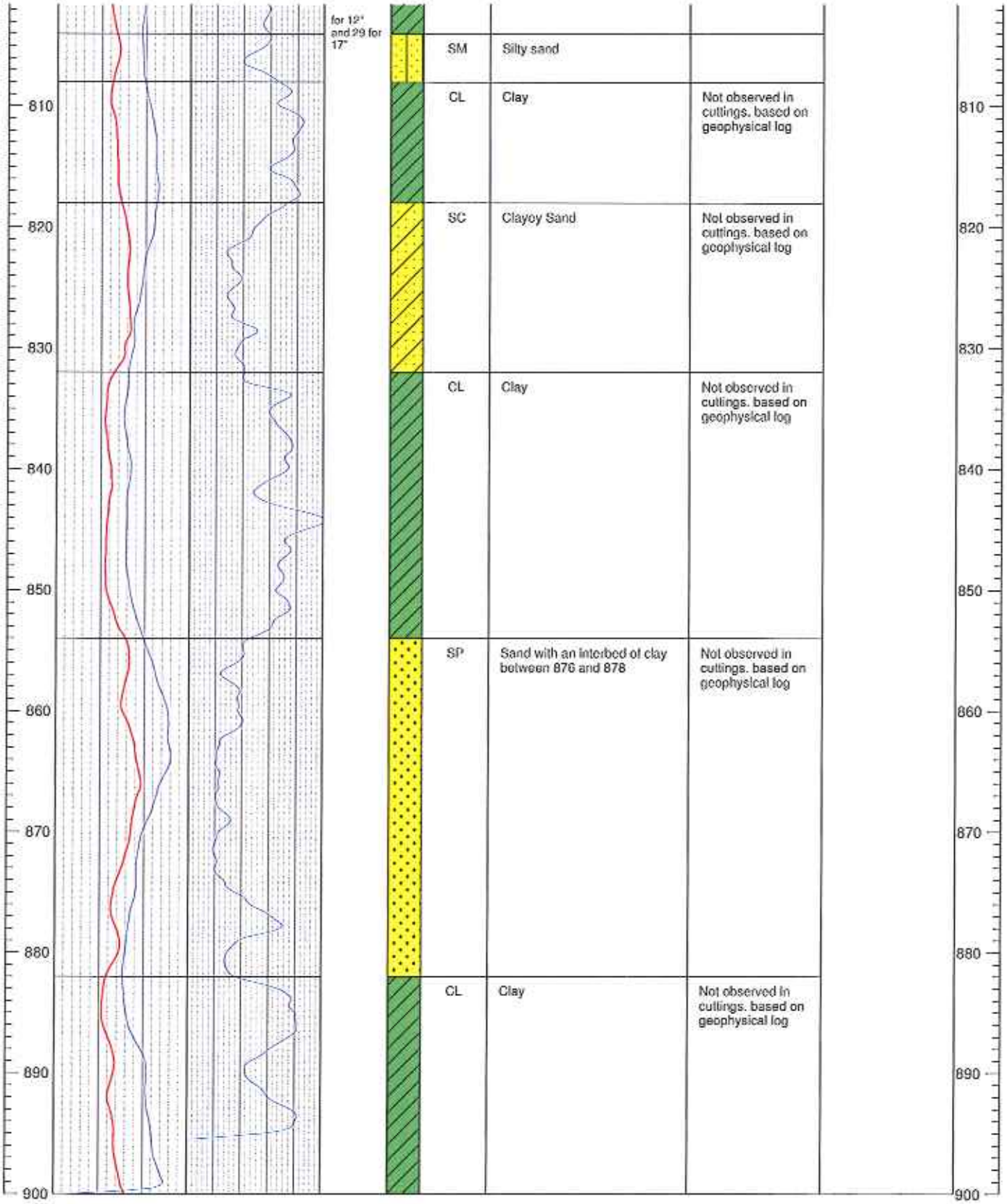
		Similprobe Sample
SM	Silty sand	Not observed in cuttings. based on geophysical log
CL	Clay	Not observed in cuttings. based on geophysical log
SC	Claycy sand	Not observed in cuttings. based on geophysical log
SP	Sand, interbed of clayey sand at 766 and 773 feet bgs	Not observed in cuttings. based on geophysical log
CL	Silty sand with trace clay, 67.78% fino sand , 29.01% silt, and 3.22% clay.	Description is based on laboratory grain size analysis. Geotechnical sample was collected at 600 feet bgs. Similprobe Sample

700
710
720
730
740
750
760
770
780
790
800

WorleyParsons
resources & energy

Lithologic Log of OBS-2

Genesis Solar, LLC
Project Number: 52004617



SM	Silty sand	
CL	Clay	Not observed in cuttings. based on geophysical log
SC	Clayey Sand	Not observed in cuttings. based on geophysical log
CL	Clay	Not observed in cuttings. based on geophysical log
SP	Sand with an interbed of clay between 876 and 878	Not observed in cuttings. based on geophysical log
CL	Clay	Not observed in cuttings. based on geophysical log

WorleyParsons
resources & energy

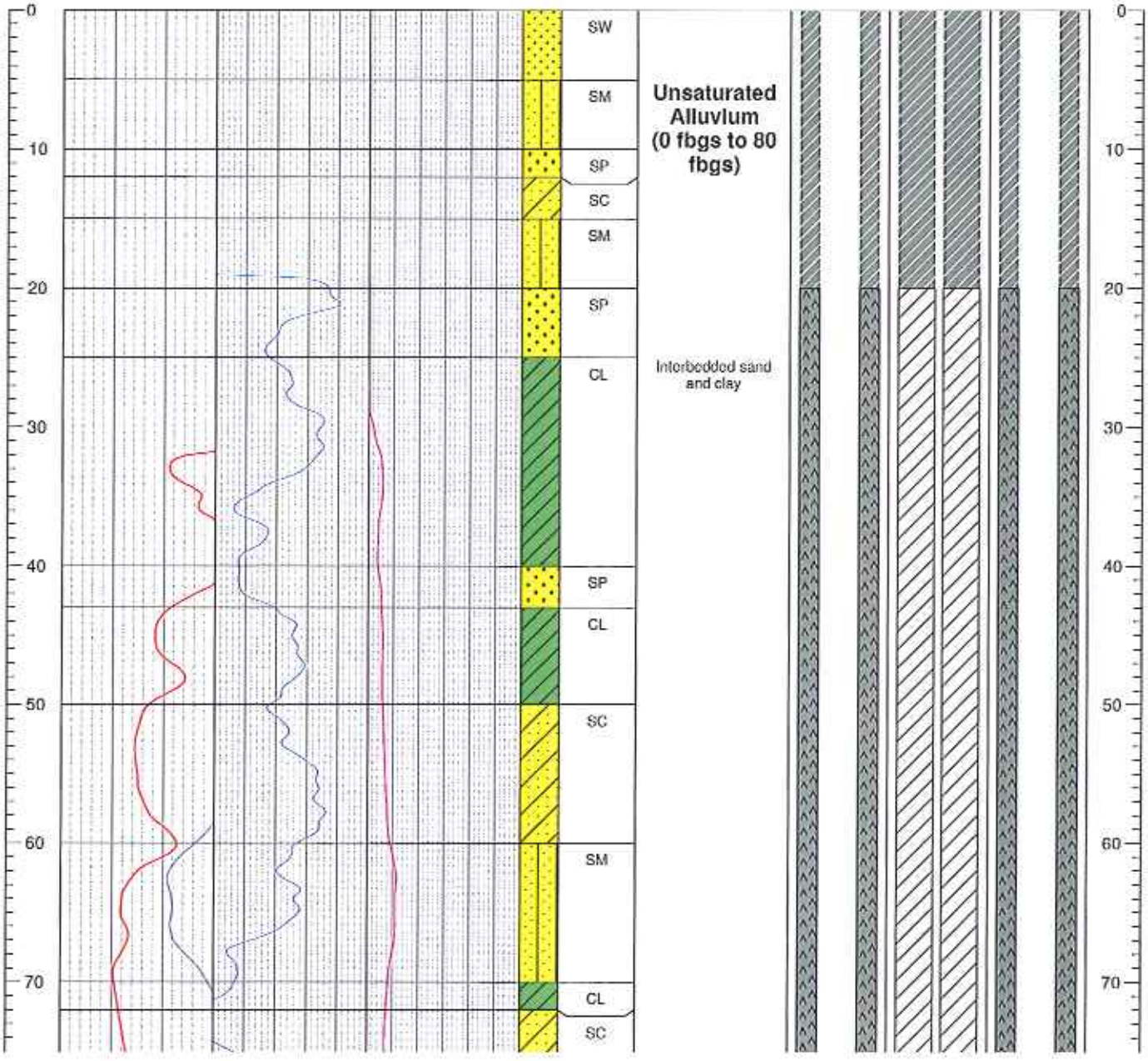
Calculated TDS for OBS-2

Genesis Solar, LLC
Project Number: 52004617

Date Drilled: 05/28/2009 to 07/02/2009		Borehole Location: N33°40.419' W115°03.268	
Drilling Method: Mud Rotary, 10" Diameter		Ground Surface Elevation: 383 feet amsl	
Drilling Contractor: WDC Exploration		First Groundwater: 80 feet bgs	
Geologist: Andie Gehlhausen	Reviewer: Nat Beal	Total Depth: 900 ft	Well Depth: 405 ft

Notes: 1) The upper 160 ft was adjusted based on the cuttings log from OBS-1 and the geophysical logs
2) From 160 ft to 550 ft the log was adjusted based on the cuttings logs and geophysical logs for this well and TW-1.
3) From 550 ft to 900 ft the log was adjusted based on the borehole geophysical logs for this well.
4) RSN and RLS have been corrected to 77 degrees F
5) TDS calculated from the formation water salinity determined from the Formation Factor (12 for 0 to 550 fbgs, and 8.5 for 550 to 800 fbgs)

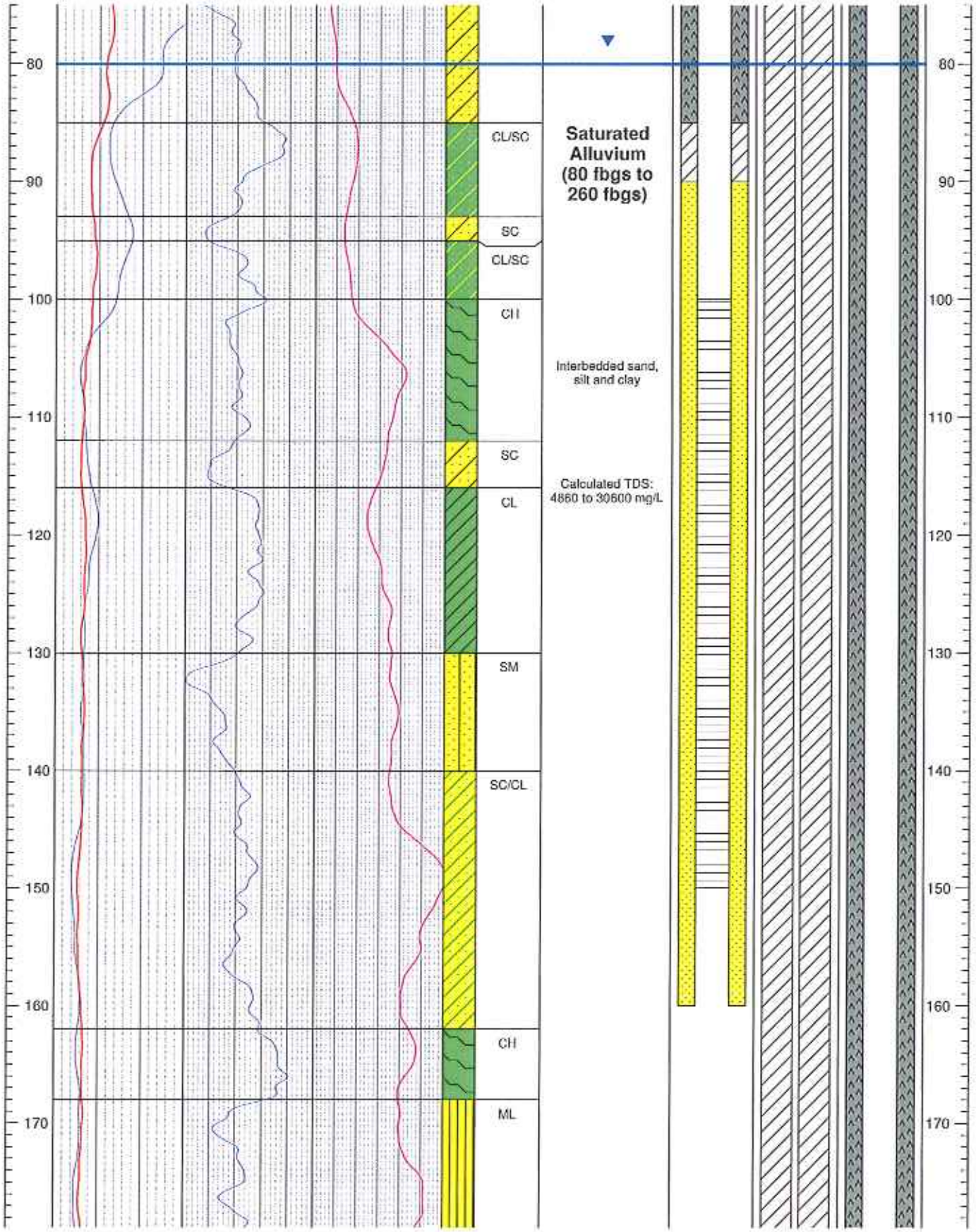
Well Completion Legend: Neat Cement, Filter Pack, Grout, Buried Pressure Transducer, Transition Seal, Screen



WorleyParsons
resources & energy

Calculated TDS for OBS-2

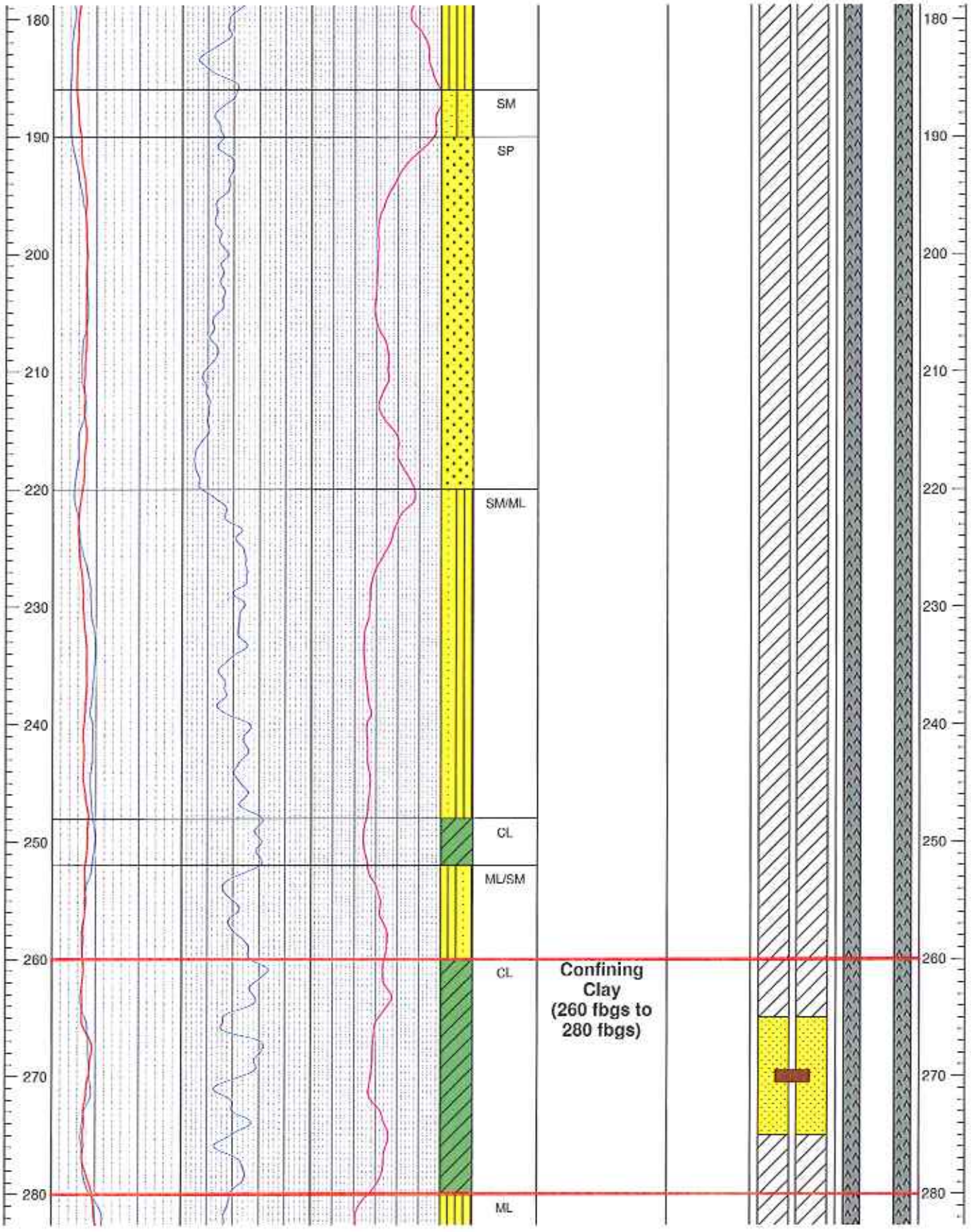
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Calculated TDS for OBS-2

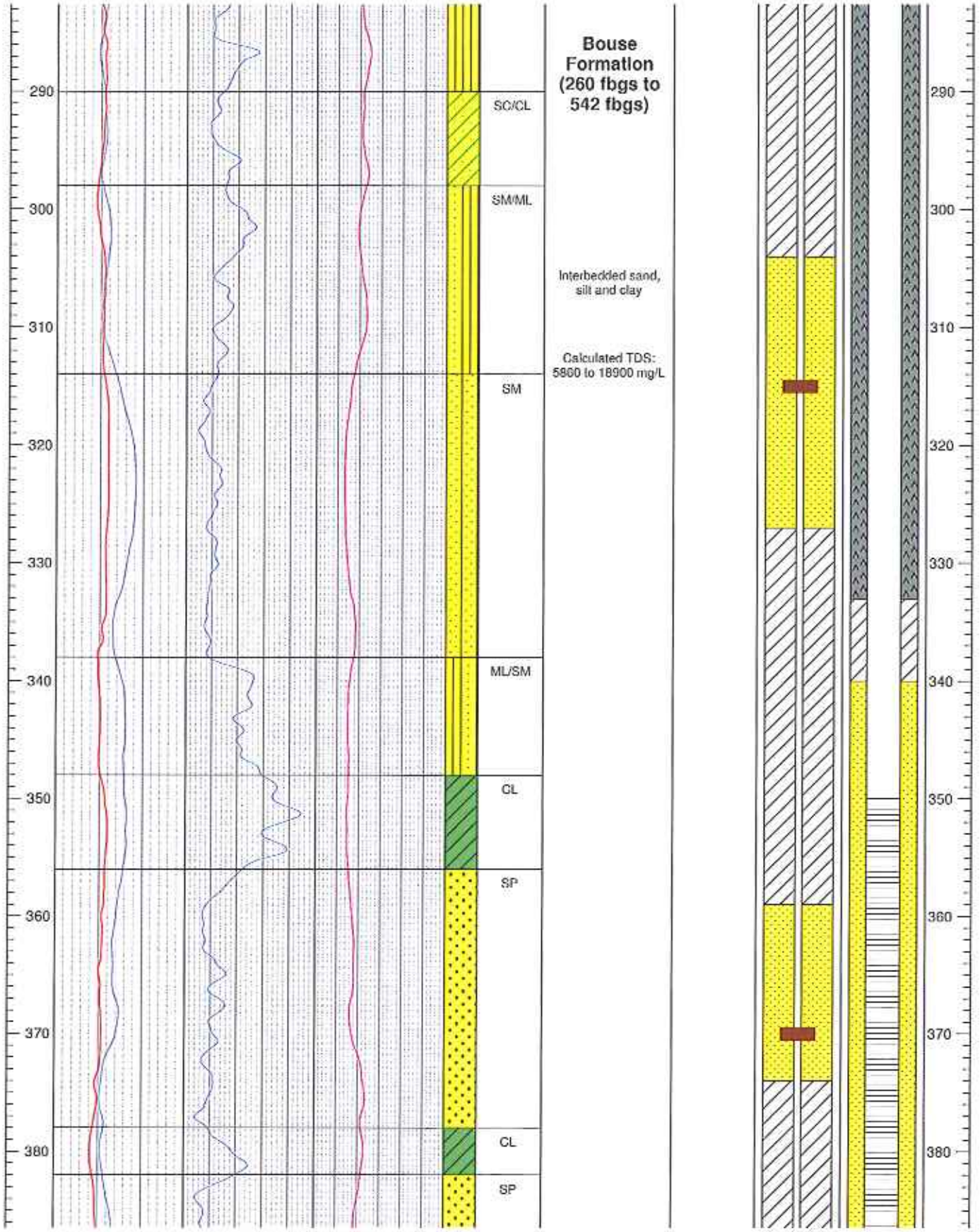
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Calculated TDS for OBS-2

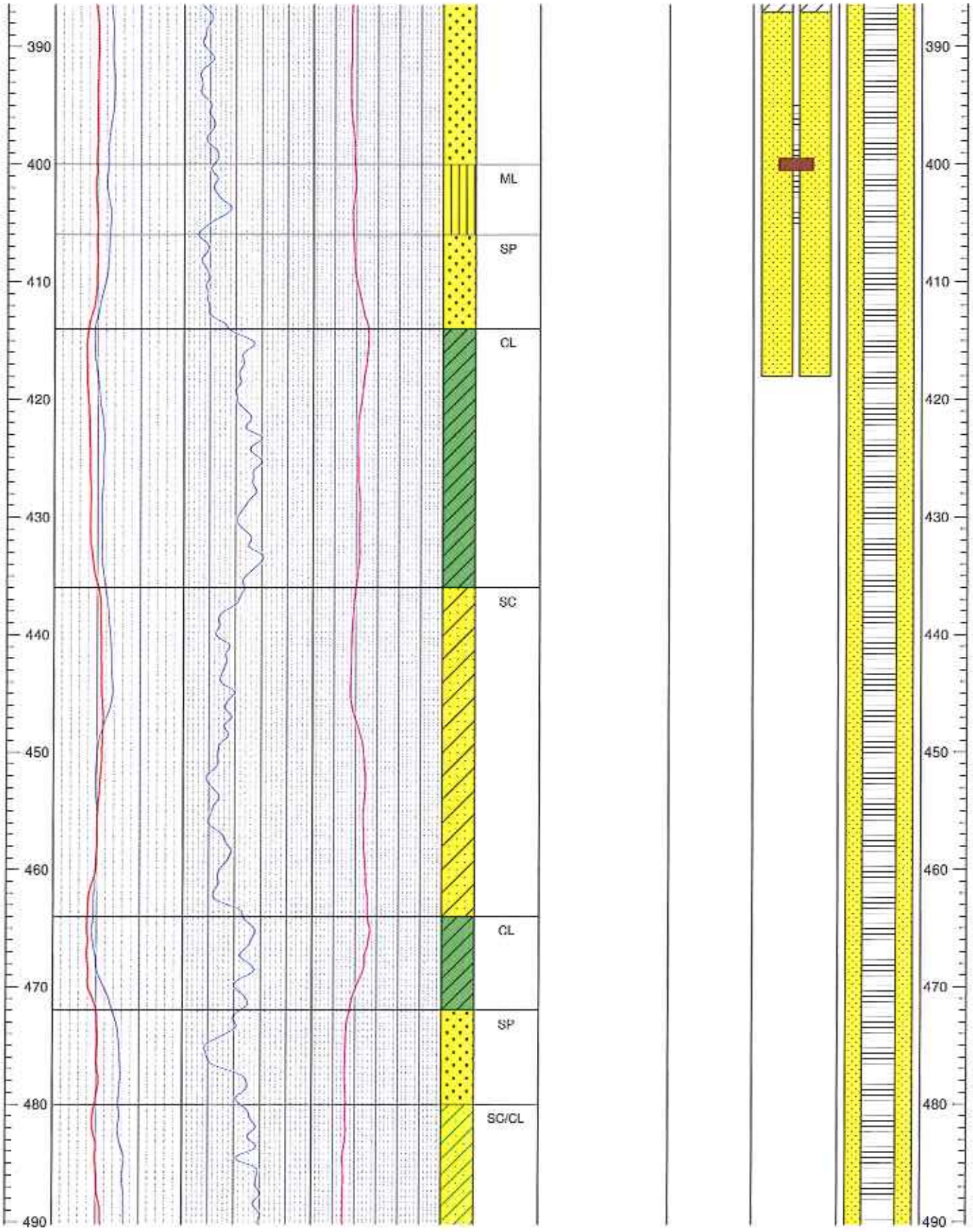
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Calculated TDS for OBS-2

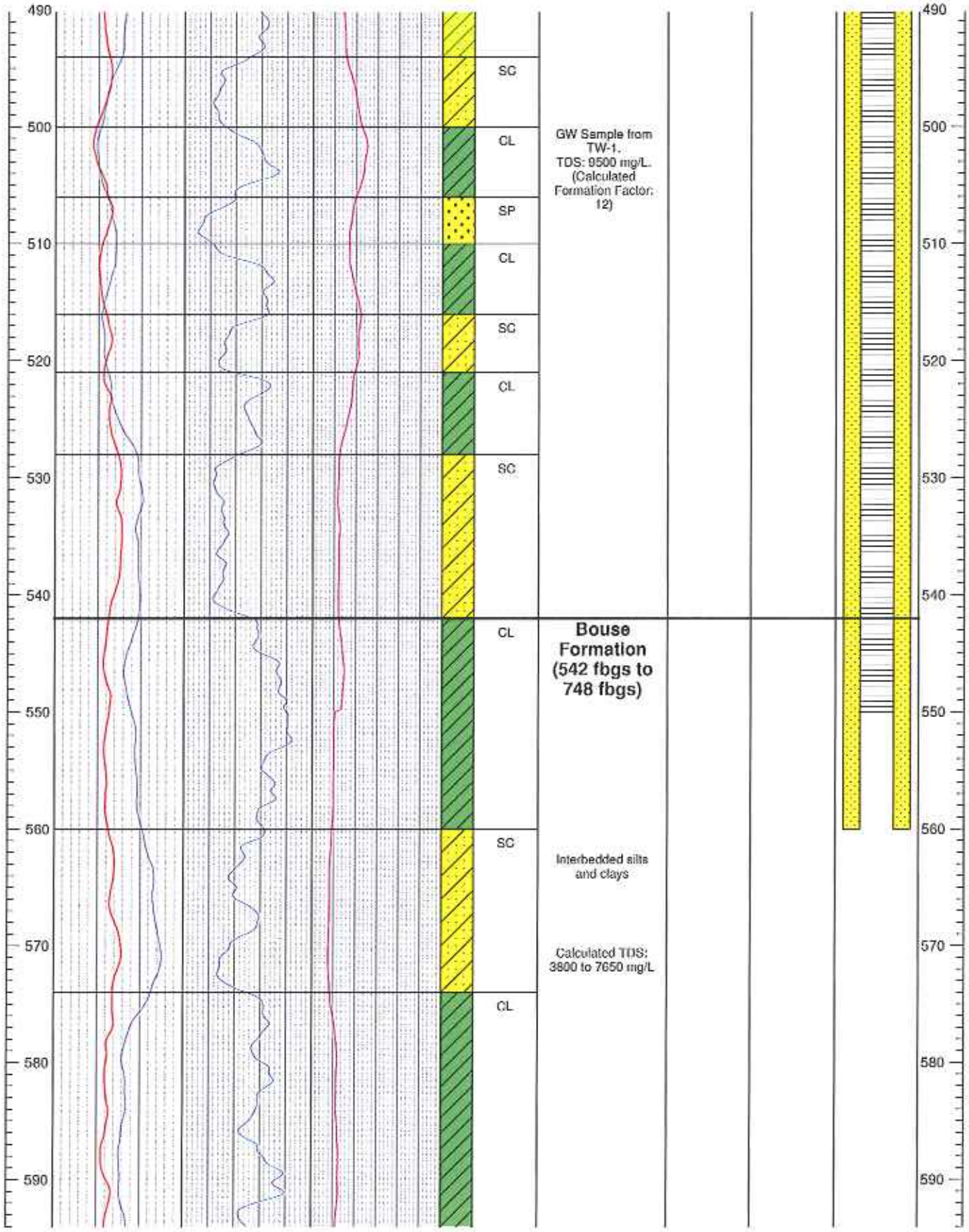
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Calculated TDS for OBS-2

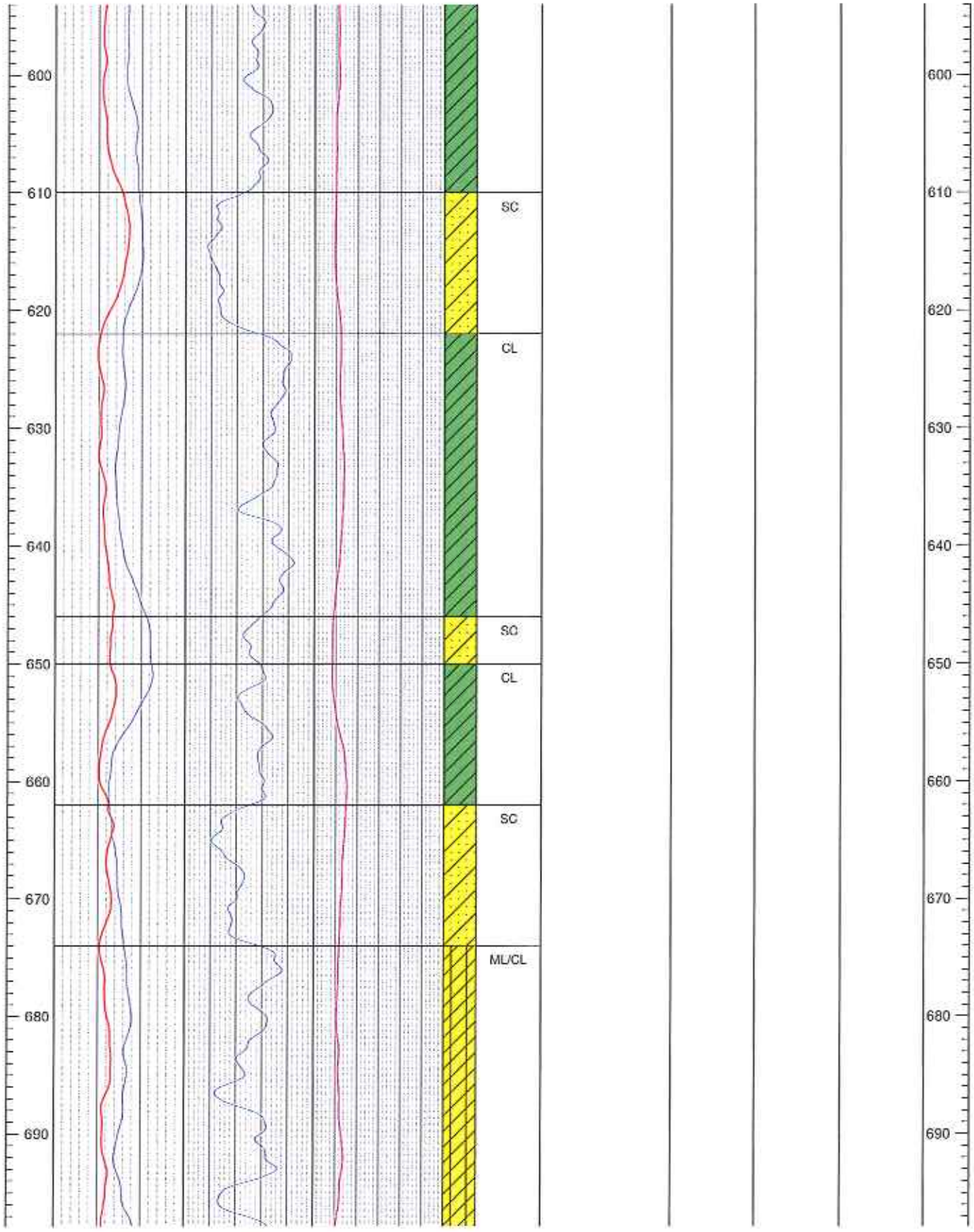
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Calculated TDS for OBS-2

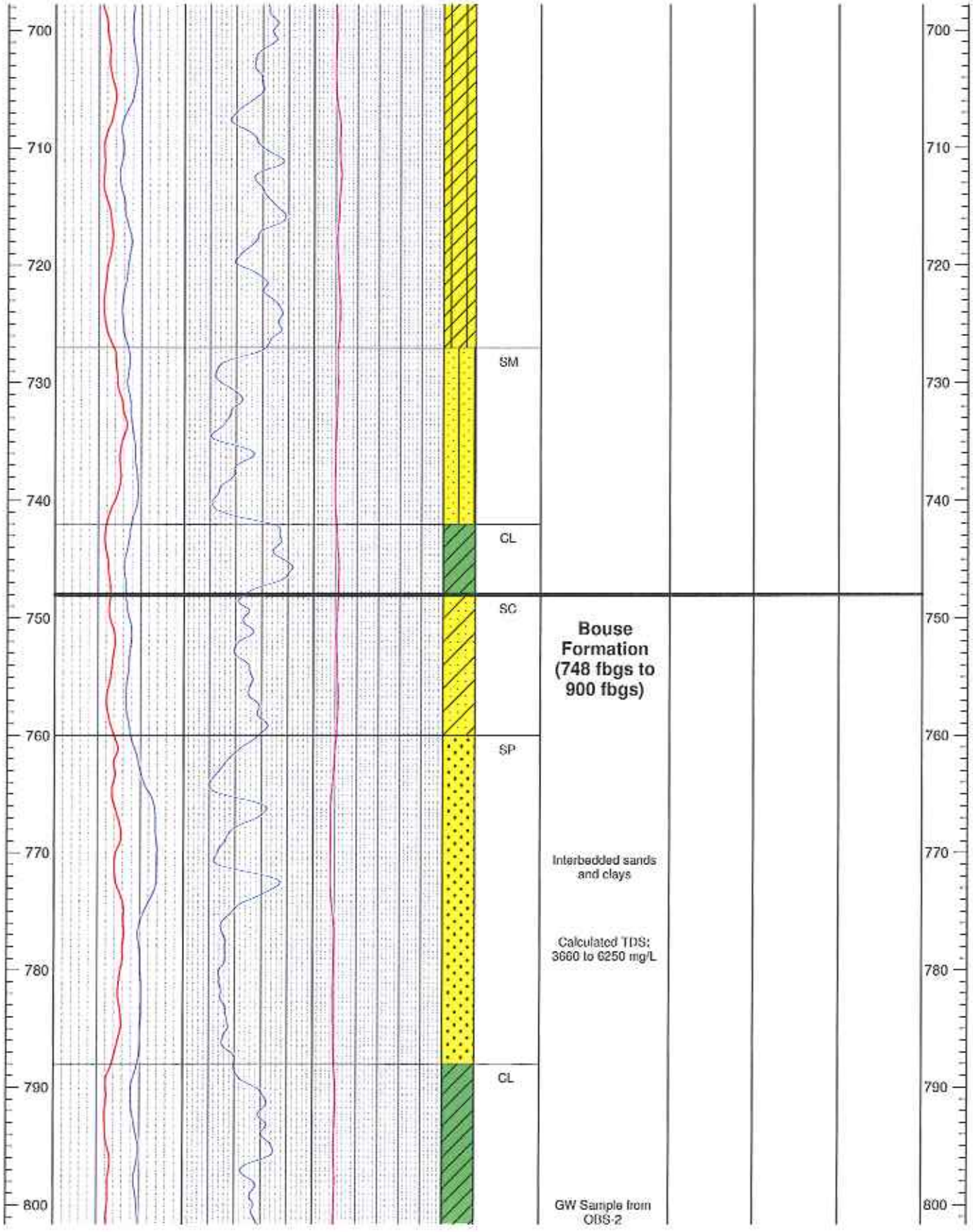
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Calculated TDS for OBS-2

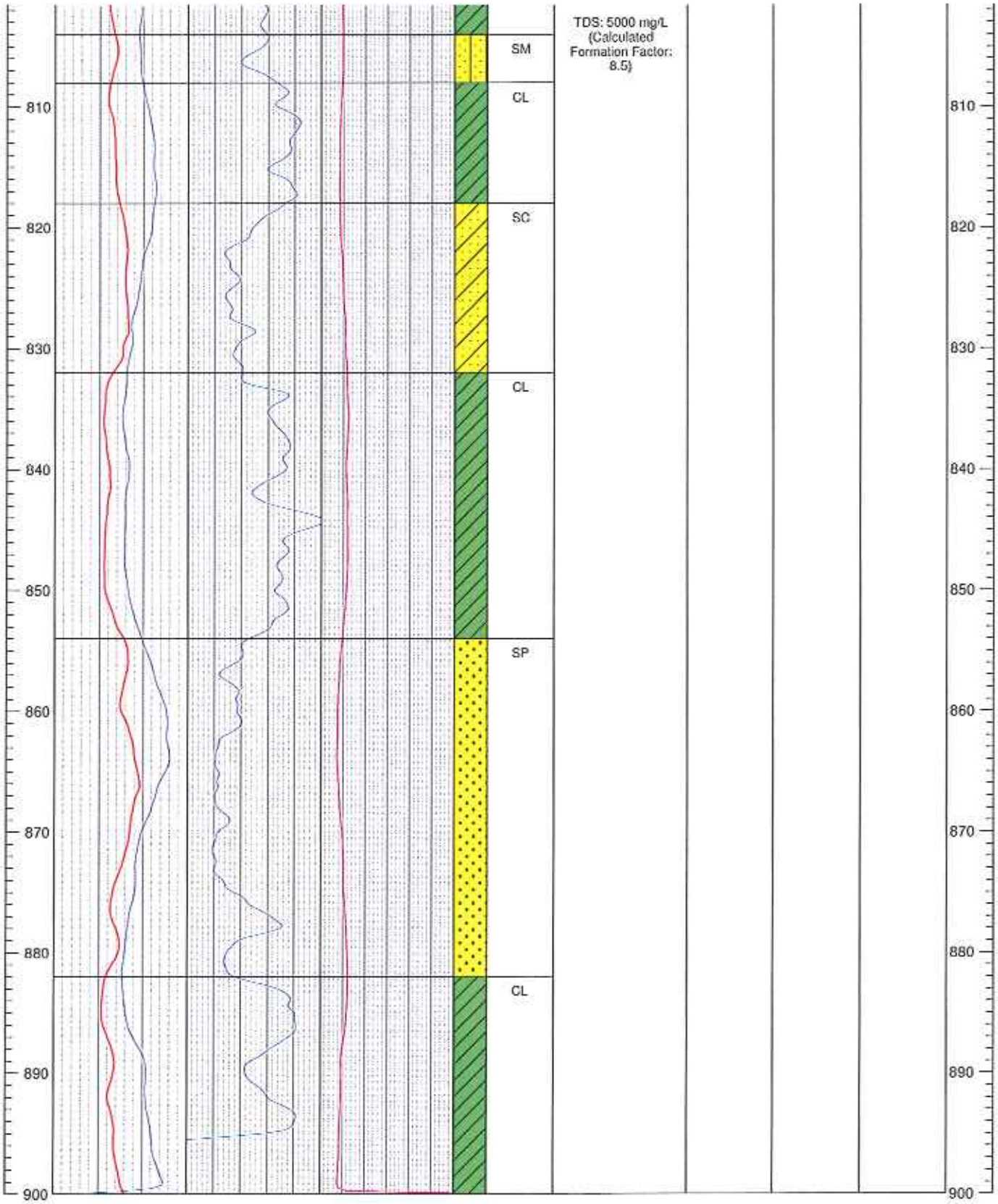
Genesis Solar, LLC
Project Number: 52004617

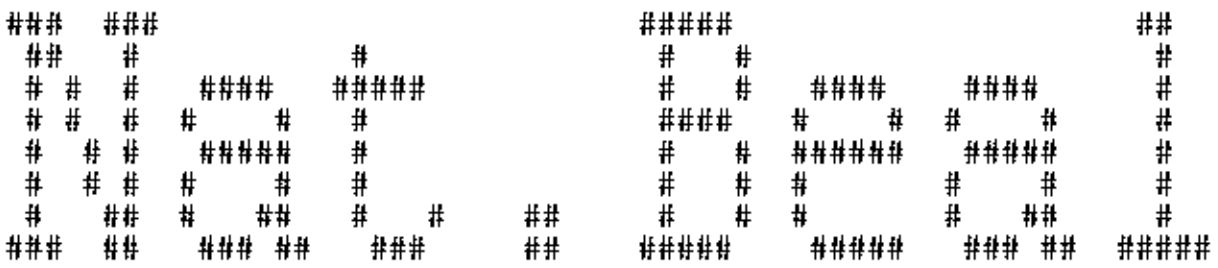


WorleyParsons
resources & energy

Calculated TDS for OBS-2

Genesis Solar, LLC
Project Number: 52004617





Job : 22
Date: 12/22/2009
Time: 3:04:48 PM

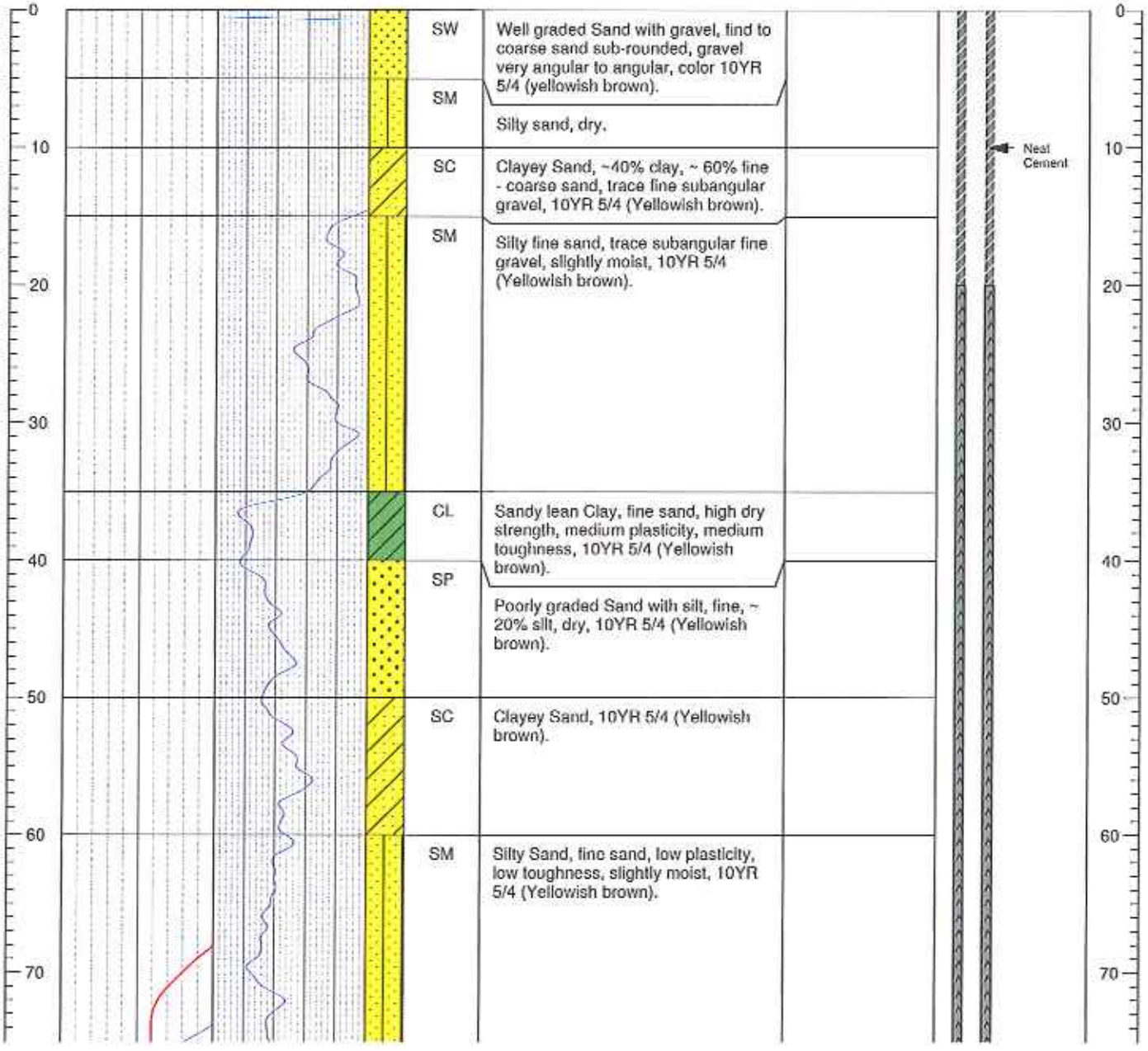
WorleyParsons
resources & energy

Adjusted Lithologic Log of TW-1

Genesis Solar, LLC
Project Number: 52004617

Date Drilled: 05/15/2009 to 05/18/2009		Borehole Location: N33°40.419' W115°03.268	
Drilling Method: Mud Rotary, 10" Diameter		Ground Surface Elevation: 383 feet amsl	
Drilling Contractor: WDC Exploration		Static Water Level: 86.26 feet amsl	
Geologist: Nat Beal	Reviewer: Nat Beal	Total Depth: 564 ft	Well Depth: 555 ft

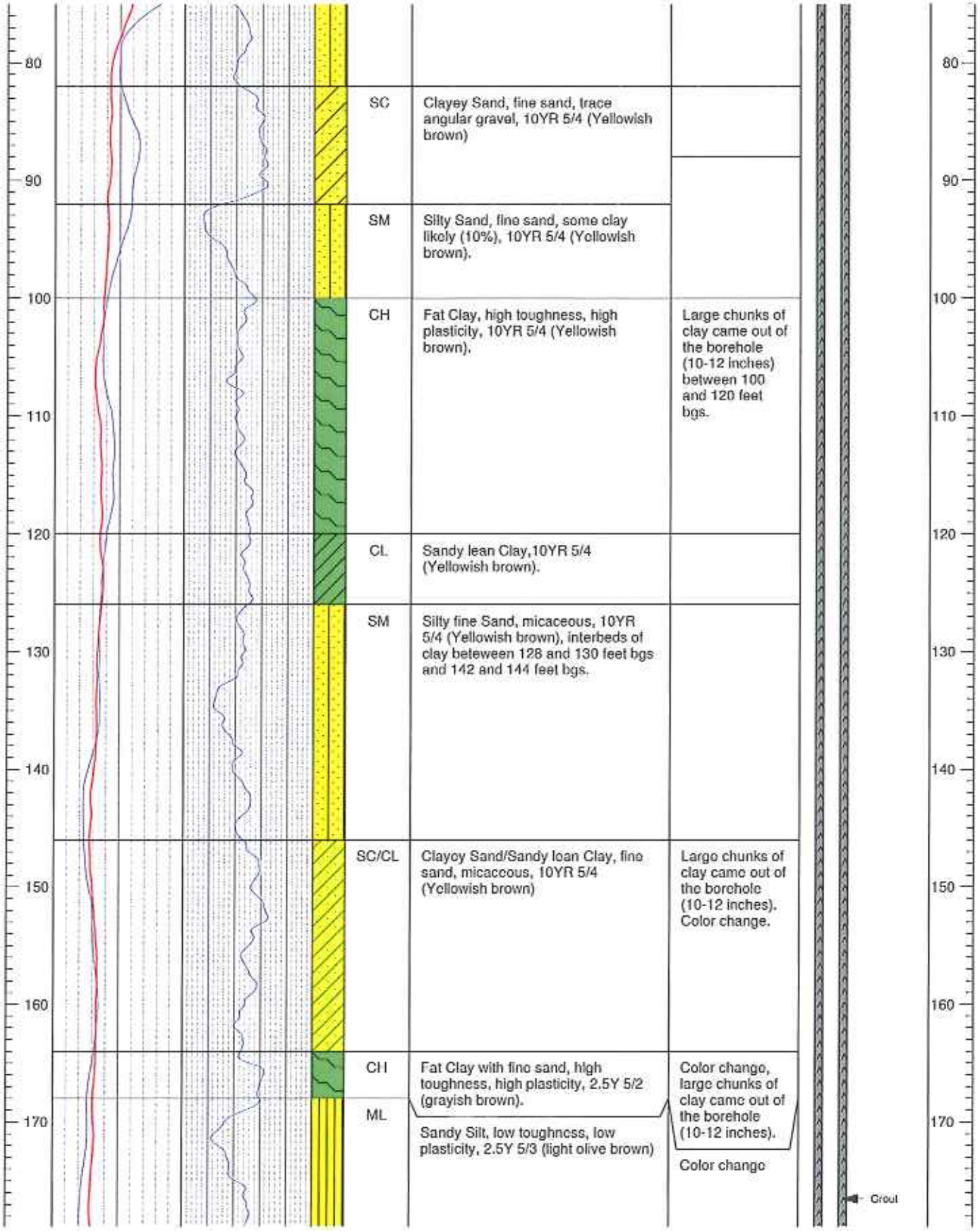
Notes:
1) The upper 160 ft were adjusted based on the cuttings log from OBS-1 and the geophysical logs
2) From 160 ft to 550 ft the log was adjusted based on the borehole geophysical logs for this well and geotechnical samples collected from well OBS-2.
3) RLN and RSN logs have been corrected to 77 degrees F



WorleyParsons
resources & energy

Adjusted Lithologic Log of TW-1

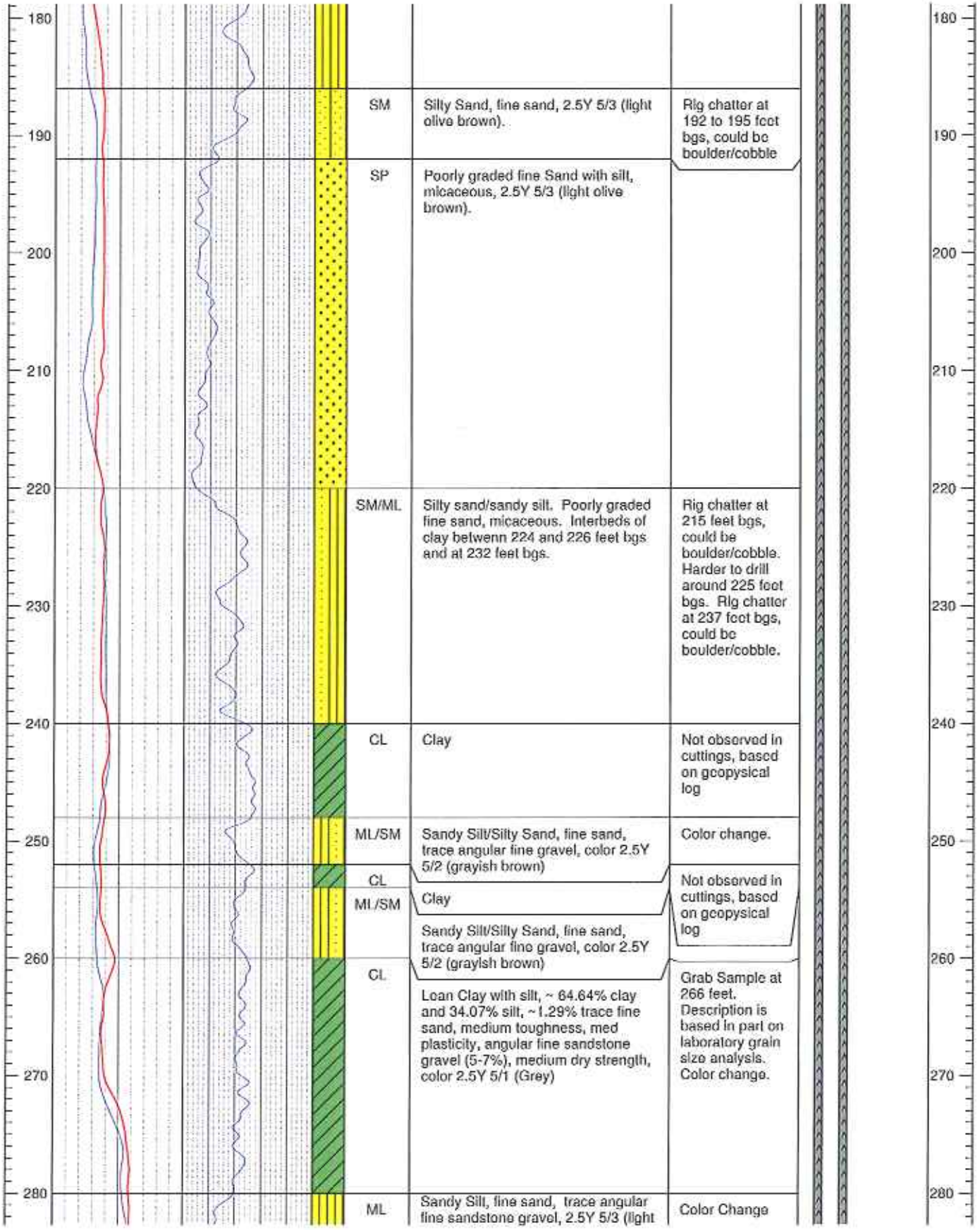
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Adjusted Lithologic Log of TW-1

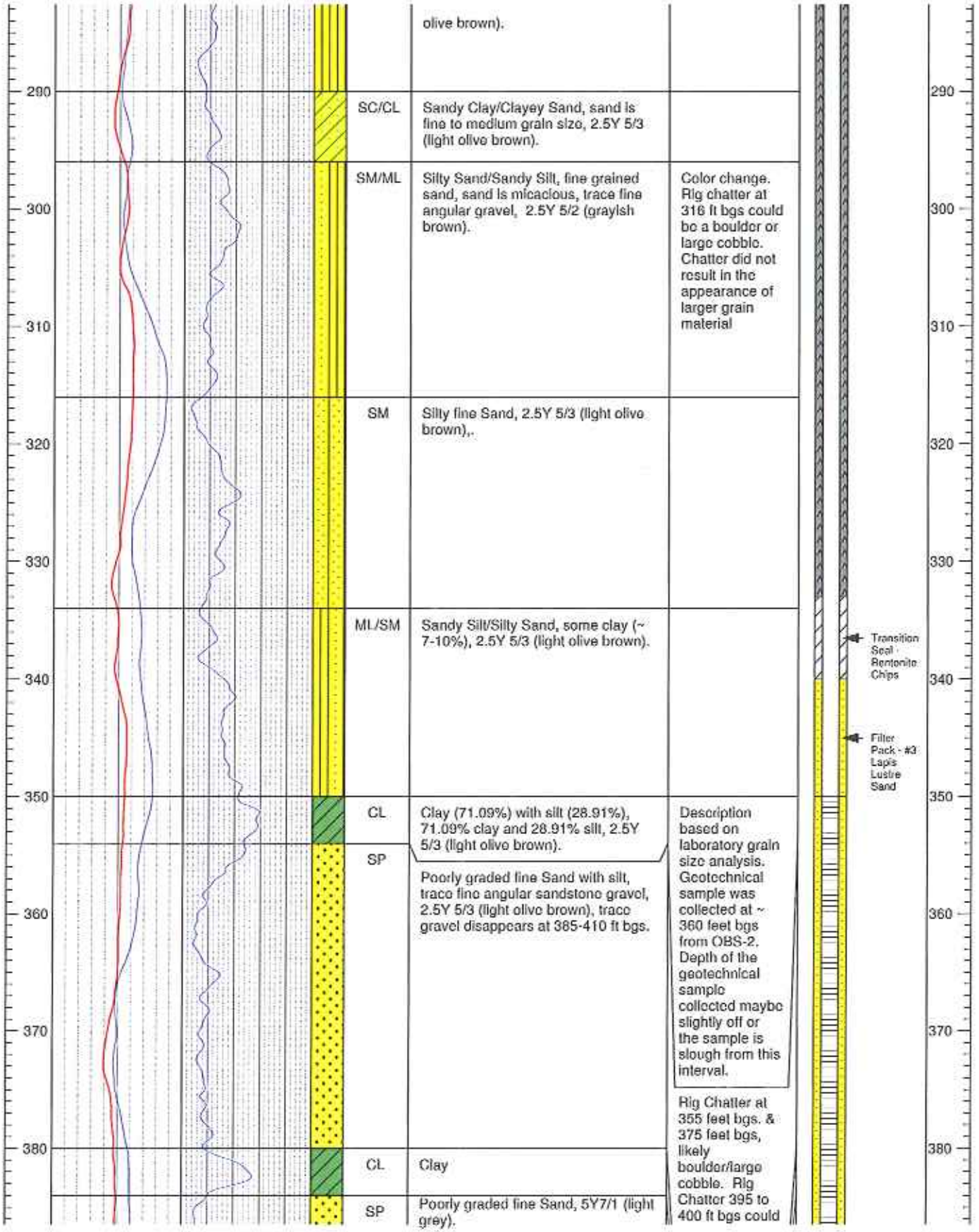
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Adjusted Lithologic Log of TW-1

Genesis Solar, LLC
Project Number: 52004617

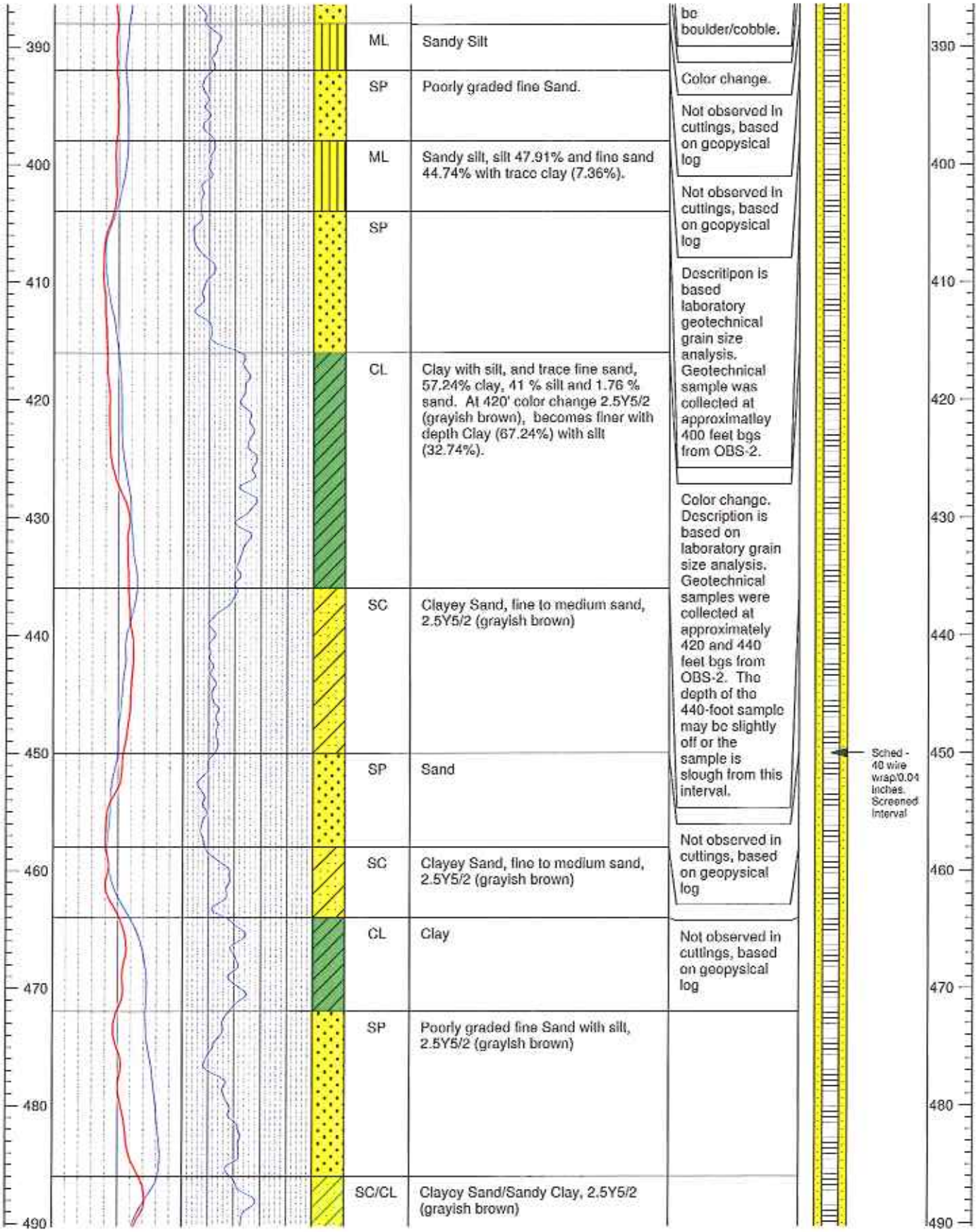


		olive brown).	
290	SC/CL	Sandy Clay/Clayey Sand, sand is fine to medium grain size, 2.5Y 5/3 (light olive brown).	
300	SM/ML	Silty Sand/Sandy Silt, fine grained sand, sand is micaclous, trace fine angular gravel, 2.5Y 5/2 (grayish brown).	Color change. Rig chatter at 316 ft bgs could be a boulder or large cobble. Chatter did not result in the appearance of larger grain material
310			
320	SM	Silty fine Sand, 2.5Y 5/3 (light olive brown),.	
330			
340	ML/SM	Sandy Silt/Silty Sand, some clay (~ 7-10%), 2.5Y 5/3 (light olive brown).	
350	CL	Clay (71.09%) with silt (28.91%), 71.09% clay and 28.91% silt, 2.5Y 5/3 (light olive brown).	Description based on laboratory grain size analysis. Geotechnical sample was collected at ~ 360 feet bgs from OBS-2. Depth of the geotechnical sample collected maybe slightly off or the sample is slough from this interval.
	SP	Poorly graded fine Sand with silt, trace fine angular sandstone gravel, 2.5Y 5/3 (light olive brown), trace gravel disappears at 385-410 ft bgs.	
370			
380	CL	Clay	Rig Chatter at 355 feet bgs. & 375 feet bgs, likely boulder/large cobble. Rig Chatter 395 to 400 ft bgs could
	SP	Poorly graded fine Sand, 5Y7/1 (light grey).	

WorleyParsons
resources & energy

Adjusted Lithologic Log of TW-1

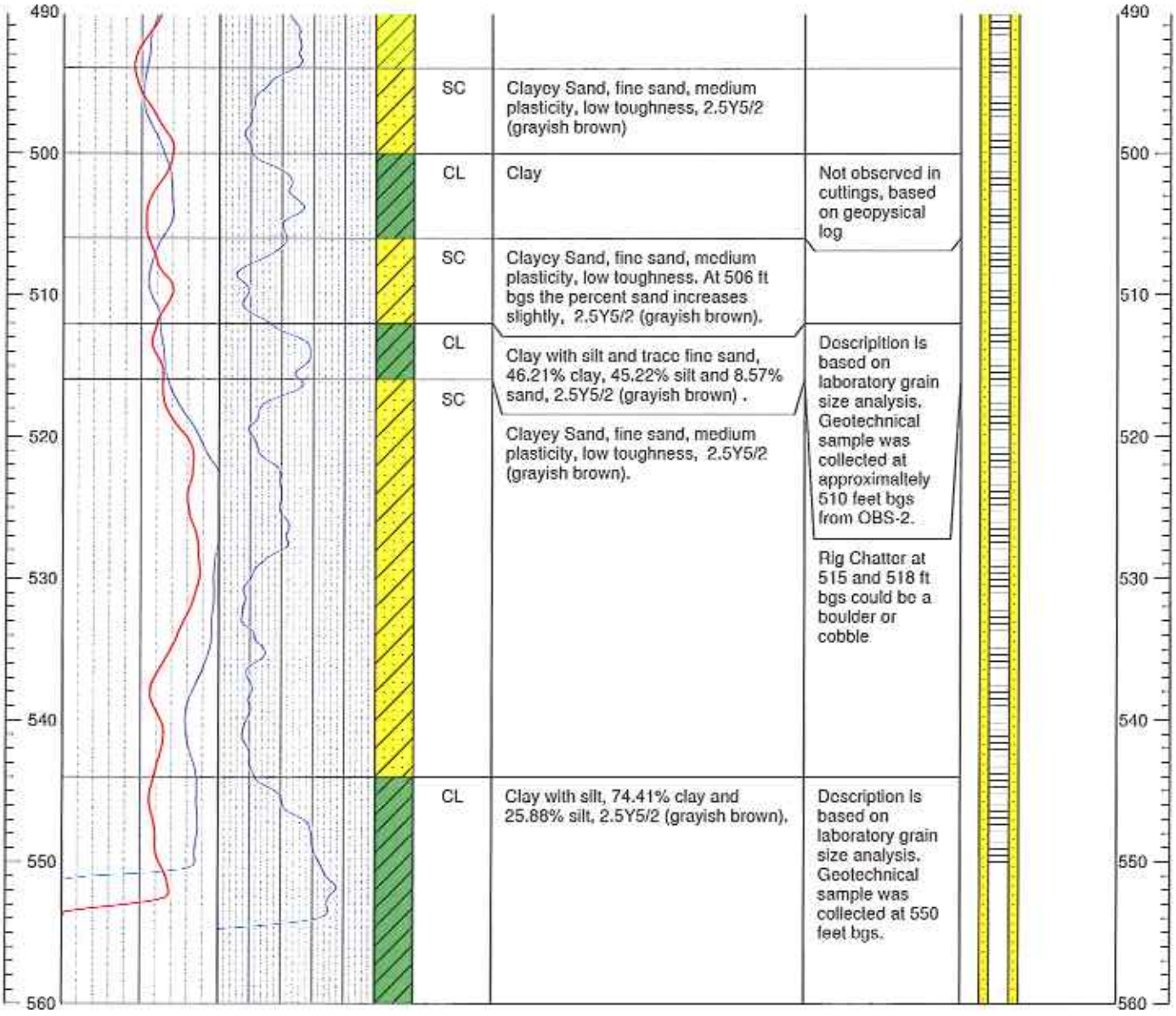
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Adjusted Lithologic Log of TW-1

Genesis Solar, LLC
Project Number: 52004617

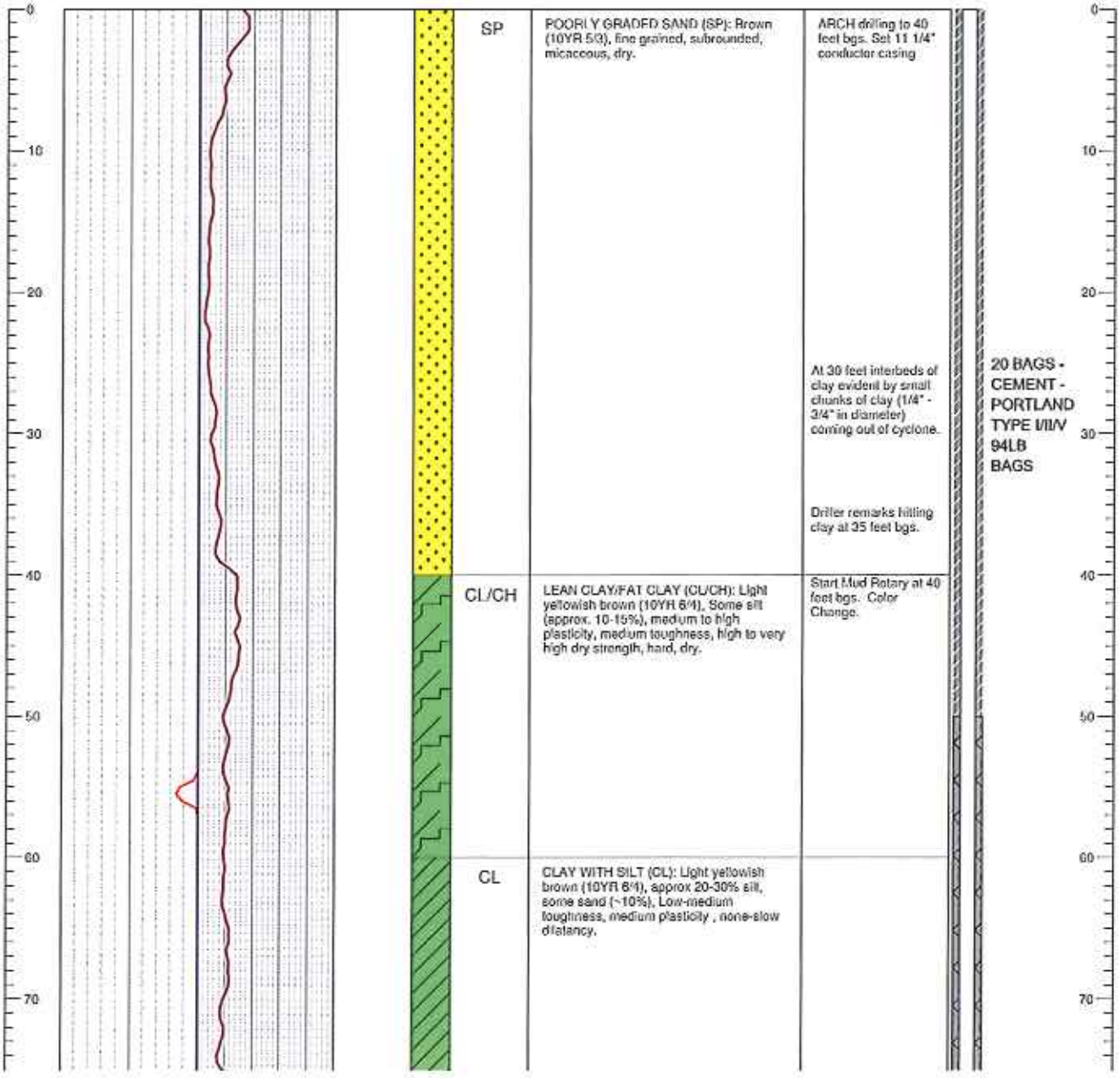


WorleyParsons
resources & energy

Draft Lithologic Log and Well Completion Details for TW-2

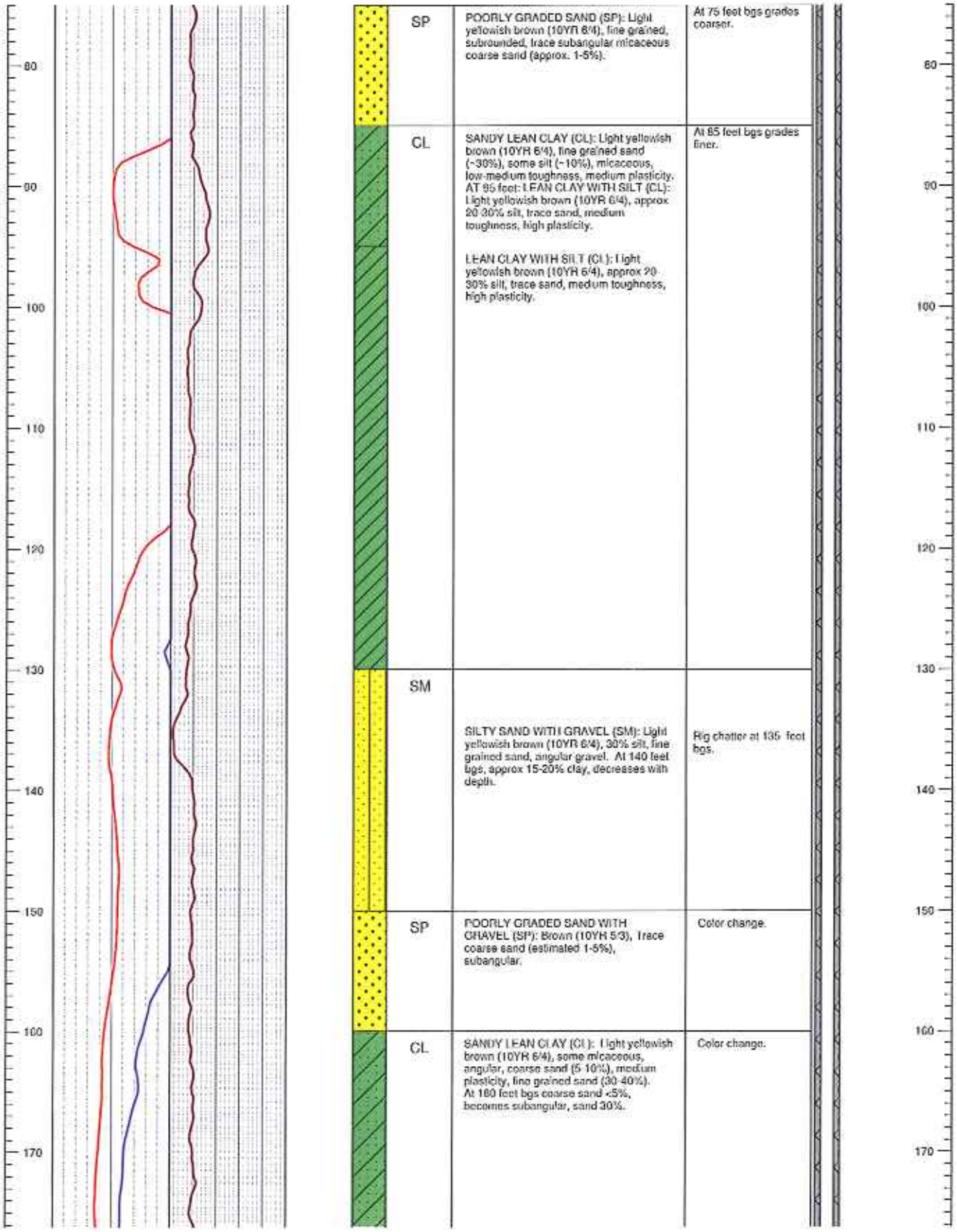
Genesis Solar, LLC
Project Number: 52004617

Date Drilled: 11/17/2009 to 12/09/2009	Northing 2169119.765 Easting 6970187.073	
Drilling Method: Mud Rotary, 10" Diameter Tricone	Ground Surface Elevation: 390.12 feet amsl	
Drilling Contractor: WDC Exploration	Total Depth: 1841 ft	Well Depth: 1830 ft
Geologist: Nat Beal, Ed Baqurizo, Ryan Farrell	Reviewer: Mike Tietze	
Notes: The cuttings log was adjusted based on the interpretation of the geophysical logs.		



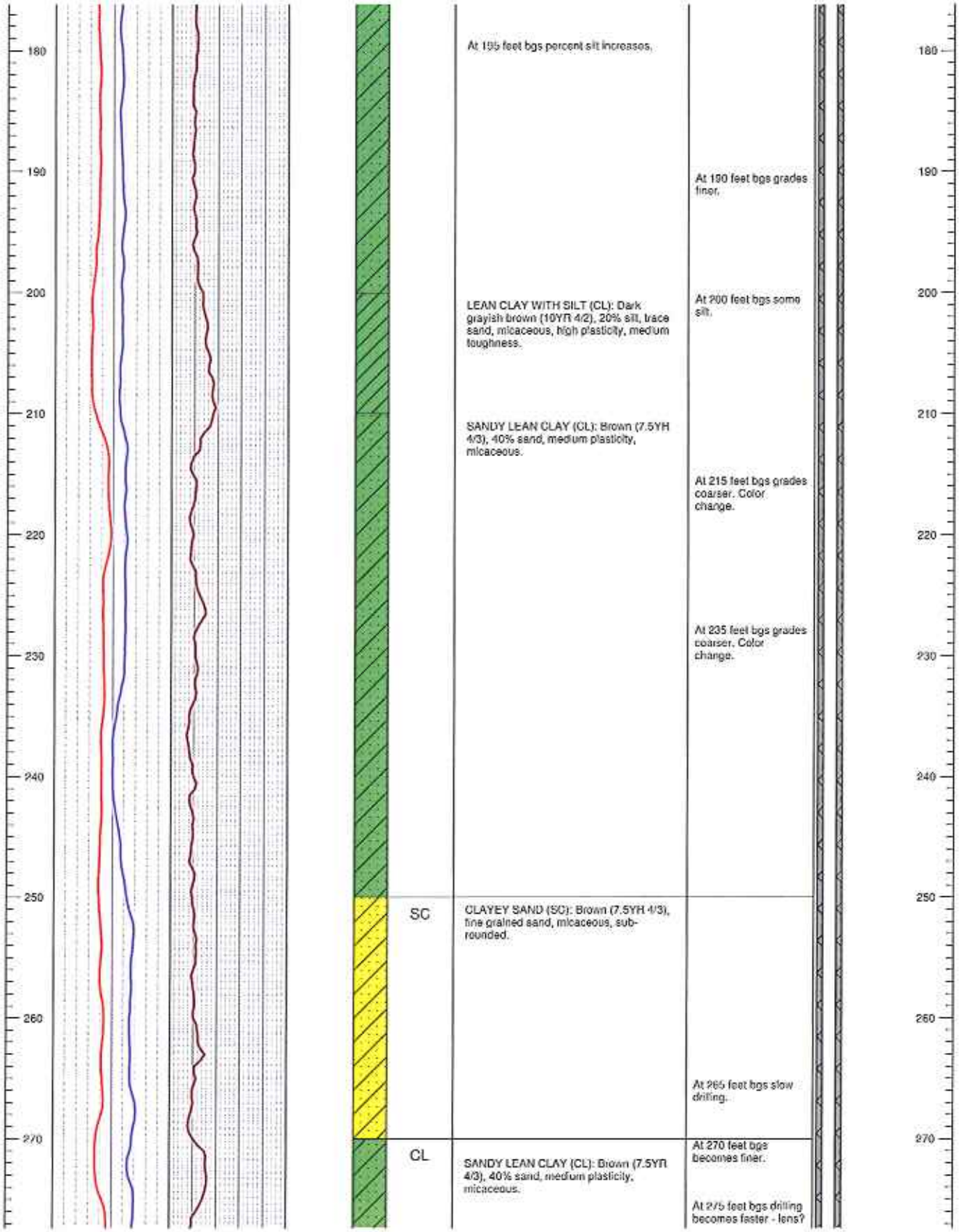
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



Draft Lithologic Logs and Well Completation Details for TW-2

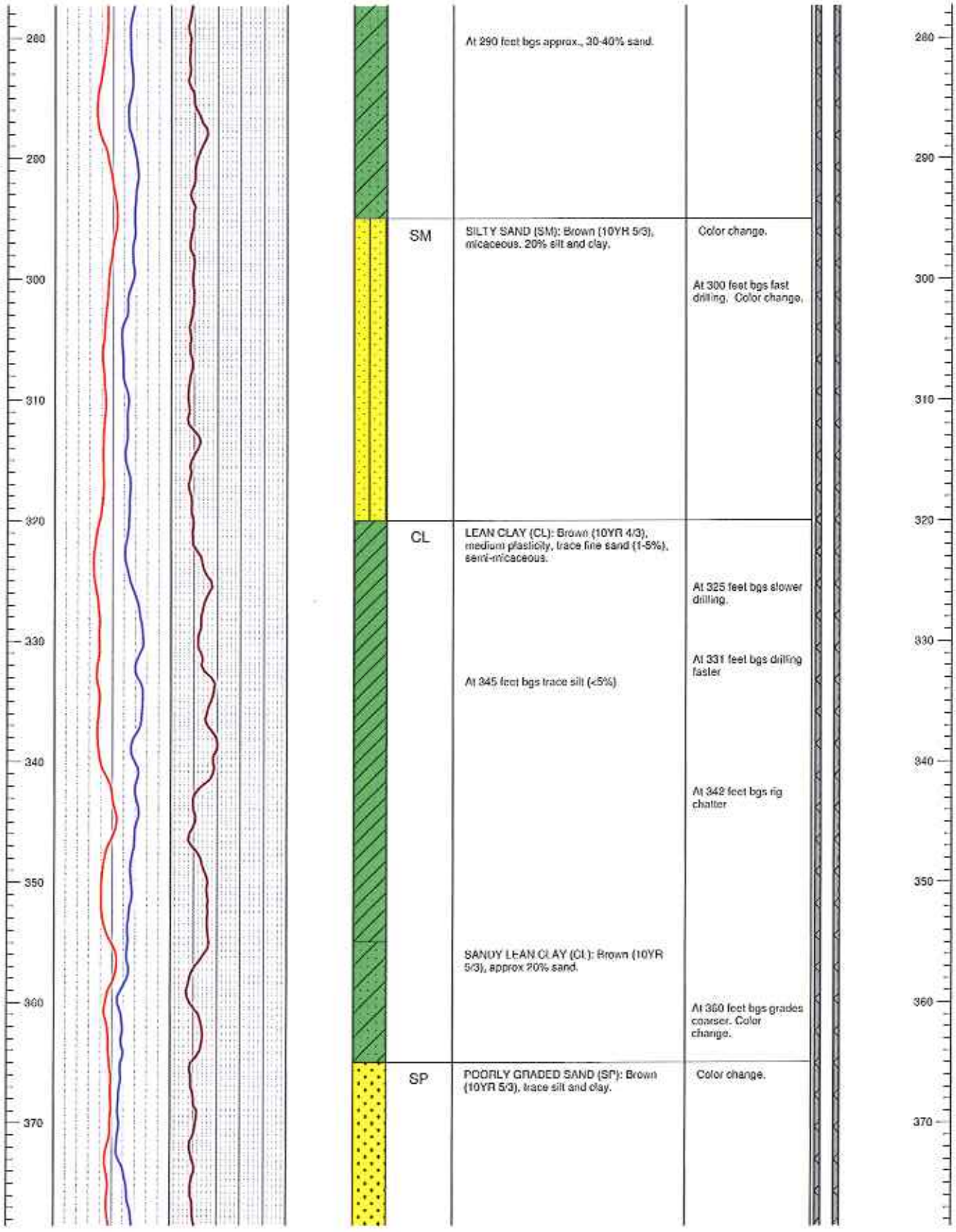
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

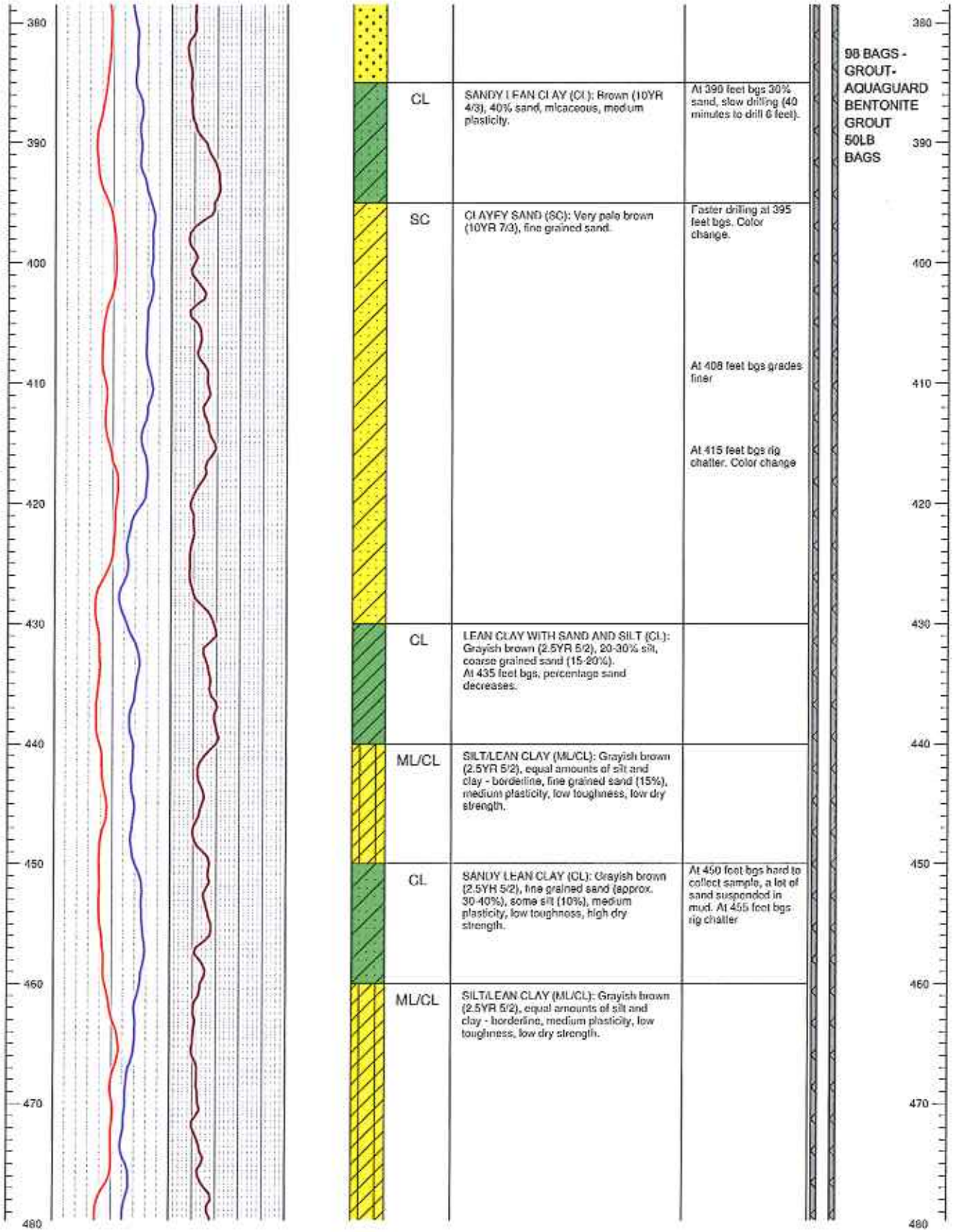
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



Draft Lithologic Logs and Well Completation Details for TW-2

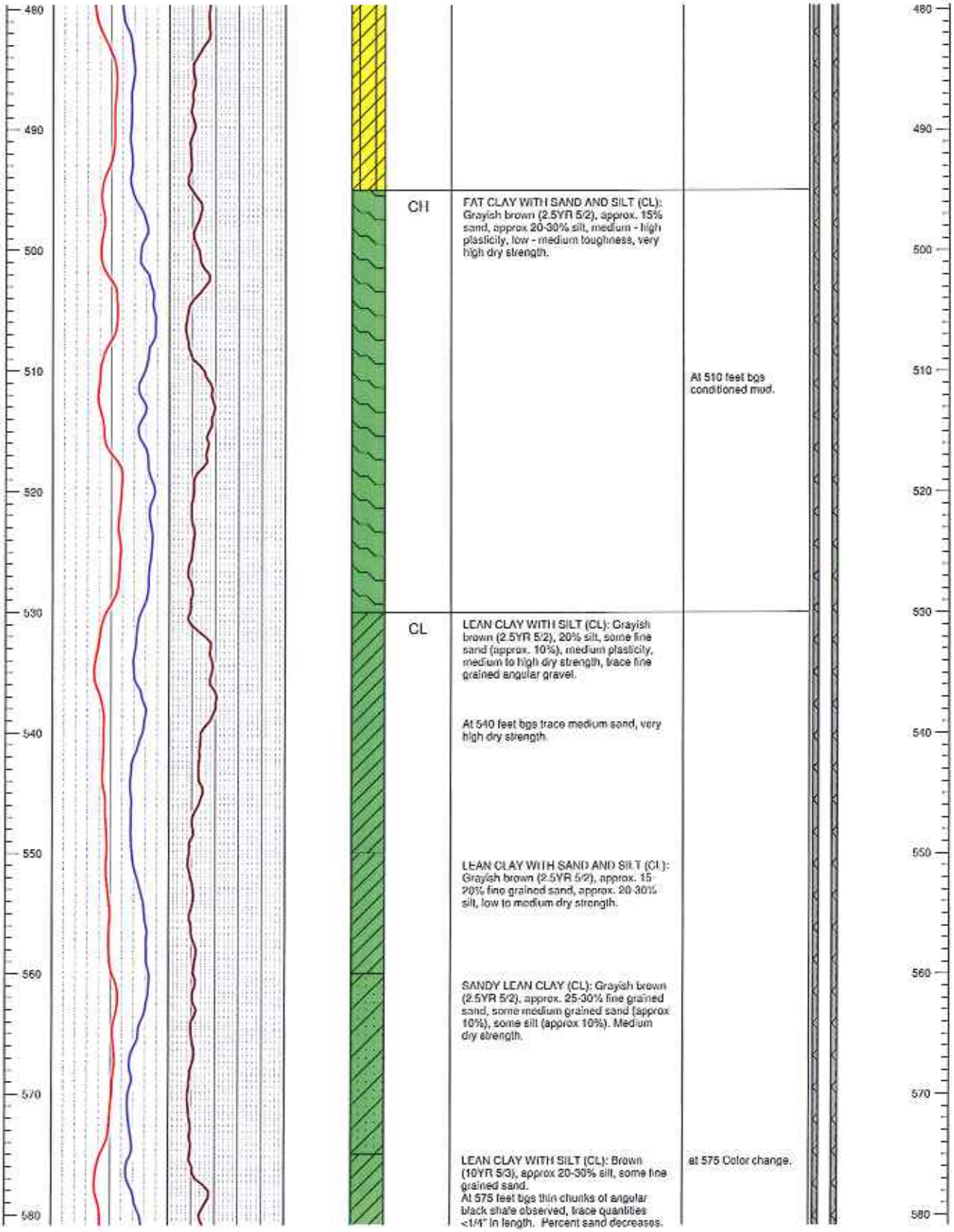
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Draft Lithologic Logs and Well Completation Details for TW-2

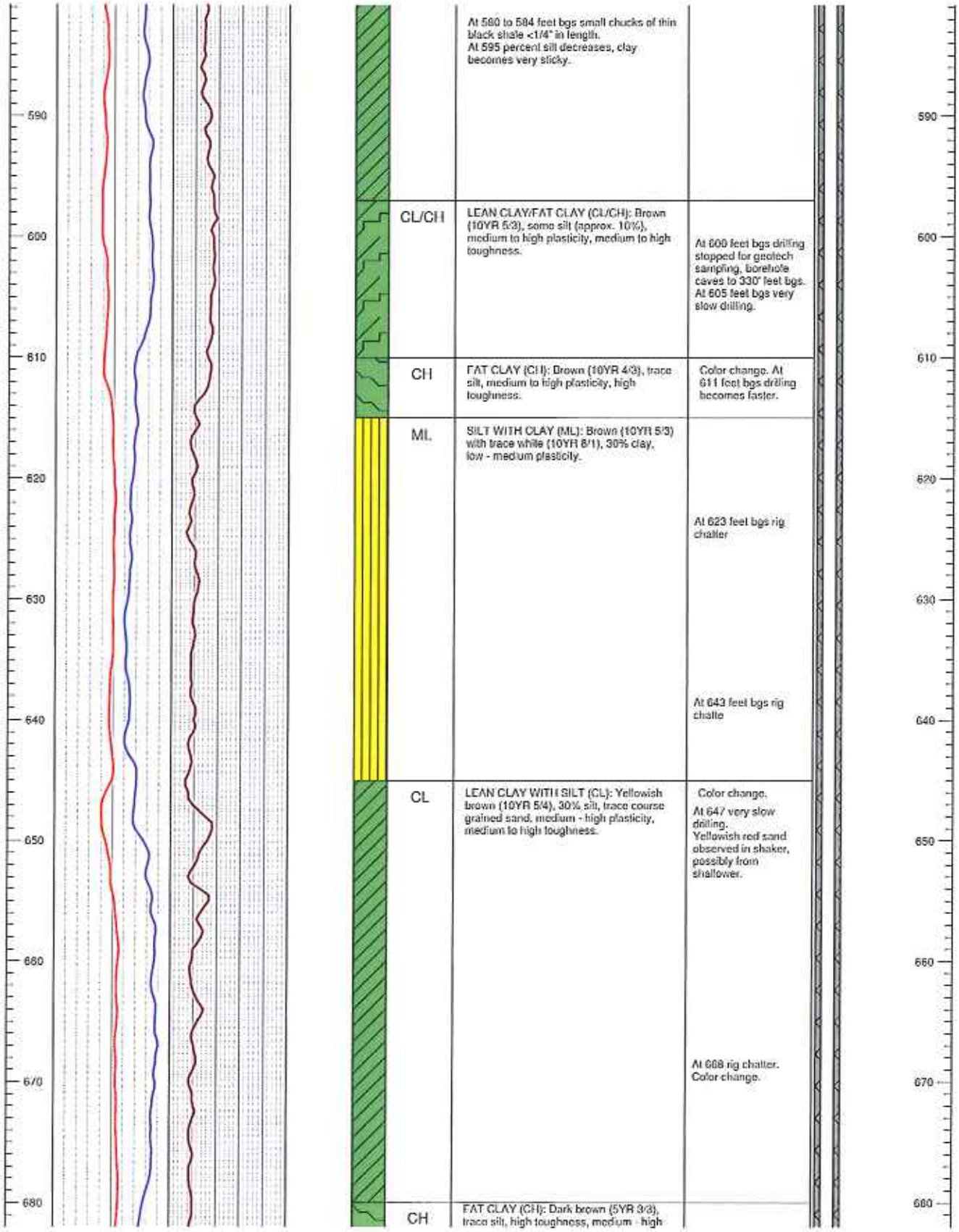
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

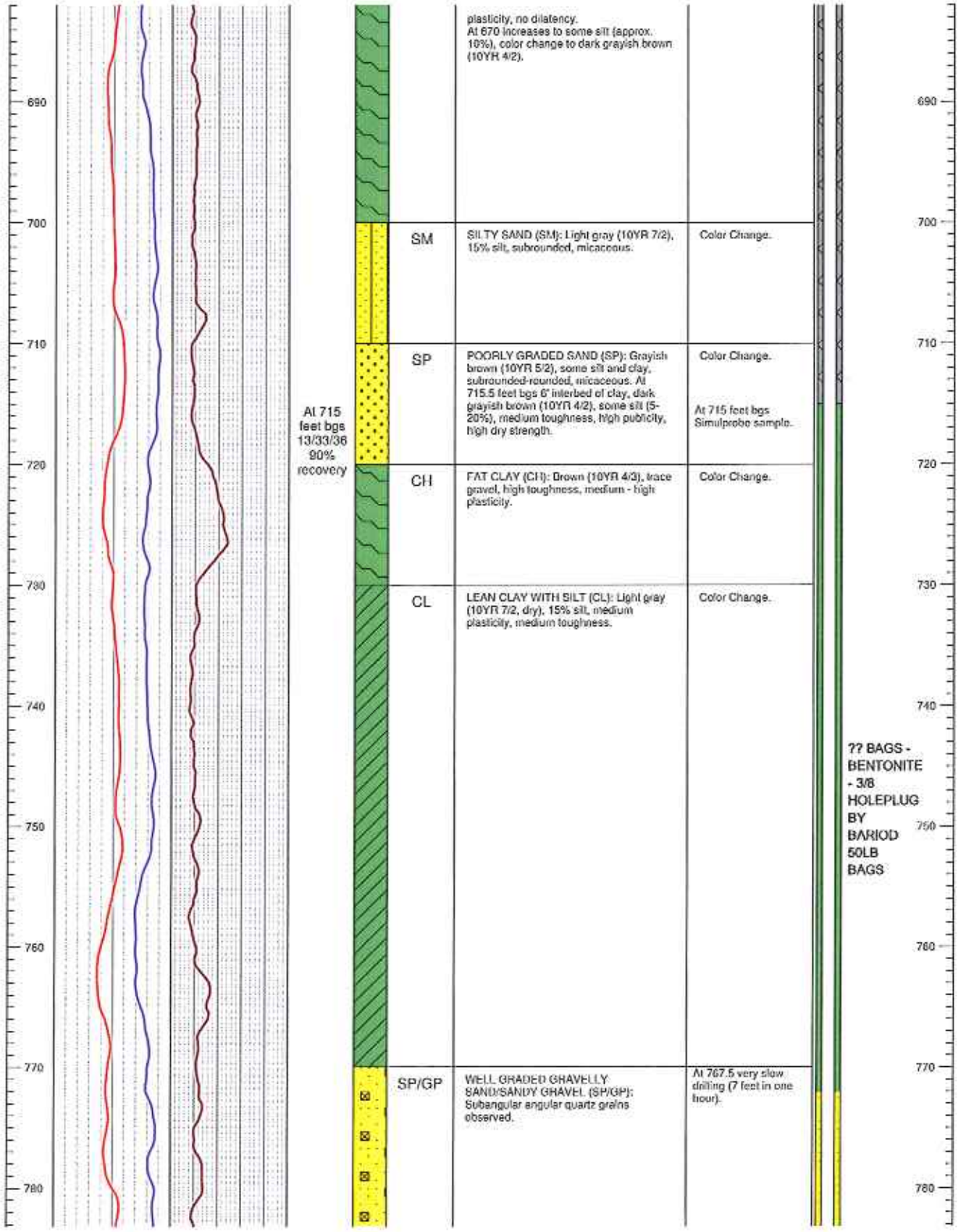
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



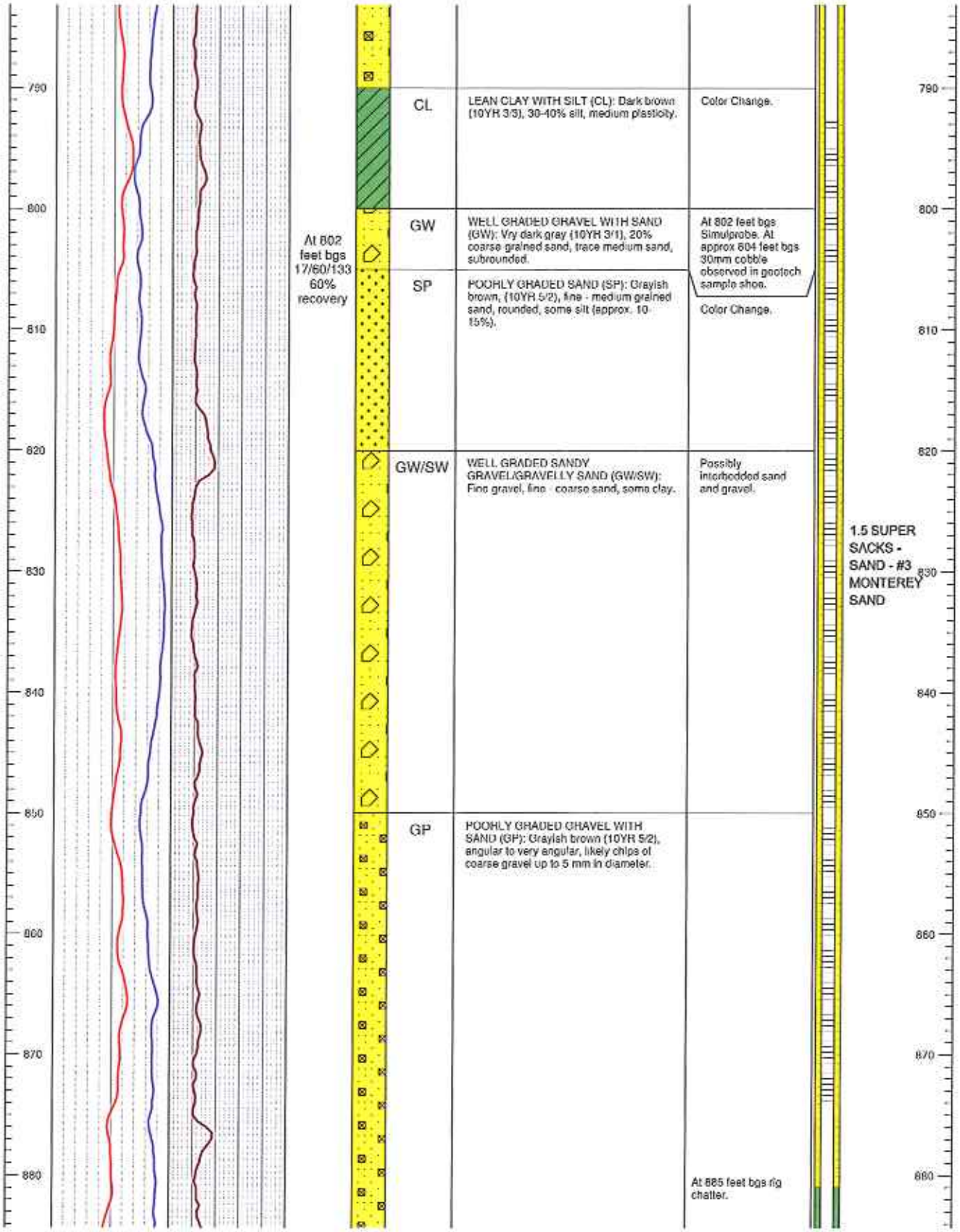
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



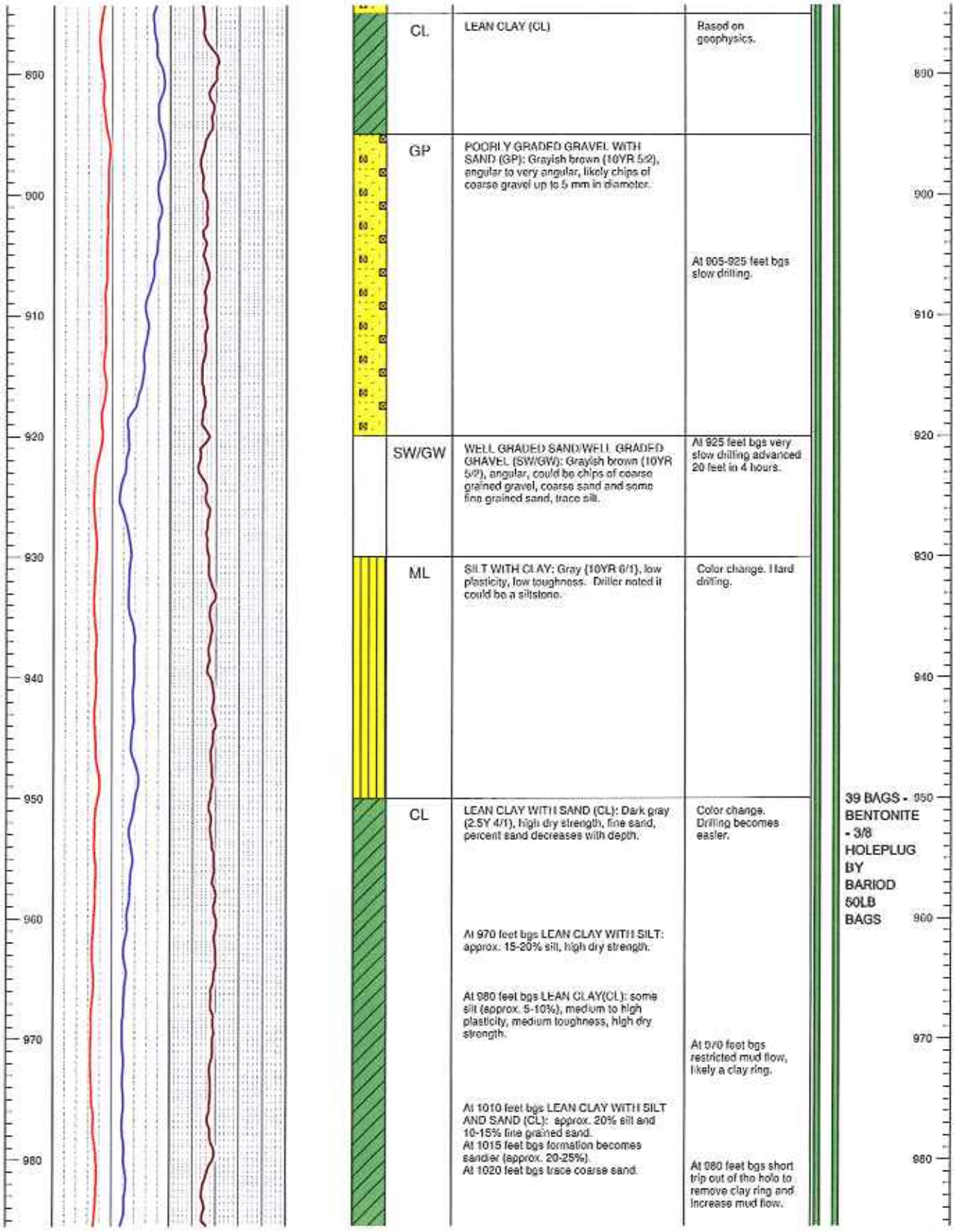
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



Draft Lithologic Logs and Well Completation Details for TW-2

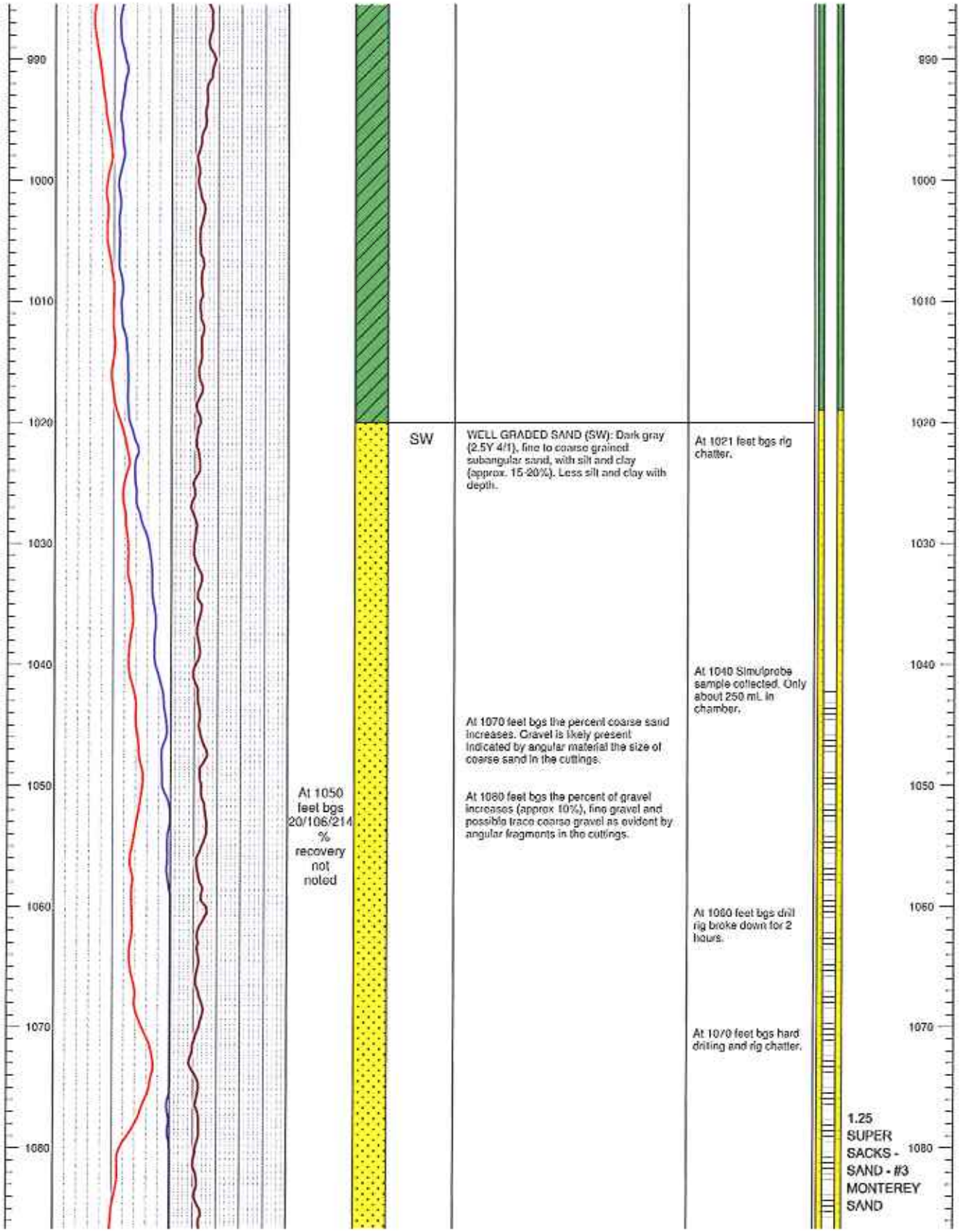
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Draft Lithologic Logs and Well Completation Details for TW-2

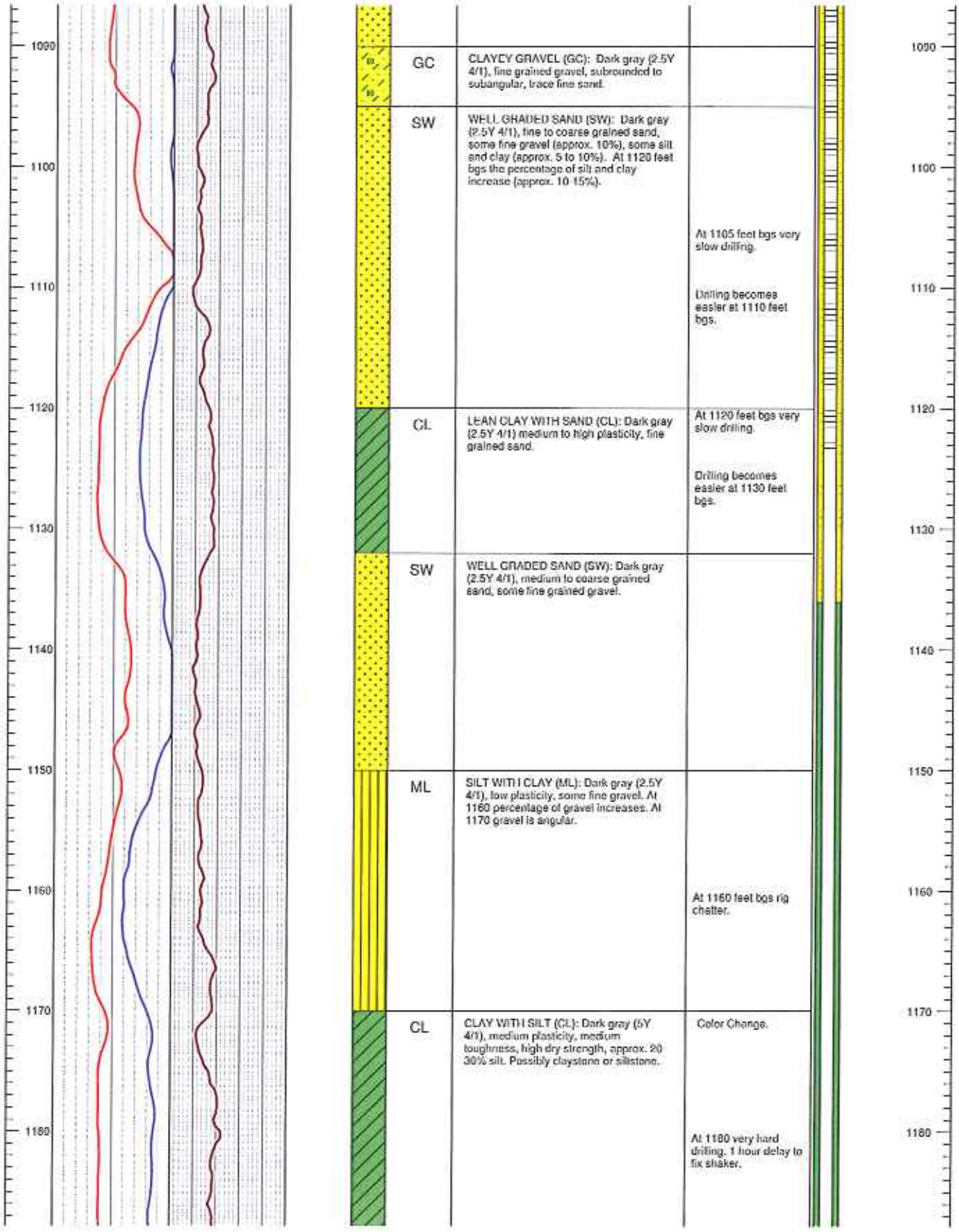
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Draft Lithologic Logs and Well Completation Details for TW-2

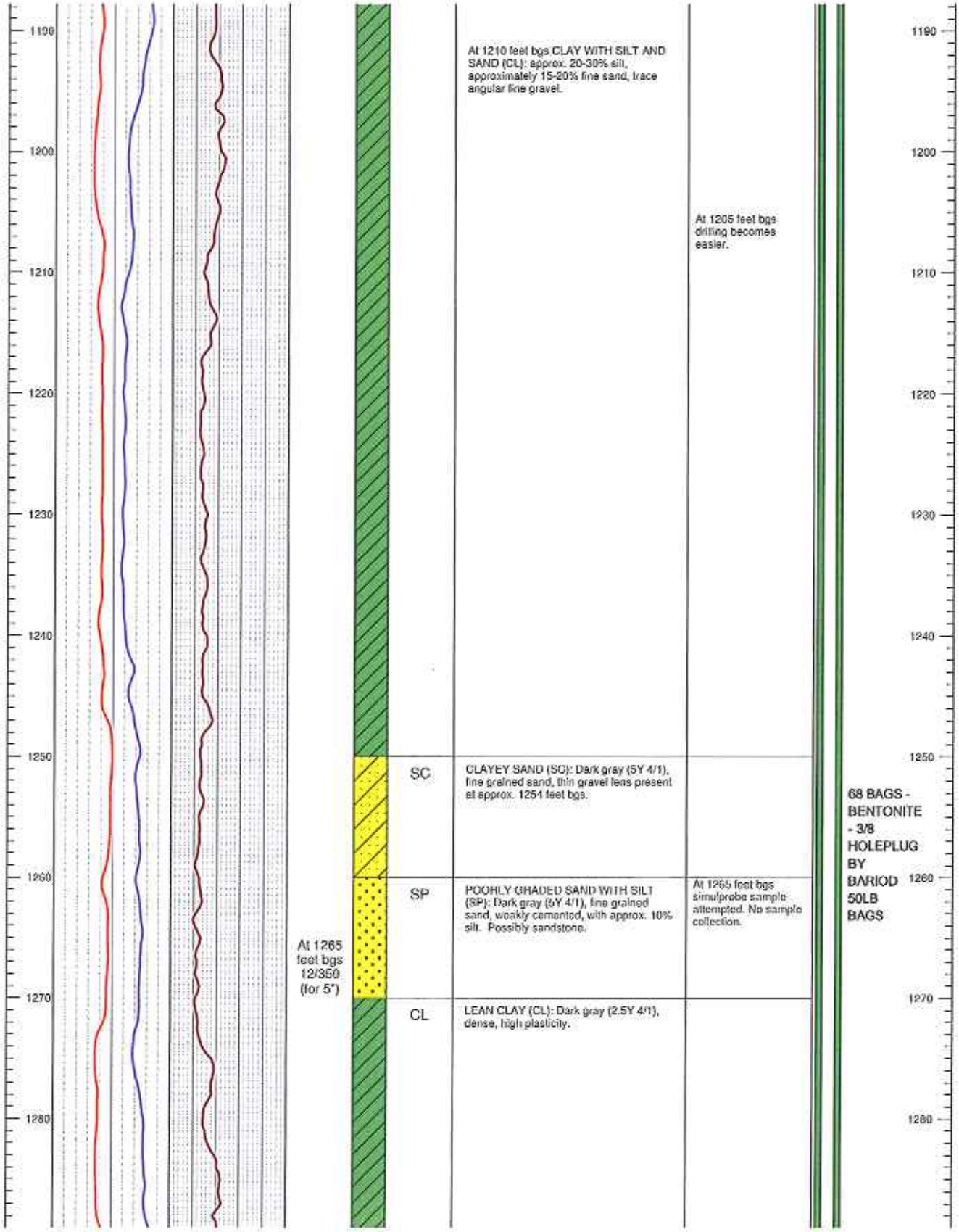
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Draft Lithologic Logs and Well Completation Details for TW-2

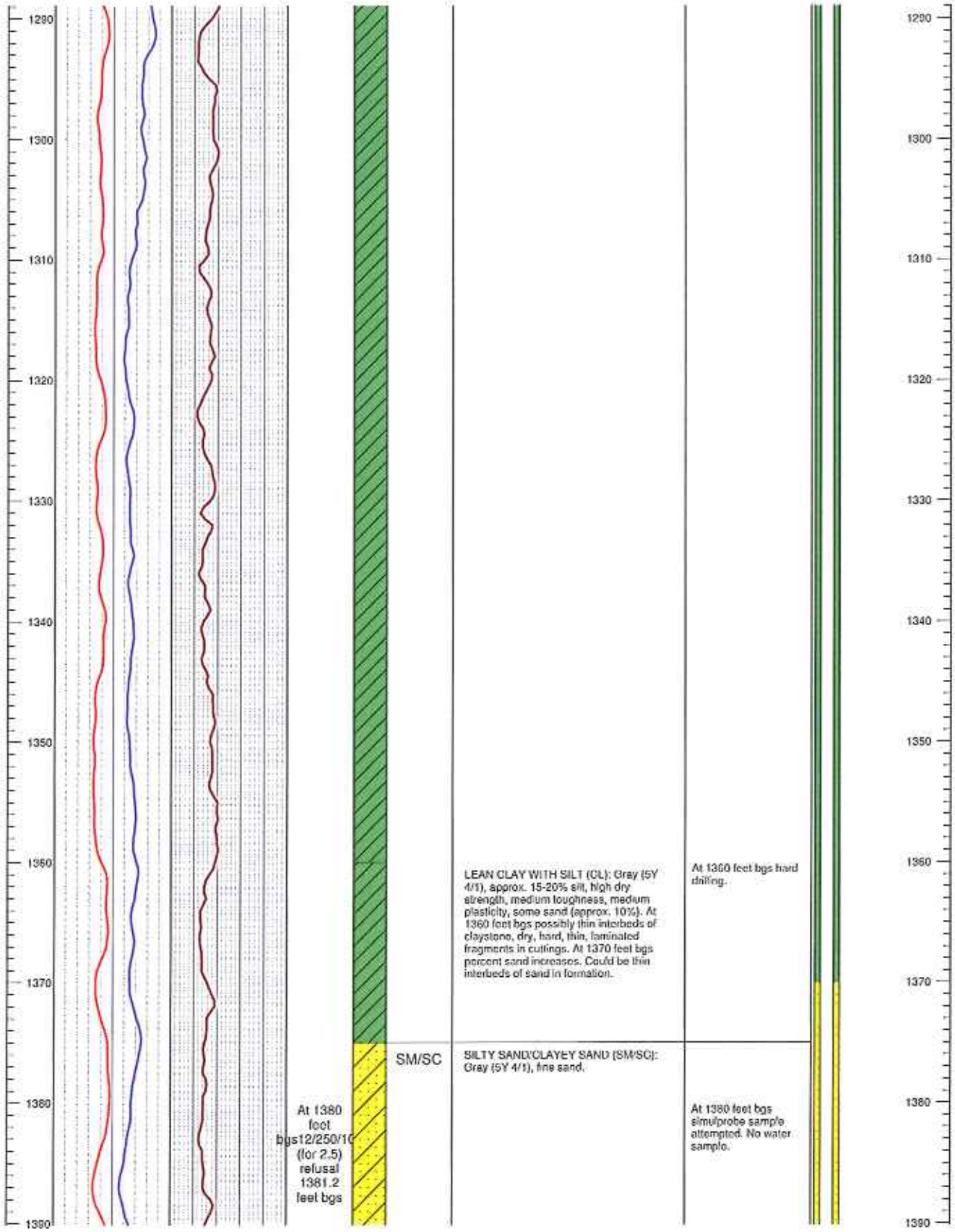
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

Draft Lithologic Logs and Well Completation Details for TW-2

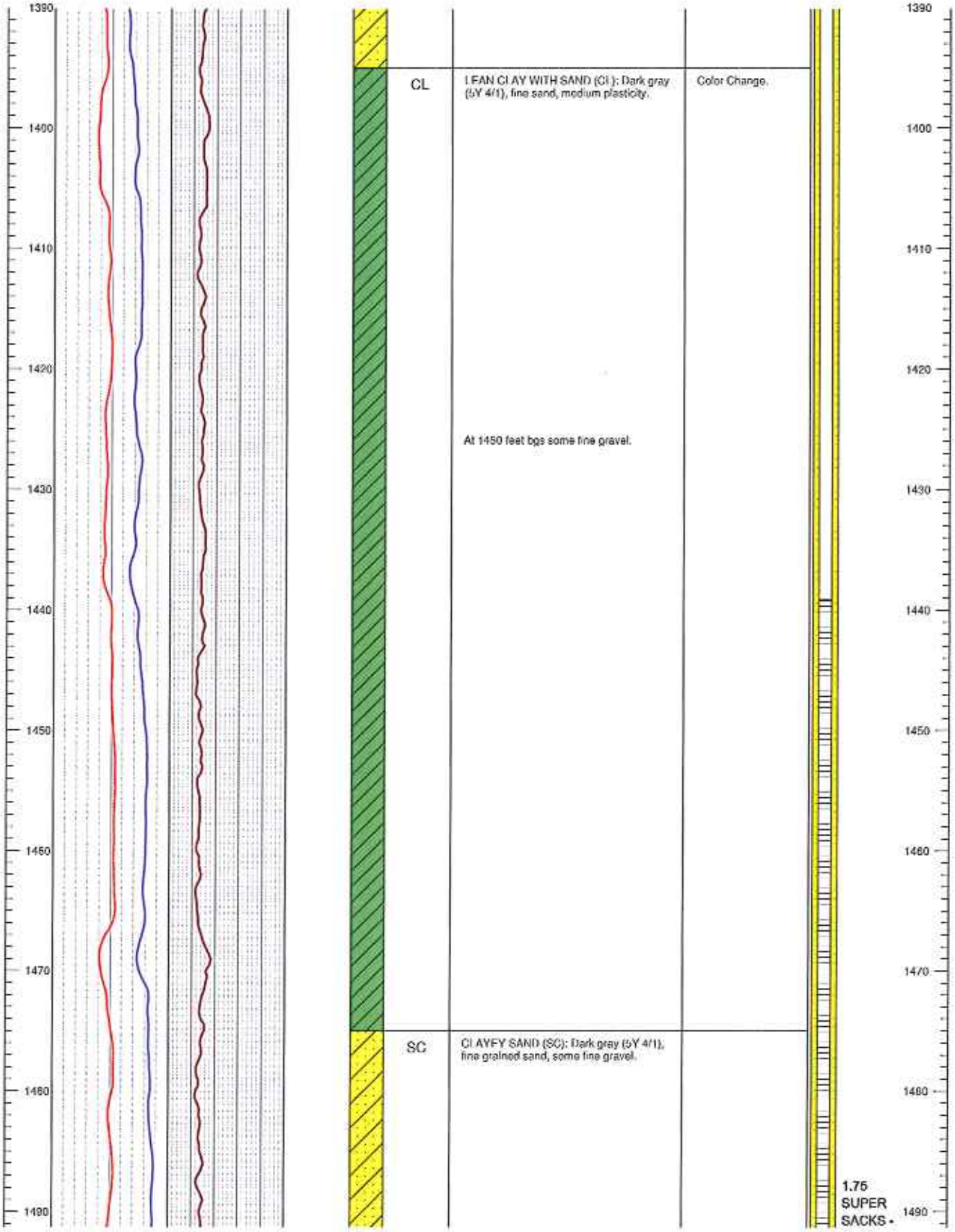
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

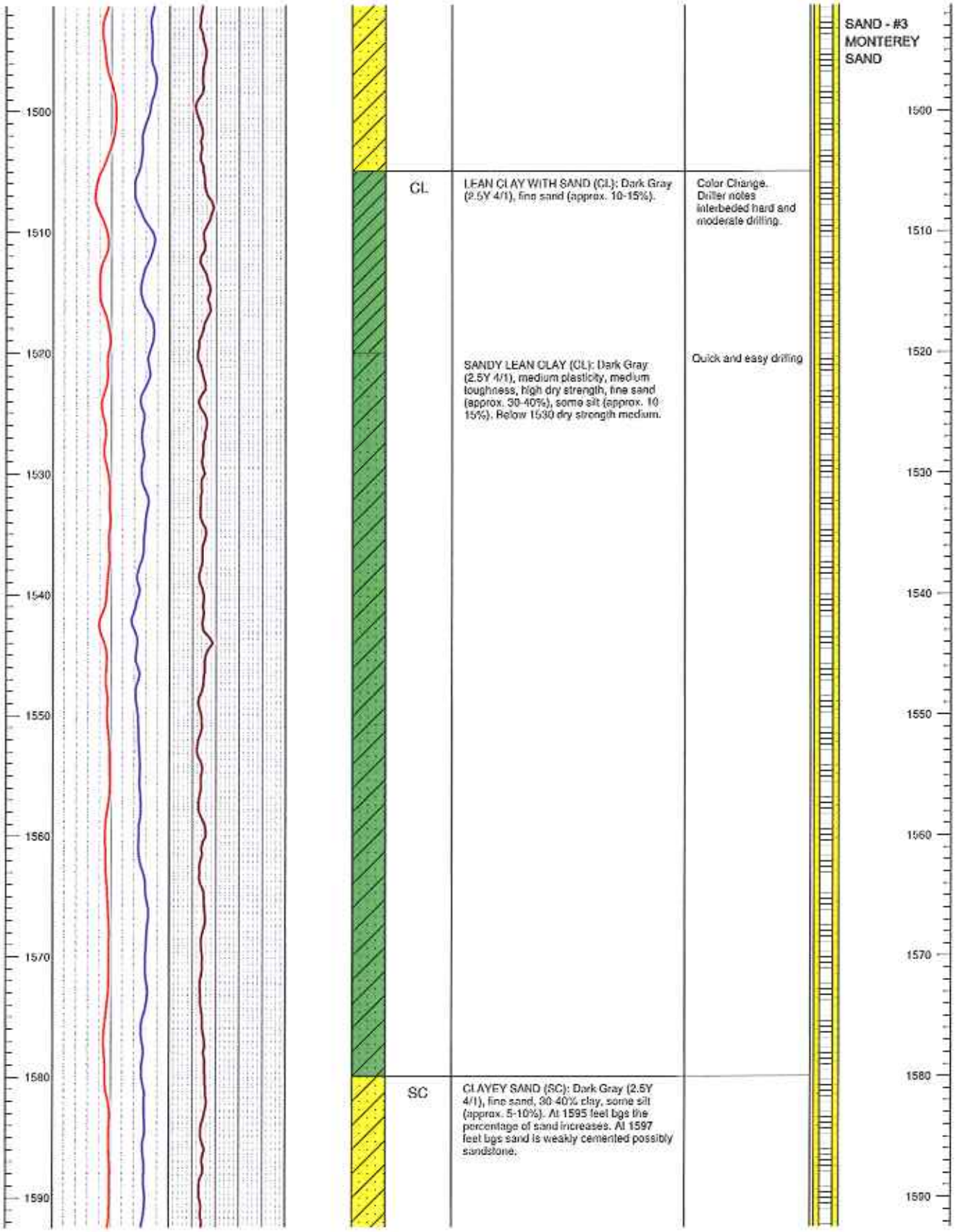
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



Draft Lithologic Logs and Well Completation Details for TW-2

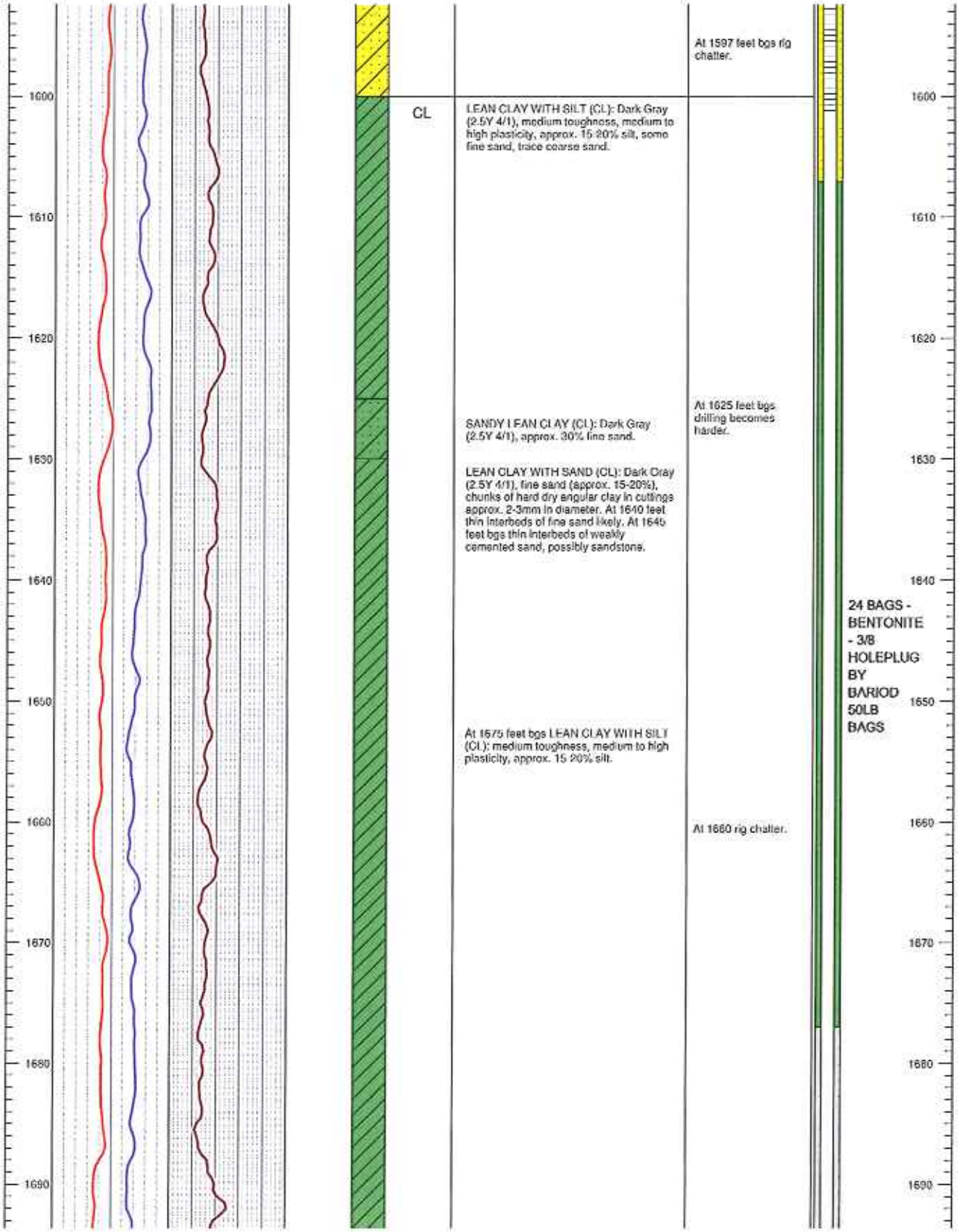
Genesis Solar, LLC
Project Number: 52004617



WorleyParsons
resources & energy

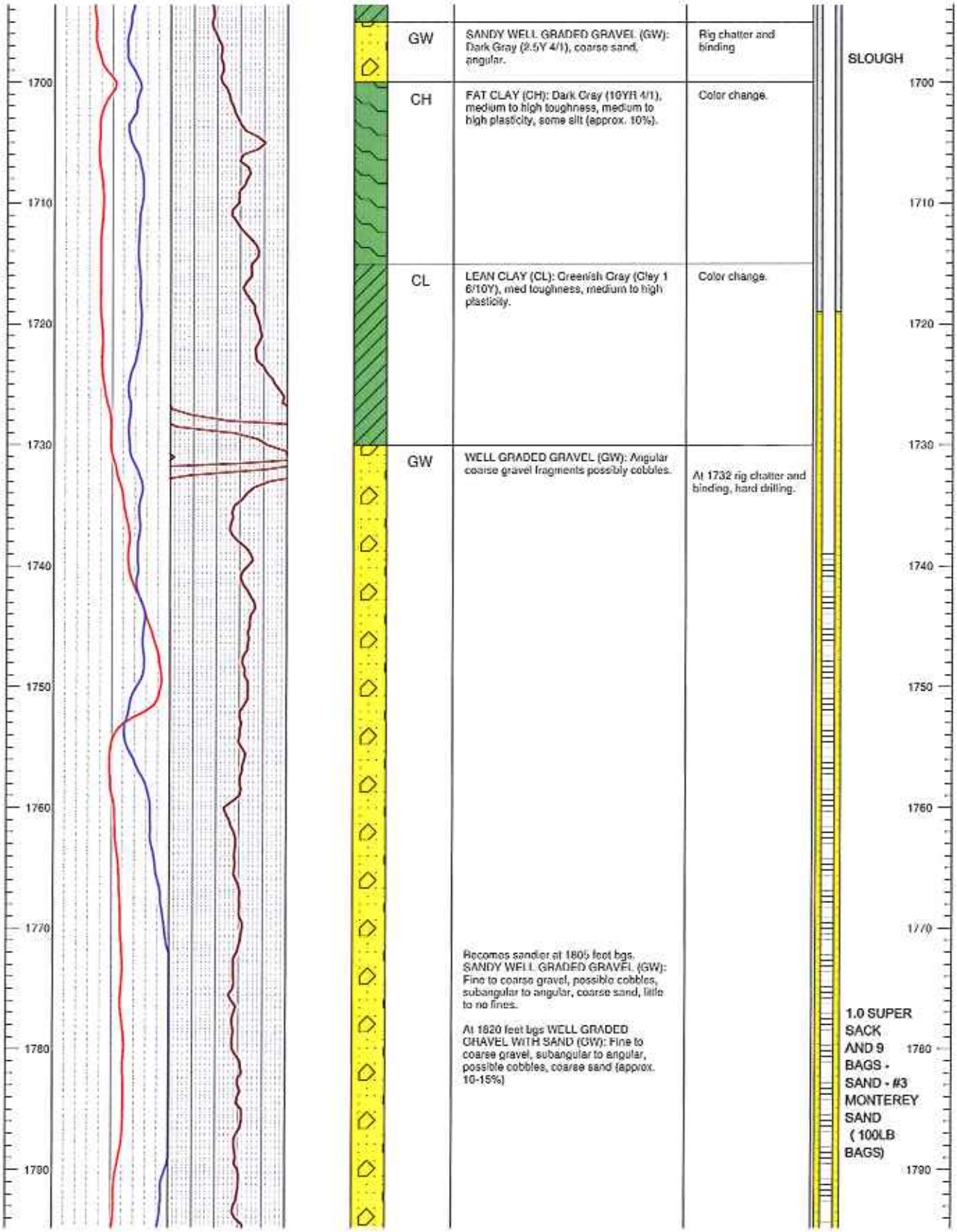
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



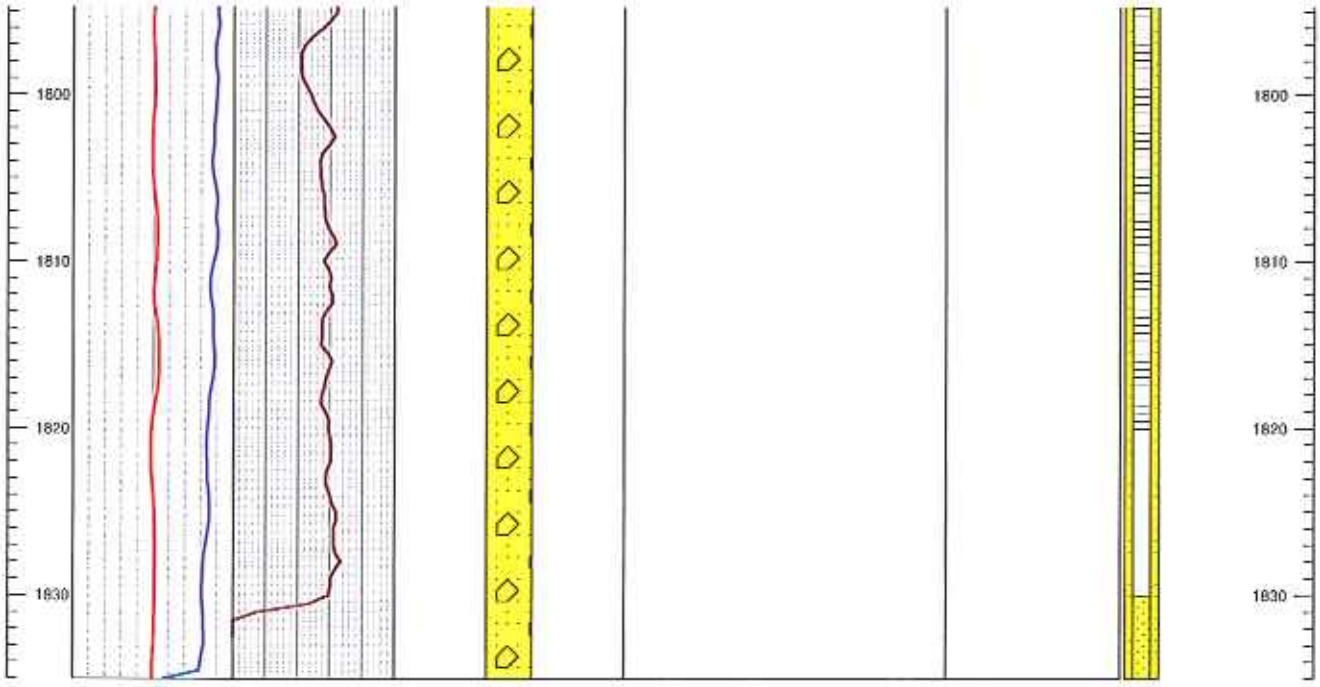
Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



Draft Lithologic Logs and Well Completation Details for TW-2

Genesis Solar, LLC
Project Number: 52004617



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *GENESIS SOLAR ENERGY PROJECT*

Docket No. 09-AFC-8

PROOF OF SERVICE
(Revised 12/22/09)

APPLICANT
Ryan O'Keefe, Vice President
Genesis Solar LLC
700 Universe Boulevard
Juno Beach, Florida 33408
Ryan.okeefe@nexteraenergy.com

Scott Busa/Project Director
Meg Russel/Project Manager
Duane McCloud/Lead Engineer
NextEra Energy
700 Universe Boulvard
Juno Beach, FL 33408
Scott.Busa@nexteraenergy.com
Meg.Russell@nexteraenergy.com
Duane.mccloud@nexteraenergy.com

Mike Pappalardo
Permitting Manager
3368 Videra Drive
Eugene, OR 97405
mike.pappalardo@nexteraenergy.com

Diane Fellman/Director
West Region
Regulatory Affairs
234 Van Ness Avenue
San Francisco, CA 94102
Diane.fellman@nexteraenergy.com

APPLICANT'S CONSULTANTS
Tricia Bernhardt/Project Manager
Tetra Tech, EC
143 Union Boulevard, Ste 1010
Lakewood, CO 80228
Tricia.bernhardt@tteci.com

Christo Nitoff, Project Engineer
Worley Parsons
2330 East Bidwell Street, Ste.150
Folsom, CA 95630
Christo.Nitoff@Worleyparsons.com

COUNSEL FOR APPLICANT
Scott Galati
Galati & Blek, LLP
455 Capitol Mall, Ste. 350
Sacramento, CA 95814
sgalati@gb-llp.com

INTERESTED AGENCIES
California-ISO
e-recipient@caiso.com

Allison Shaffer, Project Manager
Bureau of Land Management
Palm Springs South Coast
Field Office
1201 Bird Center Drive
Palm Springs, CA 92262
Allison_Shaffer@blm.gov

INTERVENORS
Tanya A. Gulesserian,
Marc D. Joseph
Adams Broadwell Joesph & Cardoza
601 Gateway Boulevard, Ste 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com

*Michael E. Boyd, President
Californians for Renewable Energy, Inc. (CARE)
5439 Soquel Drive
Soquel, CA 95073-2659
michaelboyd@sbcglobal.net

Other
*Alfredo Figueroa
424 North Carlton
Blythe, CA 92225
LaCunaDeAtzlan@aol.com

ENERGY COMMISSION
JULIA LEVIN
Commissioner and Presiding Member
jlevin@energy.state.ca.us

JAMES D. BOYD
Vice Chair and Presiding Member
jboyd@energy.state.ca.us

Kenneth Celli
Hearing Officer
kcelli@energy.state.ca.us

Mike Monasmith
Siting Project Manager
mmonasmi@energy.state.ca.us

Caryn Holmes
Staff Counsel
cholmes@energy.state.ca.us

Robin Mayer
Staff Counsel
rmayer@energy.state.ca.us

Public Adviser's Office
publicadviser@energy.state.ca.us

*indicates change

DECLARATION OF SERVICE

I, Ashley Y Garner, declare that on December 23, 2009, I served and filed copies of the attached **LOW RESOULTION SCAN OF THE BOREHOLE LOGS FOR OBS-1, OBS-2, TW-1, AND TW-2 FOR GENESIS SOLAR ENERGY PROJECT** dated **December 23, 2009**. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[http://www.energy.ca.gov/sitingcases/genesis_solar].**

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(***Check all that Apply***)

For service to all other parties:

__X__ sent electronically to all email addresses on the Proof of Service list;

__X__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

__**X**__ **sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);**

OR

____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-8
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Ashley Y Garner