Section F – Completions, Inclination Reports, Electric Log Status Reports, Cementing Reports

W-2 Oil Well Completions

Checklist

A) Form P-5
SWR 1 – Organization name to be filed and records kept.

B) Financial Assurance
SWR 78 – Fees, Bonds and Alternate Forms of Financial Security required to be filed.

C) Form W-1
SWR 5 – Application to drill, deepen or plug back.

D) Form W-2
SWR 16, 51, 4, 9 & 46 – Completion or recompletion report and log.

E) Form W-12
SWR 11 – Report of the results of inclination survey.

F) Directional Surveys
SWR 12 – Required on all directional or horizontal wells. Surveys must be sent directly to the Commission in Austin by certified or registered mail by the company that performed the survey.

G) Form W-15
SWR 13, 14 & 8 – Cementing of casing in a well.

H) Form L-1
SWR 16 – Completion or recompletion report and log.

I) GAU Letter
SWR 16 – Completion or recompletion report and log.

Additional Associated Documents

J) Form P-4
SWR 58, 1, 14, 30, 73 & 78 – Producer's certificate and authorization to transport oil.
Required only on new leases that do not have a previously assigned lease number.

K) As Drilled Plat
SWR 86 - Required only in fields that have specific rules that require acreage assignment and on all horizontal drain holes.

L) Proration Plat
SWR 40, 86 & 5 – Assignment of Acreage to Pooled Development and Proration Units
Required by the regulatory field if special field rules exist and no other acreage assignment documentation is specified or if dictated by special field rules.

M) Lease Plat

N) P-12 & Tract Plat
SWR 40 - Assignment of Acreage to Pooled Development and Proration Units
Required if the W-2 is associated with a Pooled Unit and the configuration of the pooled unit changed from the time of permitting.

O) P-15
Required by the regulatory field if dictated by special field rules.

P) Acreage List

Required by the regulatory field if dictated by special field rules.

Q) P-16
SWR 40 & 86 – Assignment of Acreage to Pooled Development and Proration Units
Required for all Horizontal wellbores or wells completed in UFT fields. Also required by the regulatory field if dictated by special field rules. Can be filed in lieu of a P-15 & Acreage List.

R) SWR 10 Approval Letter – Restriction of Production of Oil and Gas from Different Strata
Required for a well completed in multiple regulatory fields if the well is not a multiple completion or partial plug.

Questions & Answers Pertaining to Oil Well Completion Report

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-2	Is my inclination survey (Form W-12) the same as a directional survey?	A W-12 is typically associated with vertical wells. A directional survey must be filed for horizontal and directional wells to determine the path of the wellbore and true bottomhole location but can be filed in combination with or in lieu of a W-12.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	How many formations should be listed?	For wells spud prior to January 1, 2014, tops of at least 3 principal geological markers. For all wells after January 1, 2014, all known formations, in a given county, should be reported. Refer to SWR 13	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	How long should I test my well?	24 hours. Swabbing is not allowed without prior District office approval.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	What kind of plat do I file with my W-2?	Refer to individual field rules. A lease plat, proration plat or As Drilled Plat may be required.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	What is the maximum acreage that I may assign to my horizontal well?	The maximum assignable acreage is determined by SWR 86 or special field rules.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	When should a W-2 Re-test be filed?	When a characteristic of the wellbore changes and a new test is conducted because of those changes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-2	Why didn't my allowable cover my test oil production?	In order for The Commission to backdate an allowable to absorb oil produced prior to test, the Form W-2 must be received within 30 days from date of test unless the field specifies otherwise A waiver to this rule can be requested on company letterhead. The allowable can only be backdated to the completion date.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	When should a Well Record be filed?	• New drills or Recompletions with no test • Shut-in Producers waiting on a pipeline • Change of perforations (same zone without a test) • Well number changes • Wellbore work - add tubing, replace casing, set packer or any other work procedure that changes the configuration of the wellbore	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	When is the Initial Potential test due?	Within 30 days of the test date unless field rules dictate otherwise.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	What is the completion date?	Completion date should be the date the well is capable of producing. (By turning a valve or flipping a switch.)	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-2	Why did I not receive my full potential for my allowable?	The top field allowable was lower than the potential. The allowable was penalized because of a high GOR. Not assigning adequate proration acreage.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	What field is my well in?	Contact your company geologist or appropriate Railroad Commission District office.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	What type of paperwork do I file in reclassifying an oil well to a gas well?	G-1, G-5, G-10, P-4, and any requirements by special field rules.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	How do I reclass a producing well to a service well?	Complete Form W-2 front and back. In addition, a cementers affidavit is required for any remedial work specified by the injection permit.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	Who signs my W-2?	Well testers certification (signed by the person conducting the test). Operator certification (signed by the operator or authorized employee). If tested by the operator well testers certification is not required.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-2	Where do I file my W-2?	Completions should be submitted electronically using the commissions online system.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-1	We have an injection well and want to convert the well to a producing well. What is required?	If the well was not previously permitted as a producer a Form W-1 must be filed with the proper filing fee. If the well had been previously permitted as a producer, then converted to an injection well and is now converting back to a producer, no new permit will be required if the well complies with the field rule requirements.	Drilling Permits 512-463-6751
W-2	I am filing completion papers on a horizontal well. Should I use measured depths (MD) or true vertical depths (TVD)?	True vertical depth and measured depth are required for top of pay, total depth, plugback depth, and the formation tops. Measured depth is required for producing intervals.	Engineering Unit 512-463-1126
W-2	What kind of plat do I file for a horizontal well?	All plats for horizontal wells should show only "as drilled" locations. The plat should show all drain holes on a single plat, including sidetracks that have not been plugged. Sidetracks that have been plugged should be documented with a cementing report (Form W-15).	Engineering Unit 512-463-1126

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-2	I have filed my completion papers on my horizontal well with the Commission. Why have I not received my allowable?	The most common delay in receiving an allowable for horizontal wells is a missing directional survey or the lack of an "as-drilled" plat. It is the operators' responsibility to ensure the timely filing of directional surveys by Commission approved surveying companies. These surveys must come by certified mail directly from the surveying company to the Commission in Austin.	Engineering Unit 512-463-1126

Terms

A) **Allowable** — Amount of oil allowed to be produced based on potential, Gas to oil ratio (GOR) and field top.

B) **Potential** — Amount of oil a well is capable of producing within a specified 24-hour period.

C) **Geological Marker** — Specified geological signature indicating a named producing horizon. (formation).

D) **Multiple Completion** — A well that is producing from more than one formation through different sets of tubing.

E) **Perforation** — The shooting of holes in casing and cement to allow formation fluids to enter the wellbore.

F) **Test Oil** — Amount of oil produced during the process of completing the well.

G) **Directional Survey** — A survey run by a survey company to measure the deviation at a given depth and the direction of the deviation.

H) **Inclination Survey** — survey that measures the angle of the deviation of the well from the vertical.

I) **Spud Date** — The date physical drilling commences on a well.

J) **Commenced Date** — The date plugback, deepening, recompletion, or new drilling operation started.

K) **Ended Date** — The date the drilling rig is released for plug back, deepening, recompletion, or new drilling operation ended.

L) **Completion Date** — The date the well is capable of producing (by turning a valve or flipping a switch).

Oil Well Potential Test, Completion or Recompletion Report, and Log

Type or Print Only
(Online filing availabe at http://www.rrc.texas.gov)

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

Form W-2
Rev. 01/2014

API No.: **42-** | 7. RRC District No.

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

8. RRC Lease No.

1. Field Name (as per RRC Records or Wildcat) | 2. Lease Name | 9. Well No.

3. Operator's Name (exactly as shown on Form P-5, Organization Report) | RRC Operator No. | 10. County

4. Operator's Address (include street, city, state, zip code) | 11. Purpose of filing

5a. Location (section, block and survey)

A. Producers
- ☐ Initial potential
- ☐ Retest
- ☐ Reclass
- ☐ Well record only (explain in remarks)

5b. This well is located _____ miles in a _____ direction from _____, which is the nearest town in the county.

6. Well Latitude/Longitude (minimum five decimal places required): | Latitude/Longitude type:

12a. Spud date

13. If recompletion or reclass, give former field (with reservoir) & Gas ID or Oil Lease No. If multiple completion, list all reservoir names (completions in this well) and Gas ID or Oil Lease No.
☐ Recompletion or reclass ☐ Multiple completion

12b. Date of first production after rig released

Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type (oil, gas, injection/disposal, other)

B. Injection/Disposal/ Storage/Brine Mining
- ☐ Initial completion
- ☐ Reclass
- ☐ Well record only (explain in remarks)

14. Type(s) of electric or other log(s) run

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION (leave blank if filed for another purpose)

IMPORTANT: Test should be for 24 hours unless otherwise specified in field rules

15. Date of test	16. No. of hours tested	17. Production method (flowing, gas lift, jetting, pumping - size & type of pump)			18. Choke size
19. Production during test period:	Oil (BBLS)	Gas (MCF)	Water (BBLS)	Gas - Oil Ratio	Flowing Tubing Pressure (PSIG)
20. Calculated 24-Hour Rate:	Oil (BBLS)	Gas (MCF)	Water (BBLS)	Oil Gravity - API - 60°	Casing Pressure (PSIG)

21. Was swab used during this test? ☐ YES ☐ NO

22. Oil produced prior to test (new & recompleted wells):

DATA ON WELL COMPLETION

23. Type of completion
☐ New well ☐ Deepening ☐ Side track ☐ Other
☐ Re-entry ☐ Plug back ☐ Recompletion (explain in remarks)

24. Permit to Drill, Plug Back, or Deepen — DATE — PERMIT NO.
Rule 37 Exception — DATE — CASE NO.

25. Number of producing wells on this lease in this field (reservoir) including this well

26. Total number of acres in lease

Fluid Injection Permit — DATE — PERMIT NO. F -
O&G Waste Disposal Permit — DATE — PERMIT NO.
Other (explain) — DATE — PERMIT NO.

27. Date of plug back, deepening, recompletion, or drilling operations — Commenced — Ended

28. Distance to nearest well in this lease & reservoir

29. Elevation (DF, RKB, RT, GR, etc.)

30. Was directional survey made other than inclination (Form W-12)? ☐ YES ☐ NO

31. Total Depth (ft.)		32. Plug Back Depth (ft.)		33. For new drill or re-entry, surface casing depth determined by:
TVD	MD	TVD	MD	
				☐ GAU Groundwater Protection Determination — Depth: _____ Date: _____
34. Rotation time within surface casing (hours)		**35. Is Cementing Affidavit (Form W-15) attached?** ☐ YES ☐ NO		☐ SWR 13 Exception — Depth: _____

Revised July 2021

Form W-2

API No.: **42-**

36. CASING RECORD

Row	Type of Casing (conductor, surface, intermediate, conventional production, tapered production, or other)	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi-Stage Tool Depth (ft.)	Multi-Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement	Top of Cement Determined By
1											
2											
3											
4											

37. LINER RECORD

Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement	Top of Cement Determined By
1									
2									

38. TUBING RECORD

Does this well currently have tubing set? ☐ **YES** ☐ **NO**
☐ **SWR 13 Exception (attach approval)**
(if NO & no SWR 13 Exception obtained, explain in remarks)

Size (in.)	Depth Set (ft.)	Packer Depth/Type

39. PRODUCING/INJECTION/DISPOSAL INTERVAL

Indicate top and bottom measured depths of completion interval(s) or open hole

From	To

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

40. Was hydraulic fracturing treatment performed? ☐ **YES** ☐ **NO**

41. Is well equipped with a downhole actuation sleeve? ☐ **YES** ☐ **NO**
If yes, provide actuation pressure (PSIG)

42. Production casing test pressure (PSIG) prior to hydraulic fracturing treatment

43. Actual maximum pressure (PSIG) during hydraulic fracturing

44. Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR 29)? ☐ **YES** ☐ **NO**

Type of Operation (indicate acid, fracture, cement squeeze, cast iron bridge plug, retainer, etc.)	Amount and Kind of Material used	Depth Interval (ft.) From	To

45. FORMATION RECORD **(list depths of principal geological markers and formation tops, including, but not limited to, all permitted disposal/injection formations within 1/4-mile of the wellbore, productive zones, potential flow zones, and corrosive formation fluid zones)**

Principal Geological Markers and Formation Tops	Depth (ft.) TVD	MD	Indicate if formation is a permitted disposal/injection formation, productive zone, potential flow zone, and/or a zone with corrosive formation fluids	**Is formation isolated in this well? (YES/NO) (if NO, explain in remarks)**

46. Do the producing intervals of this well produce H_2S with a concentration in excess of 100 ppm (SWR 36)? ☐ **YES** ☐ **NO**

47. Is the completion being down-hole commingled (SWR 10)? ☐ **YES** ☐ **NO**

REMARKS:

OPERATOR'S CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that I prepared or supervised and directed this report, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.

Signature: Operator's representative _____ Title _____ Tel: Area Code _____ Number _____

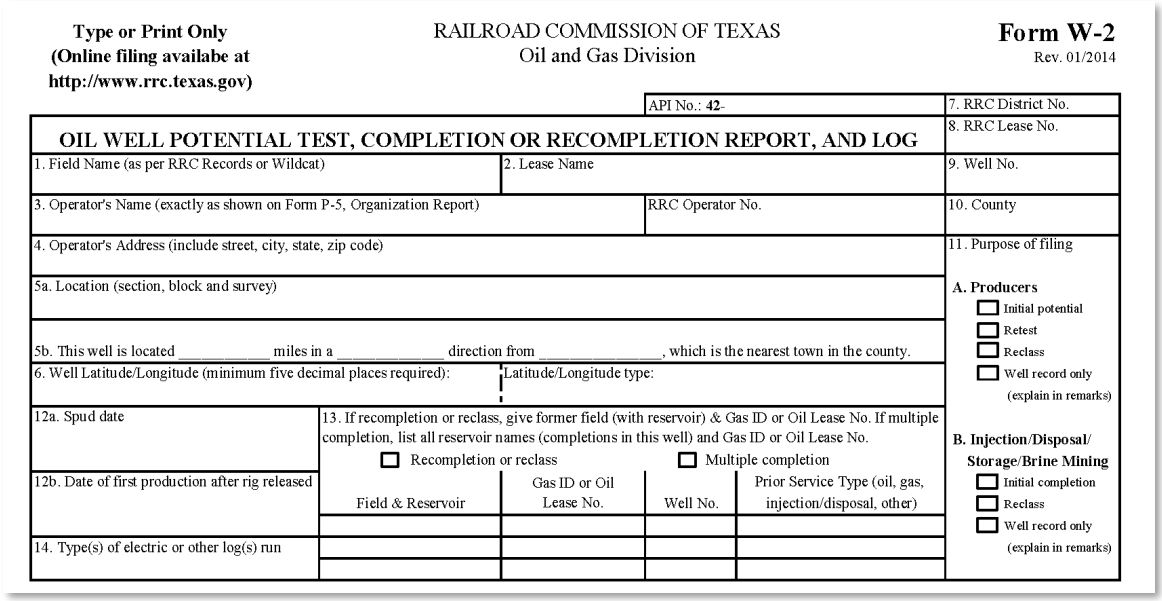
Printed Name _____ Date _____ Email (include email address *only* if you affirmatively consent to its public release) _____

Form W-2 is used with compliance of Statewide Rules 16 and 51; the deadline for the well record is 150 days from the completion: for test, it is 30 days after the test.

If and operator does not file timely, the effective date of the allowable will not be extended back than more 30 days from the submitted date.

The information on the reverse side of the Form W-2 is the basic data on the well completion, casing, cementing and formation records.

Completions should be submitted via the RRC's Online Completion System or mailed to the Well Compliance Section in Austin, TX.



Type or Print Only
(Online filing availabe at http://www.rrc.texas.gov)

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

Form W-2
Rev. 01/2014

API No.: **42**-

7. RRC District No.

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

8. RRC Lease No.

1. Field Name (as per RRC Records or Wildcat)

2. Lease Name

9. Well No.

3. Operator's Name (exactly as shown on Form P-5, Organization Report)

RRC Operator No.

10. County

4. Operator's Address (include street, city, state, zip code)

11. Purpose of filing

5a. Location (section, block and survey)

A. Producers
☐ Initial potential
☐ Retest
☐ Reclass
☐ Well record only (explain in remarks)

5b. This well is located _____ miles in a _____ direction from _____, which is the nearest town in the county.

6. Well Latitude/Longitude (minimum five decimal places required):

Latitude/Longitude type:

12a. Spud date

13. If recompletion or reclass, give former field (with reservoir) & Gas ID or Oil Lease No. If multiple completion, list all reservoir names (completions in this well) and Gas ID or Oil Lease No.

☐ Recompletion or reclass ☐ Multiple completion

B. Injection/Disposal/ Storage/Brine Mining
☐ Initial completion
☐ Reclass
☐ Well record only (explain in remarks)

12b. Date of first production after rig released

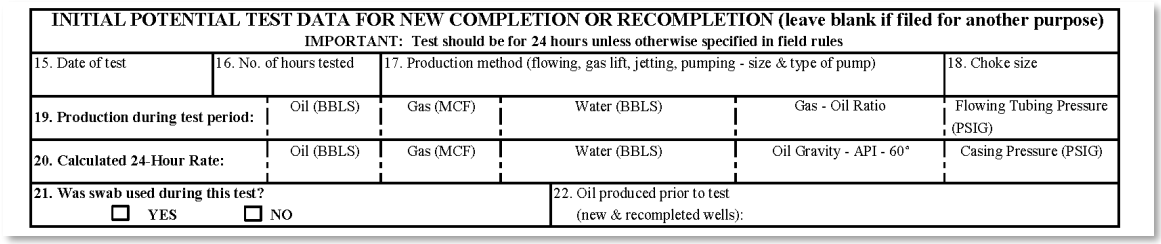
Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type (oil, gas, injection/disposal, other)

14. Type(s) of electric or other log(s) run

Items 1-14 on Form W-2 contain the basic well information and must show the field name exactly as it appears on the current oil proration schedule. If the well is completed in a horizon not currently carried on the oil proration schedule, the field name should be shown as "Wildcat". For existing leases, the lease name and lease number must be shown exactly as carried on the current oil proration schedule. The Operator Name must be identical with the Form P-5.

Item 13 must be filled out when a well is reworked from a zone.

Item 12b is the date the well has been properly equipped and could produce by the opening of a valve or the starting of an artificial lift system. For nonproducing wells, this is the date the well was properly equipped for its intended use. This is not to be confused with Item 27 which is the date the drilling was completed. Statewide Rule 14(B)(2) requires that plugging operations must be initiated within 1 year after drilling or producing operations have ceased.



INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION (leave blank if filed for another purpose) IMPORTANT: Test should be for 24 hours unless otherwise specified in field rules						
15. Date of test	16. No. of hours tested	17. Production method (flowing, gas lift, jetting, pumping - size & type of pump)				18. Choke size
19. Production during test period:	Oil (BBLS)	Gas (MCF)	Water (BBLS)		Gas - Oil Ratio	Flowing Tubing Pressure (PSIG)
20. Calculated 24-Hour Rate:	Oil (BBLS)	Gas (MCF)	Water (BBLS)		Oil Gravity - API - 60°	Casing Pressure (PSIG)
21. Was swab used during this test? ☐ YES ☐ NO			22. Oil produced prior to test (new & recompleted wells):			

Under Item 19, the amount of oil, gas and water produced during the test period, along with the calculated gas-oil ratio and the flowing tubing pressure must be reported. Normally, an allowable will not be assigned for more than the amount shown in Item 19. The oil gravity and the casing pressure should also be shown here. In the event a well is treated with oil or fractured with oil, no potential test should be conducted until such time as all this oil has been recovered.

Item 22 is applicable only to a new well or wells deepened or plugged back to different reservoirs. An allowable, not to exceed the top field allowable, will be assigned to absorb the oil produced between completion or recompletion date and the test date, provided that the test is filed with the Commissions within thirty (30) days of the date of test. For late filings, no allowable will be assigned to a well more than thirty (30) days prior to the date the Form W-2 was submitted online or received in the Austin office and never prior to the completion be shown under Item 12b.

DATA ON WELL COMPLETION			
23. Type of completion ☐ New well ☐ Deepening ☐ Side track ☐ Other ☐ Re-entry ☐ Plug back ☐ Recompletion (explain in remarks)		24. Permit to Drill, Plug Back, or Deepen	DATE PERMIT NO.
		Rule 37 Exception	DATE CASE NO.
25. Number of producing wells on this lease in this field (reservoir) including this well	26. Total number of acres in lease	Fluid Injection Permit	DATE PERMIT NO. F -
		O&G Waste Disposal Permit	DATE PERMIT NO.
27. Date of plug back, deepening, recompletion, or drilling operations Commenced Ended	28. Distance to nearest well in this lease & reservoir	Other (explain)	DATE PERMIT NO.
29. Elevation (DF, RKB, RT, GR, etc.)	**30. Was directional survey made other than inclination (Form W-12)?** ☐ YES ☐ NO		

Item 24 requests the drilling permit number, in addition to the date the permit was issued, must be shown. Rule 37 Exceptions should include approved date and case number. Fluid Injection/Waste Disposal wells should include approval date and permit number.

Item 30 requests information concerning a directional survey and should not be confused with an inclination survey. An inclination survey measures only the angle of deviation of the wellbore from the vertical. On the other hand, a directional survey, normally run by a company which specializes in this type of survey, determines not only deviation at a given depth, but the direction of deviation so that the location of the bottom of the wellbore can be accurately determined. Item 30 should be checked "No" unless a directional survey has been run.

Item 33 concerns the authority for setting the amount of surface casing. If an exception to the applicable field rules or the requirements of the Groundwater Advisory Unit has been granted, check the last box, and include the date of the exception along with the depth. The approved GW-2 should be associated with the completion packet. If the recommended amount if surface is not meet, a SWR 13 Exception should be selected with the Depth set. The approved SWR 13 Exception should be associated with the completion packet.

Form W-2 API No.: 42-

36. CASING RECORD

Row	Type of Casing (conductor, surface, intermediate, conventional production, tapered production, or other)	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi-Stage Tool Depth (ft.)	Multi-Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement	Top of Cement Determined By
1											
2											
3											
4											

37. LINER RECORD

Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement	Top of Cement Determined By
1									
2									

38. TUBING RECORD			**39. PRODUCING/INJECTION/DISPOSAL INTERVAL**
Does this well currently have tubing set? ☐ **YES** ☐ **NO** ☐ **SWR 13 Exception (attach approval)** (if NO & no SWR 13 Exception obtained, explain in remarks)			Indicate top and bottom measured depths of completion interval(s) or open hole
Size (in.)	Depth Set (ft.)	Packer Depth/Type	From To
			From To
			From To
			From To
			From To

The information required in Item 36 is fairly simple unless a mixed string of casing is run with identical diameters but with different weights per foot. In this case, show the depth at which each grade is set and the grade's weight in the weight per foot column, in the event the top of the

cement was not determined by a visual inspection, temperature survey, cement bond long, or other reliable method. Refer to SWR 13 for detailed information and the form W-15.

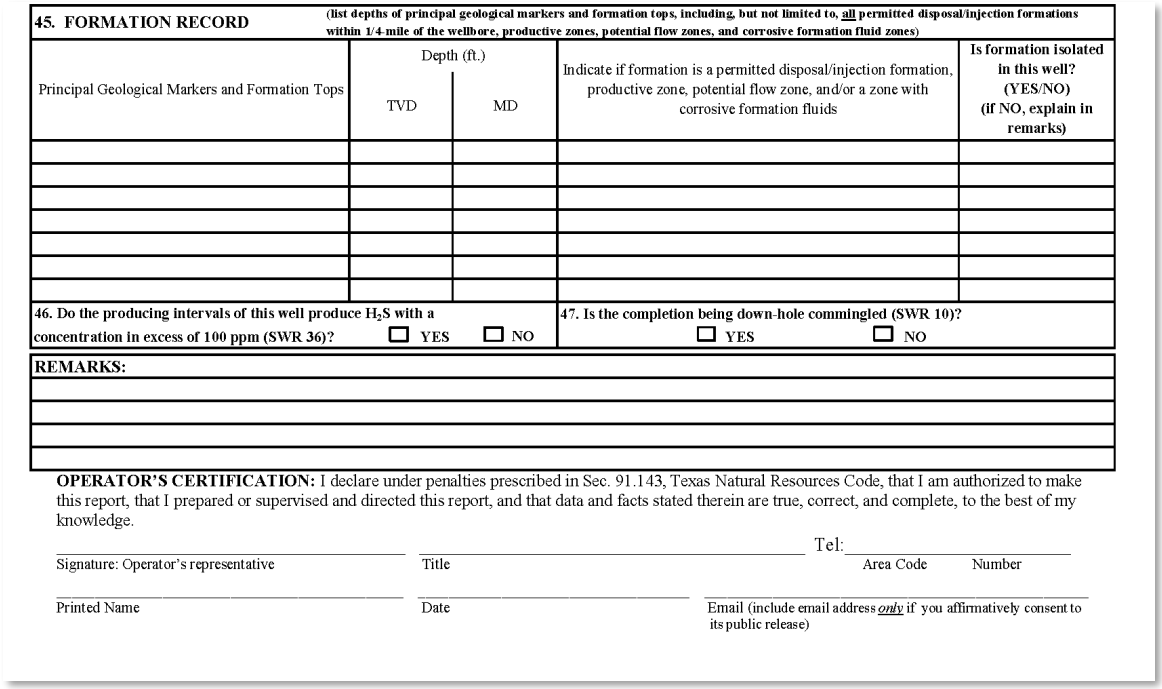
Item 38, if an exception to rule 13 month for setting tubing in flowing wells is granted; SWR 13 exception letter should be associated with the completion.

In Item 39, show the producing interval from the upper most perforation to the lower most perforation or the open hole interval for the producing zone which was tested (should include all un-isolated open perforation).

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.				
40. Was hydraulic fracturing treatment performed? ☐ YES ☐ NO	**41. Is well equipped with a downhole actuation sleeve?** ☐ YES ☐ NO If yes, provide actuation pressure (PSIG)	**42. Production casing test pressure (PSIG) prior to hydraulic fracturing treatment**	43. Actual maximum pressure (PSIG) during hydraulic fracturing	**44. Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR 29)?** ☐ YES ☐ NO

Type of Operation (indicate acid, fracture, cement squeeze, cast iron bridge plug, retainer, etc.)	Amount and Kind of Material used	Depth Interval (ft.)	
		From	To
		From	To
		From	To

Item 40 – if this well did have a hydraulic fracturing treatment performed, the chemical disclosure report should be uploaded to FracFocus. A link to this site is available thru the RRC home page under About Us, Audience Pages.



45. FORMATION RECORD (list depths of principal geological markers and formation tops, including, but not limited to, all permitted disposal/injection formations within 1/4-mile of the wellbore, productive zones, potential flow zones, and corrosive formation fluid zones)

Principal Geological Markers and Formation Tops	Depth (ft.) TVD	Depth (ft.) MD	Indicate if formation is a permitted disposal/injection formation, productive zone, potential flow zone, and/or a zone with corrosive formation fluids	Is formation isolated in this well? (YES/NO) (if NO, explain in remarks)

46. Do the producing intervals of this well produce H_2S with a concentration in excess of 100 ppm (SWR 36)? ☐ YES ☐ NO

47. Is the completion being down-hole commingled (SWR 10)? ☐ YES ☐ NO

REMARKS:

OPERATOR'S CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that I prepared or supervised and directed this report, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.

Signature: Operator's representative | Title | Tel: Area Code Number

Printed Name | Date | Email (include email address *only* if you affirmatively consent to its public release)

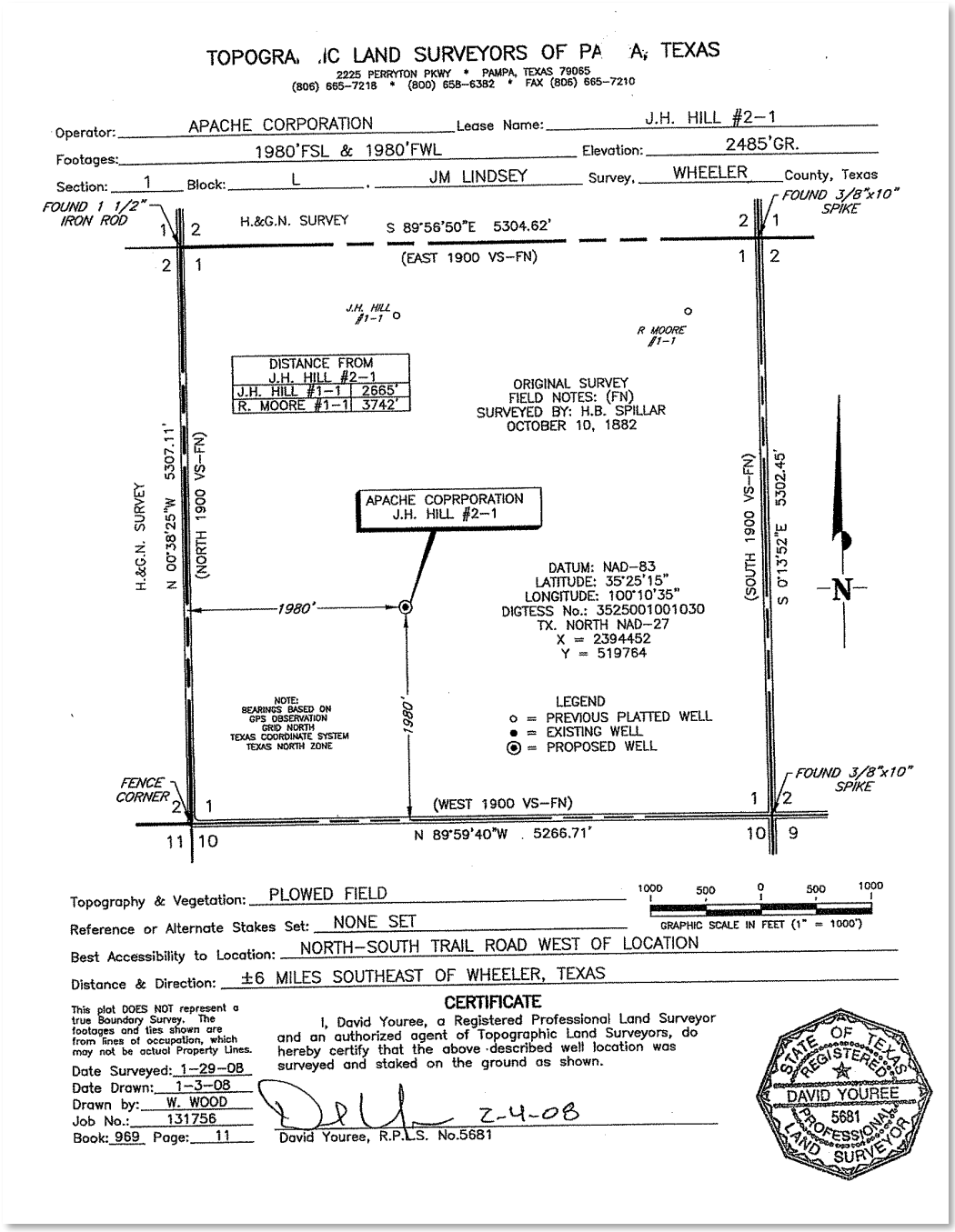
Item 45 requires all the tops of the principal geological markers penetrated by the well should be shown by name. "Potential flow zone" defined to mean a zone designated by the director or identified by the operator using available data that needs to be isolated to prevent sustained pressurization of the surface casing/intermediate casing or production casing annulus sufficient to cause damage to casing and/or cement in a well such that it presents a threat to subsurface water or oil, gas, or geothermal resources. The Commission will maintain a list of known zones by district and county that are considered potential flow zones and make this information available to all operators.

Refer to SWR 13 for detailed information.

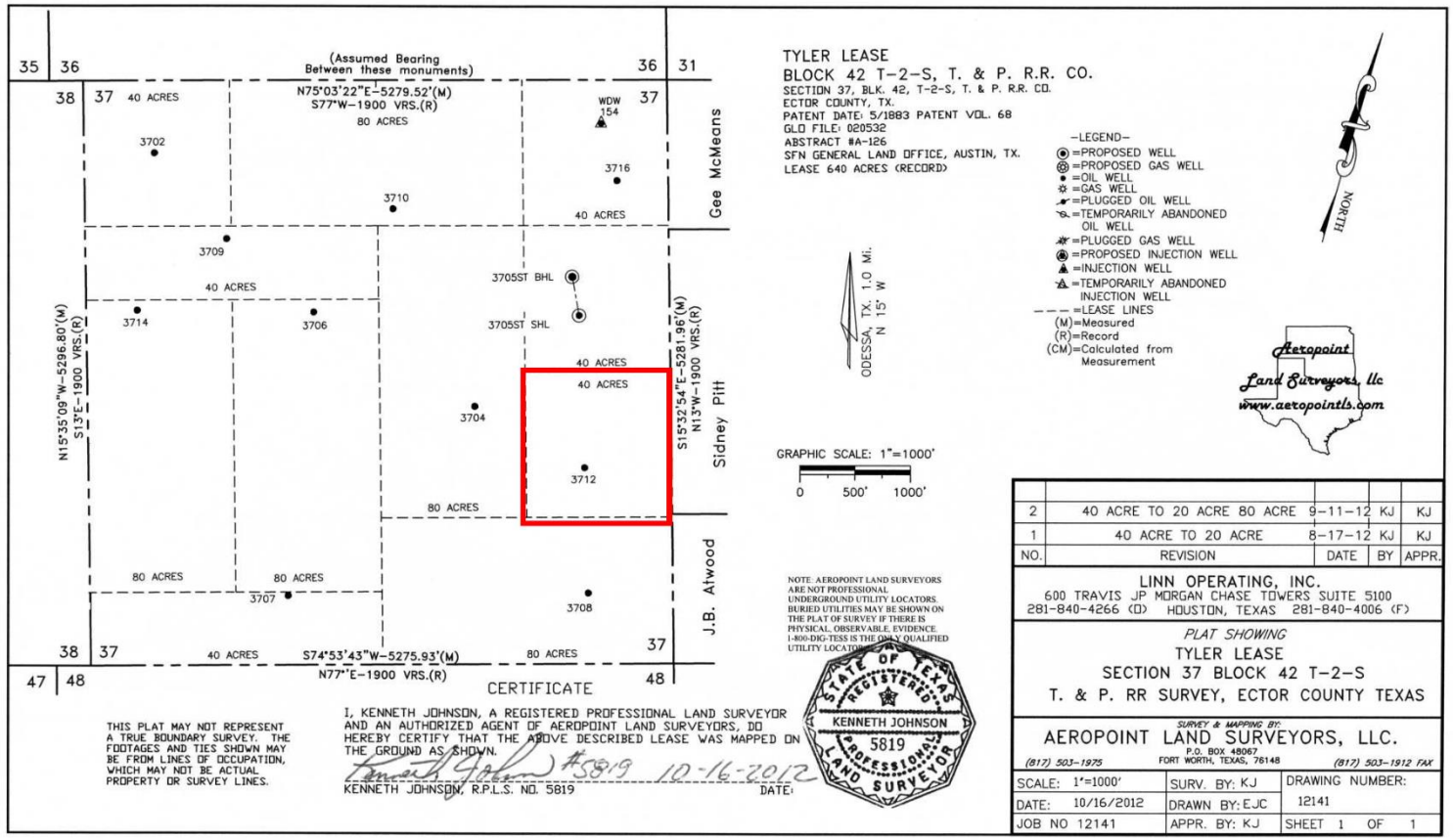
The information on the reverse side of the Form W-2 is the basic data on the well completion, casing, cementing and formation records. Under Item 25 the drilling permit number, in addition to the date the permit was issued, must be shown.

Plat

The acreage assigned to individual oil wells for the purpose of allocating allowable on production thereto shall be known as proration unit and such acreage may be claimed for each producing reservoir independently of any other producing reservoir. If a certified plat is required to be filed by special field rules, it must be of good quality outlining the proration unit, distances to lease lines, distance(s) to nearest well.



Revised July 2021



NO.	REVISION	DATE	BY	APPR.
2	40 ACRE TO 20 ACRE 80 ACRE	9-11-12	KJ	KJ
1	40 ACRE TO 20 ACRE	8-17-12	KJ	KJ

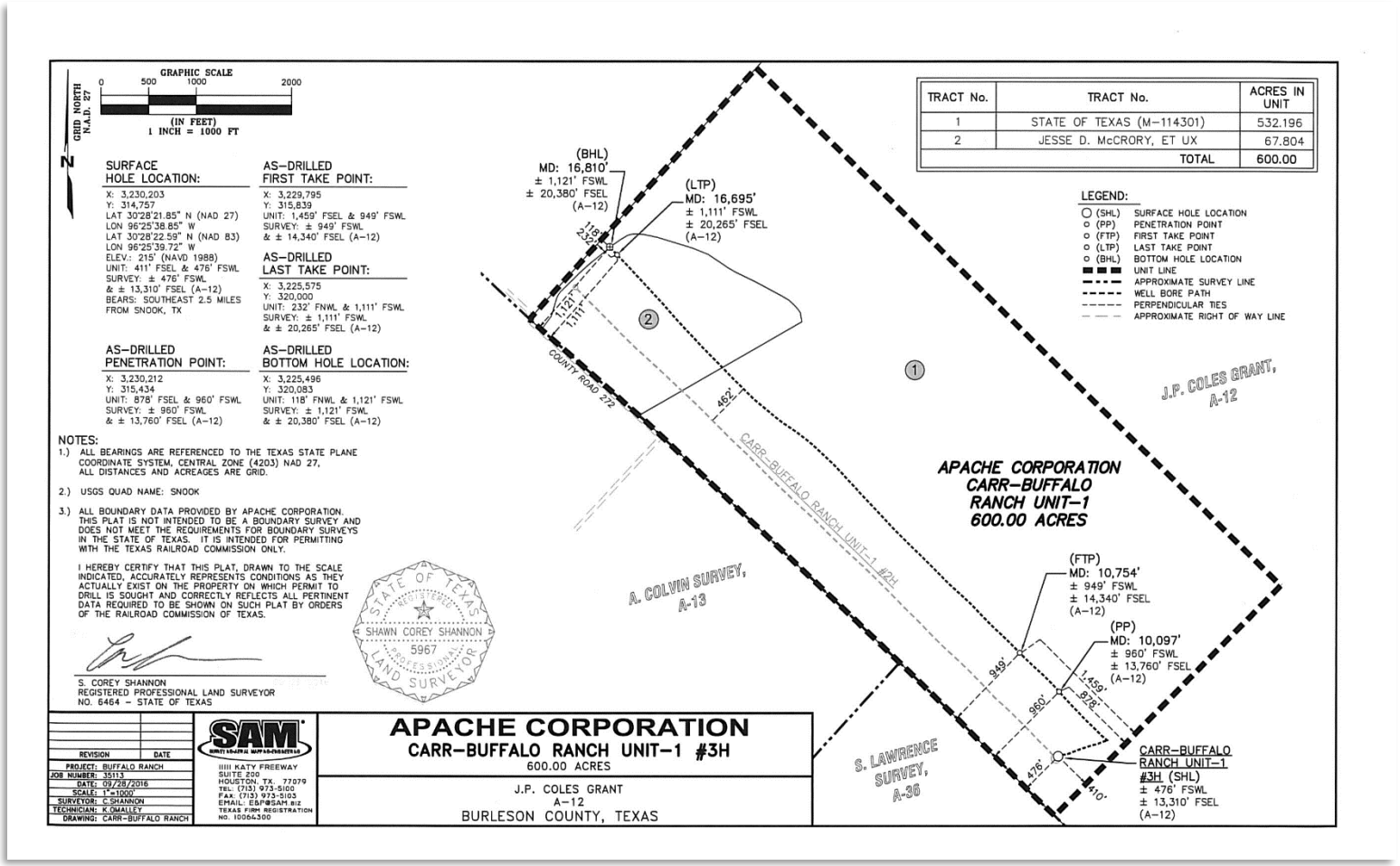
LINN OPERATING, INC.
600 TRAVIS JP MORGAN CHASE TOWERS SUITE 5100
281-840-4266 (O) HOUSTON, TEXAS 281-840-4006 (F)

PLAT SHOWING
TYLER LEASE
SECTION 37 BLOCK 42 T-2-S
T. & P. RR SURVEY, ECTOR COUNTY TEXAS

SURVEY & MAPPING BY:
AEROPOINT LAND SURVEYORS, LLC.
P.O. BOX 48067
FORT WORTH, TEXAS, 76148
(817) 503-1975 (817) 503-1912 FAX

SCALE: 1"=1000'	SURV. BY: KJ	DRAWING NUMBER:
DATE: 10/16/2012	DRAWN BY: EJC	12141
JOB NO 12141	APPR. BY: KJ	SHEET 1 OF 1

Revised July 2021



Horizontal Drainhole Calculation Procedure

For the calculation of the Horizontal Drainhole Displacement as defined in Statewide Rule 86, four numbers are needed. They are the North-South and East-West rectangular coordinates of the first take point and the last take point. Only actual data points are used. No interpolated, extrapolated, or projected points are used. These values are found on the certified directional survey which is filed by a Commission approved directional surveyor. Statewide Rule 12(b) states "each directional survey, with its accompanying certification and a certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in the case of pooling) shall be mailed by registered or certified mail direct to the Commission in Austin by the surveying company making the survey."

The correlative interval defines the penetration point. On the back of Form W-2 (example of page F-19) the measured depth of the penetration point is found as Item 48. In some fields, such as the Brookeland (Austin Chalk, 8800) the correlative interval is defined by the type of log of the discovery well, or the type of log specified in the field rules. The penetration point is defined in Statewide Rule 86 as the point where the drainhole penetrates the top of the correlative interval. The formation record section of the W-2 or G-1 is used to define the penetration point. Once the depth is determined, the closest rectangular coordinates corresponding to that depth shown on the certified directional survey are used in the calculation. The rectangular coordinates of the last surveyed points of the drainhole are also used to calculate the Horizontal Drainhole Displacement.

The following definitions can be found in section (a) of Statewide Rule 86:

A) Correlative interval--The depth interval designated by the field rules, by new field designation, or, where a correlative interval has not been designated by the commission, by other evidence submitted by the operator showing the producing interval for the field in which the horizontal drainhole is completed.
B) First take point – The take point in a horizontal drainhole well nearest to the point where the drainhole penetrates the top of the correlative interval. The first take point may be at a location different from the penetration point.
C) Horizontal drainhole--That portion of the wellbore drilled in the correlative interval, between the penetration point and the terminus.
D) Horizontal drainhole displacement--The calculated horizontal displacement of the horizontal drainhole from the first take point to the last take point.
E) Horizontal drainhole well--Any well that is developed with one or more horizontal drain holes having a horizontal drainhole displacement of at least 100 feet.
F) Last take point – The take point in a horizontal drainhole well nearest the terminus. The last take point may be at a different location from the terminus.
G) Nonperforation zone (NPZ) – A portion of a horizontal drainhole well within the field between the first take point and the last take point that the operator has intentionally designated as containing no take points pursuant to the spacing requirements in §3.37 of this title (relating to Statewide Spacing Rule).
H) Penetration point– The point where the drainhole penetrates the top of the correlative interval.
I) Record well – The single horizontal drainhole within a stacked lateral well designated by the operator as the record well for reporting purposes.

J) Stacked lateral – A horizontal drainhole well in which the following conditions are met:
    1) there are two or more horizontal drainhole wells on the same lease, pooled unit, or unitize tract at different depths within the correlative interval for the field;
    2) the horizontal drain holes are drilled from different surface locations;
    3) all take points of a stacked lateral well's horizontal drain holes are within a rectangular area the width of which is 660 feet, and the length of which is 1.2 times the distance between the first and last take point of the record well;
    4) all horizontal drain holes are tested independently and have the same classification (i.e., gas or oil). Only horizontal drain holes of the same classification are eligible to be designated as a stacked lateral well; and
    5) there is only one operator for the stacked lateral well.

K) Take point in a horizontal drainhole well – Any point along a horizontal drainhole where oil and/or gas can be produced from the correlative interval.

L) Terminus--The farthest point required to be surveyed along the horizontal drainhole from the penetration point and within the correlative interval.

M) Unconventional fracture treated (UFT) field – A field designated by the Commission under subsection (i) of this section for which horizontal well development and hydraulic fracture treatment must be used to recover resources from all or a part of the field and which may include the drilling of vertical wells along with the drilling of horizontal well.

In our example, the Heather McGinty #1 is a horizontal open-hole completion in the Giddings (Austin Chalk-3) field. According to the back of the W-2, the top of the Austin Chalk formation occurs at 10,233', and casing is set through the top to the Austin Chalk to 10,248'. The top of the completion interval is at 10,248'. The top of the Austin Chalk at 10,233' (measured depth) is the depth that will be used as the penetration point. From the directional survey (shown on page F-20) we find that the nearest actual survey point to 10,233' is at 10,211. The corresponding North-South and East-West rectangular coordinates of (46.08' W, 41.12' N) will be used in the calculation of drainhole displacement. The last actual survey point is at 13,581'. The corresponding North-South and East-West rectangular coordinates of (503.49' E, 3,045.57' S) will also be used in the calculation. The result is a horizontal drainhole displacement of 3,135' (the calculation is shown below).

Downhole Directional Surveyors, Inc.

RECORD OF SURVEY

Measured Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	Course Length (ft)	Latitude (ft)	Departure (ft)	True Vertical Depth	Vertical Section (ft)	Closure Distance (ft)	Closure Direction (Deg)	Build Rate (Dg/100')	Dogleg Severity (Dg/100')
9982.00	0.50	21.00	0.00	38.70	-45.30	9981.40	-46.98	59.58	310.51	0.00	
10151.00	0.80	329.00	169.00	40.40	-45.64	10150.39	-48.71	60.95	311.51	0.18	0.37
10211.00	**0.80**	**328.60**	**60.00**	**41.12**	**-46.08**	**10210.38**	**-49.50**	**61.75**	**311.74**	**0.00**	**0.01**
10267.00	2.20	185.60	56.00	40.38	-46.39	10266.37	-48.84	61.50	311.04	2.50	5.14
10301.00	6.20	190.70	34.00	37.93	-46.79	10300.27	-46.52	60.23	309.03	11.76	11.80
10333.00	11.70	173.30	32.00	33.00	-46.73	10331.88	-41.68	57.21	305.23	17.19	18.97
10365.00	18.50	166.30	32.00	24.84	-45.15	10362.76	-33.37	51.53	298.81	21.25	21.96
10395.00	24.70	163.00	30.00	14.21	-42.19	10390.64	-22.36	44.51	288.61	20.67	21.05
10427.00	30.50	164.00	32.00	-0.01	-37.99	10418.99	-7.59	37.99	269.99	18.15	18.18
10459.00	35.50	165.20	32.00	-16.81	-33.38	10445.81	9.79	37.37	243.27	15.63	15.76
10490.00	41.80	167.90	31.00	-35.63	-29.91	10470.01	29.13	45.88	219.05	20.32	21.03
10522.00	47.50	168.80	32.00	-57.65	-24.38	10492.77	51.61	62.59	202.92	17.81	17.92
10544.00	52.50	169.70	32.00	-81.72	-19.81	10513.33	76.11	84.09	193.63	15.63	15.77
10585.00	58.40	171.00	31.00	-106.88	-15.54	10530.91	101.61	108.01	188.27	19.03	19.34
10617.00	64.10	171.30	32.00	-134.60	-11.23	10546.29	129.63	135.06	184.77	17.81	17.83
10649.00	69.70	171.00	32.00	-163.67	-6.70	10558.84	159.02	163.80	182.35	17.50	17.52
10680.00	75.40	171.20	31.00	-192.87	-2.13	10568.13	188.55	192.88	180.63	18.39	18.40
10707.00	81.00	170.70	27.00	-218.96	2.03	10573.65	214.94	218.97	179.47	20.74	20.82
10739.00	86.00	170.40	32.00	-250.31	7.25	10577.27	246.70	250.42	178.34	15.63	15.65
10771.00	88.60	170.50	32.00	-281.83	12.55	10578.78	278.65	282.11	177.45	8.12	8.13
10803.00	89.40	170.40	32.00	-313.39	17.86	10579.34	310.62	313.89	176.74	2.50	2.52
10835.00	88.40	169.70	32.00	-334.90	23.38	10579.95	342.60	345.69	176.12	-3.13	3.81
10867.00	89.10	169.60	32.00	-376.37	29.13	10580.65	374.59	377.49	175.57	2.19	2.21
10899.00	89.00	169.70	32.00	-407.84	34.83	10581.18	406.58	409.33	175.11	-0.31	0.44
10930.00	89.00	170.60	31.00	-438.38	40.18	10581.72	437.56	440.22	174.76	0.00	2.90
10962.00	89.00	170.80	32.00	-469.96	45.35	10582.28	469.53	472.14	174.49	0.00	0.62
10994.00	89.40	171.20	32.00	-501.56	50.36	10582.81	501.49	504.08	174.27	0.31	1.29
13296.00	89.00	166.10	32.00	-2769.70	432.56	10535.88	2800.25	2803.28	171.12	1.56	1.68
13328.00	89.20	166.10	32.00	-2800.76	440.25	10636.38	2832.22	2835.15	171.07	0.63	0.62
13359.00	88.30	165.30	31.00	-2830.76	447.91	10637.06	2863.17	2866.01	171.01	-2.90	3.88
13388.00	88.40	165.20	29.00	-2858.83	455.29	10637.89	2892.12	2894.85	170.95	0.34	0.49
13422.00	88.20	164.30	34.00	-2891.61	464.22	10638.90	2926.03	2928.64	170.88	-0.59	2.71
13454.00	88.20	163.50	32.00	-2922.34	473.09	10639.91	2957.91	2960.39	170.80	0.00	2.50
13486.00	88.80	164.60	32.00	-2953.10	481.88	10640.75	2989.81	2992.16	170.73	1.87	3.91
13518.00	88.90	166.10	32.00	-2984.05	489.98	10641.39	3021.75	3024.01	170.68	0.31	4.70
13459.00	89.10	167.60	31.00	-3014.23	497.03	10641.93	3052.73	3054.94	170.64	0.65	4.88
13581.00	89.30	169.10	32.00	**-3045.57**	**503.49**	10642.38	3084.73	3086.91	170.64	0.63	4.73
	The following is a projection to TD										
13640.00	89.30	169.10	59.00	-3103.50	514.64	10643.10	3143.72	3145.88	170.58	0.00	0.00

Determination of Horizontal Drainhole Displacement

$$HDD = \sqrt{(N_2 - N_1)^2 + (E_2 - E_1)^2}$$

Where: HDD = Horizontal Drainhole Displacement

N_1 = Closest North-South rectangular component to the penetration point

N_2 = Last surveyed North-South rectangular component (terminus)

E_1 = Closest East-West rectangular component to the penetration point

E_2 = Last surveyed East-West rectangular component (terminus)

Only actual surveyed data is used. No interpolated or extrapolated data is used in the HDD determination.

Example: N_1 = 41.12 feet

N_2 = -3,045.47 feet

E_1 = 46.08 feet

E_2 = 503.49 feet

$$HDD = \sqrt{(-3{,}045.47 - 41.12)^2 + (503.49 - 46.08)^2}$$

$$HDD = \sqrt{(-3{,}085.85)^2 + (549.57)^2}$$

$$HDD = \sqrt{9{,}522{,}470.22 + 302{,}027.18}$$

$$HDD = \sqrt{9{,}829{,}682.34}$$

HDD = 3,135 feet

Determination of Effective Horizontal Drainhole Displacement for Multiple Horizontal Drainhole Systems

There are many fields that allow for multiple horizontal drainhole systems, and the following provides a method for calculating an effective horizontal drainhole displacement for that system. For most of these fields and for fields where Statewide Rule 86 controls multiple drain holes, the effective horizontal drainhole displacement is the horizontal drainhole displacement of the longest drainhole plus the projection of the longest opposing drainhole on a line that extends in a 180-degree direction from the longest drainhole. This procedure could be done graphically, but by using vectors the effective horizontal drainhole displacement can be determined with far greater accuracy. The equations that will be used are as follows:

$a_1 = E_{t1} - E_{p1}$ $\quad b_1 = N_{t1} - N_{p1}$ $\quad a_2 = E_{t2} - E_{p2}$ $\quad b_1 = N_{t2} - N_{p2}$

$\vec{V}_1 = a_1\hat{\imath} + b_1\hat{\jmath}$ $\quad \vec{V}_2 = a_2\hat{\imath} + b_2\hat{\jmath}$ $\quad v_1 = \sqrt{{a_1}^2 + {b_1}^2}$ $\quad v_2 = \sqrt{{a_2}^2 + {b_2}^2}$

$v_p = \frac{\vec{V}_1 \cdot \vec{V}_2}{v_1}$ $\quad v_p = \frac{a_1 a_2 + b_1 b_2}{\sqrt{{a_1}^2 + {b_1}^2}}$ $\quad HDD_{eff} = |v_p| + v_1$

Where: HDD_{eff} = Effective Horizontal Drainhole Displacement for a multiple drainhole system

- N_{pl} = Closest North-South rectangular component to the penetration point of the longest drainhole
- N_{tl} = Last surveyed North-South rectangular component (terminus) of the longest drainhole
- E_{pl} = Closest East-West rectangular component to the penetration point of the longest drainhole
- E_{tl} = Last surveyed East-West rectangular component (terminus) of the longest drainhole
- N_{p2} = Closest North-South rectangular component to the penetration point of the opposing drainhole
- N_{t2} = Last surveyed North-South rectangular component (terminus) of the opposing drainhole
- E_{p2} = Closest East-West rectangular component to the penetration point of the opposing drainhole
- E_{t2} = Last surveyed East-West rectangular component (terminus) of the opposing drainhole
- a_1 = East-West component of longest drainhole vector
- b_1 = North-South component of the longest drainhole vector
- a_2 = East-West component of the opposing drainhole vector
- b_2 = North-South component of the opposing drainhole vector
- v_1 = magnitude of longest drainhole vector

v_2 = magnitude of opposing drainhole vector

vp = magnitude of the projection of the opposing drainhole vector onto the longest drainhole vector

V_1 = vector of the longest drainhole

V_2 = vector of the opposing drainhole

Only actual surveyed data is used. No interpolated or extrapolated data is used in the HDD determination.

Example:	N_{pl}	=	40.38 feet	N_{p2}	=	80.65 feet
	N_{tl}	=	3,045.47 feet	N_{t2}	=	2,298.53 feet
	E_{p1}	=	46.39 feet	E_{p2}	=	75.42 feet
	E_{t1}	=	503.49 feet	E_{t2}	=	-1397.27 feet

$$\overrightarrow{V_1} = a_1\hat{\imath} + b_1\hat{\jmath} = (503.49 - {}^{-}46.39)\hat{\imath} + ({}^{-}3{,}045.47 - 40.38)\hat{\jmath}$$

$$\overrightarrow{V_1} = a_1\hat{\imath} + b_1\hat{\jmath} = 549.88\hat{\imath} - 3{,}085.85\hat{\jmath}$$

$$\overrightarrow{V_2} = a_2\hat{\imath} + b_2\hat{\jmath} = ({}^{-}1{,}397.27 - {}^{-}75.42)\hat{\imath} + (2{,}298.53 - 80.65)\hat{\jmath}$$

$$\overrightarrow{V_2} = a_2\hat{\imath} + b_2\hat{\jmath} = {}^{-}\,1{,}321.85\hat{\imath} + 2{,}217.88\hat{\jmath}$$

$$v_1 = \sqrt{{a_1}^2 + {b_1}^2} = \sqrt{549.88^2 + {}^{-}3{,}085.85^2} = 3{,}134.46$$

$$v_p = \frac{\vec{V}_1 \cdot \vec{V}_2}{v_1} = \frac{a_1a_2 + b_1b_2}{\sqrt{{a_1}^2 + {b_1}^2}}$$

$$v_p = \frac{549.88\ x\ {}^{-}1{,}321.85 + {}^{-}3{,}085.85\ x\ 2{,}217.88}{3{,}134.46} = -2{,}415.38$$

$$HDD_{eff} = |v_p| + v_1 = |-2{,}415.38| + 3{,}134.46$$

$$HDD_{eff} = 5{,}549.84 \approx 5{,}550\ feet$$

Stacked Laterals for Gas & Oil Leases

The **First** well in a **Stacked Lateral** is set up in the same manner as any regular producing wellbore. There should **NOT** be SL in the well number.

The **Second** well in a **Stacked Lateral** requires an approved drilling permit with SL associated with the well number (1SL). On page 5 of the completion (G-1/W-2) under remarks, references should be made that this wellbore is to be the 1st Stacked Lateral with API# and/or DP# assigned to the original reporting wellbore. This will clearly allow RRC staff to identify these and process correctly.

Any additional Stacked Laterals associated with the reporting wellbore requires an approved drilling permit with SL associated with the well number (2SL, 3SL, etc.). On page 5 of the completion (G-1/W-2) under remarks, references should be made that this wellbore is to be the 2nd, 3rd, etc. **Stacked Lateral** with API# and/or DP# assigned to the original reporting wellbore. This will clearly allow RRC staff to identify these and process correctly.

A combined W-10 for oil wells and G-10 for gas wells for all producing wells associated with "Stacked Laterals" is required to be filed under the reporting wellbore, do **NOT** file individual test.

All production is to be combined and reported to first ID assigned.

Overall classification of the stacked laterals will be based on the combined status test and/or reported production (GOR).

G-1 Gas Well Completions

Checklist

A) Form P-5
SWR 1 – Organization name to be filed and records kept.

B) Financial Assurance
SWR 78 – Fees, Bonds and Alternate Forms of Financial Security required to be filed.

C) Form W-1
SWR 5 – Application to drill, deepen or plug back.

D) Form G-1
SWR 16, 28 & 31 – Gas well back pressure test. Completion or recompletion report and log

E) Form G-5
SWR 53 – Gas well classification report.

F) Form G-10
SWR 28, 53 & 55 – Gas well status report.

G) Form W-12
SWR 11 – Report of the results of inclination survey.

H) Directional Surveys
SWR 12 – Required on all directional or horizontal wells. Surveys must be sent directly to the Commission in Austin by certified or registered mail by the company that performed the survey.

I) Form W-15
SWR 13, 14 & 8 – Cementing of casing in a well.

J) Form L-1
SWR 16 – Log, completion or plugging report.

Additional Associated Documents

K) Form PR
SWR 27 & 54 - Producer's monthly report (commencing with completion date for new drills and recompletions and test date for reclasses).

L) Form P-4
SWR 58 – Producer's certificate and authorization to transport oil.
Required - Only on new leases that do not have a previously assigned lease number.

M) Form P-12
SWR 40 - Assignment of acreage to pooled development and proration units.

N) Form P-15
Statement of productivity when required by field rules.

O) Acreage Plat
SWR 86 - Required only in fields that have specific rules that require acreage assignment and on all horizontal drain holes.
Required – Certified proration plat.

Questions & Answers Pertaining to Gas Well Completion Report

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
G-1	What type of test am I required to run?	1) Four-point test in accordance with Back Pressure Test Manual. 2) 72-hour one point test at the option of the operator.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	Do I have to obtain a test if the well is not connected to the sales line?	Yes. A one-point test is required to prove the well is a gas well, and to place the well on the proration schedule.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	Is there a difference between the completion date and the completed date?	Yes, the completion date is the date the well is capable of production by turning of a valve (not necessarily connected to a sales line). The completed date is the date the wellbore has been drilled to total depth and plugged, cased, and cemented, or workover operations are completed.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	After I complete the well, how soon do I have to file my G-1?	Within 90 days of completion. In normal situations this is 90 days from completion date on the G-1. If completion operations are interrupted or suspended for 150 days or more, a completion report for well record only, should be filed, even if the well is not capable of production.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	How do I fill out the form when a multiple completion is worked over due to a single completion?	List Zones that were worked over in the workover or reclass section. Show work performed under the Acid, Fracture, Cement Squeeze, cast iron bridge plug section.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
G-1	I have filed my completion papers on my well. Why have I not received my allowable?	The most common delay in receiving an allowable is a missing form. Please check the Gas supplement or Proration schedule by Field.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	Why is the information I entered on page 2 of my G-1 Red?	Some of the information on page 2 of the G-1 is validated against the drilling permit. If this information is not identical, it turns Red. If the information entered is correct, place a Remark on page 5 of the G-1 indicating the change(s).	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	How do I change a well number on a Gas well?	The well number change should be listed in the Remarks section on page 5 of the G-1.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	Where do I list pertinent information, I would like the commission to know regarding my well?	This information should be listed in the Remarks section on page 5 of the G-1.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	Do I need to answer all the questions on the G-1?	Yes. The form should be completed in its entirety.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	How many formations should be listed?	For wells spud prior to January 1, 2014, tops of at least 3 principal geological markers. For all wells after January 1, 2014, all known formations, in a given county, should be reported. Refer to SWR 13	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	What kind of Plat do I file with my G-1?	Refer to individual field rules. A lease plat, proration plat or As Drilled Plat may be required.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	When should a G-1 Retest be filed?	When a characteristic of the wellbore changes and a new test is conducted because of those changes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
G-1	We have an injection well and want to convert the well to a producing well. What is required?	If the well was not previously permitted as a producer a Form W-1 must be filed with the proper filing fee. If the well had been previously permitted as a producer, then converted to an injection well and is now converting back to a producer, no new permit will be required if the well complies with the field rule requirements.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	I am filing completion papers on a horizontal well. Should I use measured depths (MD) or true vertical depths (TVD)?	True vertical depth and measured depth are required for top of pay total depth, plugback depth and the formation tops. Measured depth is required for producing intervals.	Engineering Unit 512-463-1126
G-1	What kind of plat do I file for a horizontal well?	All plats for horizontal wells should show only "as drilled" locations. (Refer to SWR 86 (f) (4)). The plat should show all drain holes on a single plat, including sidetracks that have not been plugged should be documented with a cementing report (Form W-15).	Engineering Unit 512-463-1126
G-1	I have filed my completion papers on my horizontal well with the Commission. Why have I not received my allowable?	The most common delay in receiving an allowable for horizontal wells is a missing directional survey or the lack of an "as-drilled" plat. It is the operator's responsibility to ensure the timely filing of directional surveys by Commission approved surveying companies. These surveys must come by certified mail directly from the surveying company to the Commission in Austin.	Engineering Unit 512-463-1126

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
G-1	What is the maximum acreage that I may assign to my horizontal well?	The maximum assignable acreage is determined by field rules or Statewide Rule 86 for fields with no specific horizontal field rules. In both cases the acreage is dependent upon the horizontal drainhole displacement. This calculation procedure is shown in this section, on pages F-22 thru F-24.	Engineering Unit 512-463-1126
G-1	When should a Well Record be filed?	• New drills or Recompletions with no test • Shut-in Producers waiting on a pipeline • Change of perforations (same zone without a test) • Well number changes • Wellbore work - add tubing, replace casing, set packer or any other work procedure that changes the configuration of the wellbore	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	When should a G-1 Retest be filed?	When a characteristic of the wellbore changes and a new test is conducted because of those changes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-1	We have an injection well and want to convert the well to a producing well. What is required?	If the well was not previously permitted as a producer a Form W-1 must be filed with the proper filing fee. If the well had been previously permitted as a producer, then converted to an injection well and is now converting back to a producer, no new permit will be required if the well complies with the field rule requirements.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Terms

A) **Spud Date** — The date physical drilling commences on a well.

B) **Completion or Recompletion Date** – The date the well is capable of producing by turning of a valve or flipping of a switch.

C) **Commenced Date** — The date the well is spudded, or for recompletions, the date workover operations are begun.

D) **Ended Date** — The date the wellbore has been drilled to total depth and:
   1) plugged,
   2) cased and cemented, or
   3) workover operations are completed.

E) **Allowable** — Amount of oil allowed to be produced based on potential, Gas to oil ratio (GOR) and field top.

F) **Multiple Completion** — A well that is producing from more than one formation through different sets of tubing.

G) **Directional Survey** — A survey run by a survey company to measure the deviation at a given depth and the direction of the deviation.

H) **Inclination Survey** — survey that measures the angle of the deviation of the well from the vertical.

I) **Sales Line** – Transport line used by 1st purchaser.

J) **Dry Gas** – Natural gas which does not contain liquid hydrocarbons.

K) **Wet Gas** – Natural gas containing liquid hydrocarbons in solution.

G-1 Gas Well Back Pressure Test, Completion or Recompletion Report, and Log

Required by SWR 16, 28, and 31

A) Refer to field rules prior to submitting a Form G-1.
B) To be filed via RRC online completions system upon completion of any gas well, workover, reclassification, or any service wells to be carried on gas schedule.
C) Statewide Rule 16 requires that log and completion report be filed on Form G-1 within thirty days after the completion of a gas well or within 90 days after the date on which the drilling operation in completed, whichever is earlier.
D) Optional one-point back pressure tests of gas well may be reported on Form G-1. The test must be a stabilized rate and at least 72 hours duration.
E) G-10 test should be run a minimum of 72 hours after a four-point test.

Type or Print Only
(Online filing availabe at http://www.rrc.texas.gov)

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

Form G-1
Rev. 01/2014

API No.: **42**-

7. RRC District No.

GAS WELL BACK PRESSURE TEST, COMPLETION OR RECOMPLETION REPORT, AND LOG

8. RRC Gas ID No.

1. Field Name (as per RRC Records or Wildcat)

2. Lease Name

9. Well No.

3. Operator's Name (exactly as shown on Form P-5, Organization Report)

RRC Operator No.

10. County

4. Operator's Address (include street, city, state, zip code)

11. Purpose of filing

A. Producers
- ☐ Initial potential
- ☐ Retest
- ☐ Reclass
- ☐ Well record only (explain in remarks)

5a. Location (section, block and survey)

5b. This well is located _____ miles in a _____ direction from _____, which is the nearest town in the county.

6. Well Latitude/Longitude (minimum five decimal places required):

Latitude/Longitude type:

12a. Spud date

12b. Date of first production after rig released

13. If recompletion or reclass, give former field (with reservoir) & Gas ID or Oil Lease No. If multiple completion, list all reservoir names (completions in this well) and Gas ID or Oil Lease No.

☐ Recompletion or reclass ☐ Multiple completion

Field & Reservoir	Gas ID or Oil Lease No.	Well No.	Prior Service Type (oil, gas, injection/disposal, other)

14. Type(s) of electric or other log(s) run

B. Injection/Disposal/ Storage/Brine Mining
- ☐ Initial completion
- ☐ Reclass
- ☐ Well record only (explain in remarks)

GAS MEASUREMENT DATA

15. Date of test

16. Gas measurement method (check all that apply)
☐ Orifice meter ☐ Flange taps ☐ Positive choke ☐ Pitot tube ☐ Other
☐ Mass flow meter ☐ Pipe taps ☐ Orifice vent meter ☐ Critical flow prover (explain in remarks)

17. Gas production during test MCF

Run No.	Line Size	Orif. or Choke Size (in.)	24 hr. Coeff. Orif. or Choke (in.)	Static P_m or Choke (in.)	Diff. (^h_w)	Flow Temp. (°F)	Temp. (F_{tf})	Gravity (F_g)	Compress (F_{pv})	Volume (MCF/day)
1										
2										
3										
4										

Was the well preflowed for 48 hours? ☐ YES ☐ NO

FIELD DATA AND PRESSURE CALCULATIONS

18. Gravity (dry gas)	19. Gravity (liquid hydrocarbon) Deg. API	20. Gas-Liquid Hydro Ratio CF/Bbl	21. Gravity (mixture) G_{mix}=	22.Avg. shut-in temp. °F	23. Bottom hole temp. °F@ (Depth)

Run No.	Time of Run (Min.)	Choke Size (in.)	Wellhead Press. P_W (PSIA)	Wellhead Flow Temp. (°F)	Run No.	Time of Run (Min.)	Choke Size (in.)	Wellhead Press. P_W (PSIA)	Wellhead Flow Temp. (°F)
Shut-In					3				
1					4				
2					5				

DATA ON WELL COMPLETION

24. Type of completion
☐ New well ☐ Deepening ☐ Side track ☐ Other
☐ Re-entry ☐ Plug back ☐ Recompletion (explain in remarks)

25. Permit to Drill, Plug Back, or Deepen — DATE — PERMIT NO.

Rule 37 Exception — DATE — CASE NO.

26. Number of producing wells on this lease in this field (reservoir) including this well

27. Total number of acres in lease

Fluid Injection Permit — DATE — PERMIT NO. F-

O&G Waste Disposal Permit — DATE — PERMIT NO.

28. Date of plug back, deepening, recompletion, or drilling operations — Commenced — Ended

29. Distance to nearest well in this lease & reservoir

Other (explain) — DATE — PERMIT NO.

30. Elevation (DF, RKB, RT, GR, etc.)

31. Was directional survey made other than inclination (Form W-12)? ☐ YES ☐ NO

32. Total Depth (ft.) TVD	32. Total Depth (ft.) MD	33. Plug Back Depth (ft.) TVD	33. Plug Back Depth (ft.) MD

34. For new drill or re-entry, surface casing depth determined by:
☐ GAU Groundwater Protection Determination — Depth: _____ Date: _____
☐ SWR 13 Exception — Depth: _____

35. Rotation time within surface casing (hours)

36. Is Cementing Affidavit (Form W-15) attached? ☐ YES ☐ NO

Form G-1

API No.: 42-

37. CASING RECORD

Row	Type of Casing (conductor, surface, intermediate, conventional production, tapered production or other)	Casing Size (in.)	Hole Size (in.)	Setting Depth (ft.)	Multi-Stage Tool Depth (ft.)	Multi-Stage Shoe Depth (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement	Top of Cement Determined By
1											
2											
3											
4											

38. LINER RECORD

Row	Liner Size (in.)	Hole Size (in.)	Liner Top (ft.)	Liner Bottom (ft.)	Cement Class	Cement Amount (sacks)	Slurry Volume (cu. ft.)	Top of Cement	Top of Cement Determined by
1									
2									

39. TUBING RECORD

Does this well currently have tubing set? ☐ YES ☐ NO

Size (in.)	Depth Set (ft.)	Packer Depth/Type

40. PRODUCING/INJECTION/DISPOSAL INTERVAL

Indicate top and bottom measured depths of completion interval(s) or open hole

From	To

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

41. Was hydraulic fracturing treatment performed? ☐ YES ☐ NO	**42. Is well equipped with a downhole actuation sleeve?** ☐ YES ☐ NO If yes, provide actuation pressure (PSIG)	**43. Production casing test pressure (PSIG) prior to hydraulic fracturing treatment**	44. Actual maximum pressure (PSIG) during hydraulic fracturing	**45. Has the hydraulic fracturing fluid disclosure been reported to FracFocus disclosure registry (SWR 29)?** ☐ YES ☐ NO

Type of Operation (indicate acid, fracture, cement squeeze, cast iron bridge plug, retainer, etc.)	Amount and Kind of Material Used	Depth Interval (ft.)
		From To
		From To
		From To

46. FORMATION RECORD **(list depths of principal geological markers and formation tops, including, but not limited to, all permitted disposal/injection formations within 1/4-mile of the wellbore, productive zones, potential flow zones, and corrosive formation fluid zones)**

Principal Geological Markers and Formation Tops	Depth (ft.) TVD	Depth (ft.) MD	Indicate if formation is a permitted disposal/injection formation, productive zone, potential flow zone, and/or a zone with corrosive formation fluids	**Is formation isolated in this well? (YES/NO) (if NO, explain in remarks)**

47. Do the producing intervals of this well produce H_2S with a concentration in excess of 100 ppm (SWR 36)? ☐ YES ☐ NO

48. Is the completion being down-hole commingled (SWR 10)? ☐ YES ☐ NO

REMARKS:

OPERATOR'S CERTIFICATION: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that I prepared or supervised and directed this report, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.

Signature: Operator's representative _____ Title _____ Tel: Area Code _____ Number _____

Printed Name _____ Date _____ Email (include email address *only* if you affirmatively consent to its public release) _____

Questions & Answers Pertaining to Gas Well Classification Report

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
G-5 (SWR 53)	Do I need to file the G-5 with all G-1's?	Form G-5 must be filed for all new wells, workovers, and reclassifications, including dry gas wells and with G-1 retests where the gas-liquid hydrocarbon ratio is less than 100,000 cubic feet per barrel.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
G-5	If the producing gas-liquid hydrocarbon ratio is greater than 100,000 cubic feet per barrel, must Section II of the Form G-5 be completed?	No, Section II is to be completed only if the producing ratio is less than 100,000 cubic feet per barrel.	Engineering Unit 512-463-1126
G-5 (SWR 79 (11) (c))	Is there a difference between the completion date and the completed date?	Yes, the completion date is the date the well is capable of production by turning of a valve (not necessarily connected to a sales line). The completed date is the date the wellbore has been drilled to total depth and plugged, cased, and cemented, or workover operations are completed.	Engineering Unit 512-463-1126

G-5 Gas Well Classification Report

Form G-5 (Gas Well Reclassification Report) SWR 53 (B)

A) Filed via the RRC online completions system upon completion of any gas well or reclassification associated with the G-1 completion packet.
B) Purpose is to verify type well. If the information on the Form G-5 indicates that the well may not be a gas well under statutory definition, the operator will be required to furnish additional information and analysis to support the classification as a gas well or submit Form W-2 and other required forms to classify the well as an oil well.
C) Distillation test is required on G-5 if gas/liquid hydrocarbon ratio is less than 100,000 cubic feet gas per barrel of liquid.

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

READ INSTRUCTIONS ON BACK

GAS WELL CLASSIFICATION REPORT

Form G-5

Rev. 01/01/86

www-1

1. OPERATOR NAME (Exactly as shown on Form P5 Organization Report	3. RRC DISTRICT NO.	4. OIL LEASE NO OR GAS WELL ID NO.
2. MAILING ADDRESS	5. WELL NO.	6. API NO. 42-
	7. COUNTY OF WELL SITE	
8. FIELD NAME (as per RRC Records)	9. LEASE NAME	
10. LOCATION (Section, Block and Survey)	11. PIPELINE CONNECTION OR USE OF GAS	

PRODUCTION TEST AT RATE ELECTED BY OPERATOR
(data on 24-hour basis)

A. Date of Test _____

B. Gas Volume _____ (Mcf)

C. Oil or Condensate Volume _____ (Bbl)

D. Water Volume _____ (Bbl)

E. Gas/Liquid Hydrocarbon Ratio _____ (Cf/Bbl)

F. Flowing Tubing Pressure _____ (psia)

G. Choke Size _____ (in.)

H. Casing Pressure _____ (psia)

I. Shut-in Wellhead Pressure--
Tubing _____ (psia)

J. Separator Operating Pressure _____ (psia)

K. Color of Stock Tank Liquid _____

L. Gravity of Separator Liquid _____ °API

M. Gravity of Stock Tank Liquid _____ °API

N. Specific Gravity of the Gas
(Air = 1) _____

A.S.T.M. DISTILLATION OF LIQUID SAMPLE. Distillation test is required for gas wells ONLY if the producing gas-liquid hydrocarbon ratio is less than 100,000 CF/barrel.

Date Liquid Sample Obtained _____

Where Obtained: ☐ Separator ☐ Stock Tank

% Over Temp. (deg. F)		% Over Temp. (deg. F)	
Initial Boiling Temp.		60	
10		70	
20		80	
30		90	
40		95	
50		End Point	

Total Recovery _____ percent

Residue _____ percent

Loss _____ percent

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, **that this report was prepared by me or** under my supervision and direction, and that data and facts stated therein are true, correct, and complete to the best of my knowledge.

DATE

NAME (Type or Print)

SIGNATURE

TITLE

CONTACT PERSON ( ) PHONE NUMBER

RRC USE ONLY

Revised July 2021

Instructions

Form G-5: Gas Well Classification Report

This report shall be filed **in duplicate** in the appropriate Railroad Commission District Office:

a. Upon completion of a gas well.
b. Upon reclassification of any well from oil to gas
c. Upon reclassification from gas to oil if the gas-oil ratio is more than 12,500 cubic feet per barrel and the oil gravity is more than 50 degrees API.
d. And upon subsequent requests by the Railroad Commission.

Production Tests: The production test data required on this form must reflect representative operating conditions if the well is connected to a sales line. If the well is not connected, the test must be at a stabilized rate. The volumes reported must be on a 24-hour basis.

Liquid Sample: The liquid hydrocarbon sample must be a fresh sample of stock tank liquid or a separator sample which has been flashed to atmospheric pressure and allowed to stabilize at the ambient temperature. If a separator sample is transported to the laboratory in a pressurized container, the sample must be flashed to atmospheric pressure and allowed to stabilize at 60 degrees Fahrenheit before measuring the API Gravity or commencing the distillation test.

NOTICE: NO CONDENSATE OR CRUDE PETROLEUM WILL BE CLEARED FROM A GAS WELL PRIOR TO THE ASSIGNMENT OF AN ALLOWABLE UNTIL THIS REPORT HAS BEEN PROPERLY PREPARED, EXECUTED, AND FILED ALONG WITH A FORM P-4 NAMING THE GATHERER OF THE CONDENSATE AND A REQUEST FOR CLEARANCE (FORM P-8) STATING THE AMOUNT OF CONDENSATE TO BE MOVED.

Reference: Statewide Rule 53

Guidelines for Gas Well Classification

A) Form G-5 for wells producing with a gas-liquid hydrocarbon ratio less than 100,000 cubic per barrel:
B) The producing gas-liquid hydrocarbon ratio must be at least 12,500 cubic feet per barrel.
C) The API gravity of the liquid hydrocarbons must be greater than or equal to 50 degrees.
D) On the ASTM Distillation Test of liquid sample: Initial Boiling temperature must be no more than 120 degrees. At 80 percent recovery, the boiling temperature must not exceed 520 degrees. The end point must not exceed 720 degrees with at least 95 percent recovery and no sign of cracking (residue not greater than 5%).
E) If the Form G-5 meets the above requirements, the Commission will accept a gas well classification for the well.
F) Additional options exist for gas well classification concerning compositional/PVT analysis. See attached policy memo concerning this policy.

RAILROAD COMMISSION OF TEXAS

ELIZABETH A. JONES, *CHAIRMAN*
MICHAEL L. WILLIAMS, *COMMISSIONER*
VICTOR G. CARRILLO, *COMMISSIONER*

INTERNAL
OIL AND GAS DIVISION
RICHARD A. VARELA, DIRECTOR

MEMORANDUM

TO: Chris Hosek, Chief of Staff
Office of Chairman Elizabeth A. Jones

Carol Treadway, Chief of Staff
Office of Commissioner Michael L. Williams

Kay Molina, Chief of Staff
Office of Commissioner Victor G. Carrillo

FROM: Richard A. Varela
Director, Oil and Gas Division

DATE: August 3, 2006

SUBJECT: Change in administrative determination policy for gas well classification.

August 3, 2006 (Supersedes T-bar Previously Approved on March 16,2006)		
APPROVED	**DENIED**	**ABSTAIN**

We are seeking your approval to change long-established RRC administrative procedures used to determine gas well classification by adding another determination option based on heptanes plus mole percent composition.

Statewide Rule 79 defines a Gas Well as any well:

(A) which produces natural gas not associated or blended with crude petroleum oil at the time of production;

(B) which produces more than 100,000 cubic feet of natural gas to each barrel of crude petroleum oil from the same producing horizon; or

(C) which produces natural gas from a formation or producing horizon productive of gas only encountered in a wellbore through which crude petroleum oil also is produced through the inside of another string of casing or tubing. A well which produces hydrocarbon liquids, a part of which is formed by a condensation from a gas phase and a part of which is crude petroleum oil, shall be classified as a gas well unless there is produced one barrel or more of crude petroleum oil per 100,000 cubic feet of natural gas; and that the term "crude petroleum oil" shall not be construed to mean any liquid hydrocarbon mixture or portion thereof which is not in the liquid phase in the reservoir, removed from the reservoir in such liquid phase, and obtained at the surface as such.

Statewide Rule 79 defines an Oil well as any well which produces one barrel or more crude petroleum oil to each 100,000 cubic feet of natural gas.

Under **current administrative procedures,** staff classifies a well as a "gas well" if the well meets certain criteria using one of the determination options listed below.

1) The Gas-Oil Ratio (GOR) reported on completion forms exceeds 100,000 cubic feet (cf) of natural gas to each barrel of oil at standard pressure and temperature conditions as defined in Statewide Rule 79 (note: when computing the GOR, the crude petroleum oil may be oil or condensate);
2) If the GOR is less than 100,000 cf/bbl at standard pressure and temperature conditions, an American Society for Testing and Materials (ASTM) Distillation Test must be conducted (Typical cost <$200) and is submitted on Form G-5. The results of this test can indicate the well is a gas well if:
    a) the GOR is greater than 12,500 cf/bbl,
    b) the API gravity of the liquid exceeds 50°,
    c) the liquid color is not consistent with that of crude oil petroleum,
    d) the initial boiling point test is less than 120°F,
    e) at 80% recovery the boiling point does not exceed 520°F,
    f) the end point does not exceed 720°F with at least 95% recovery,
    g) the residue is less than 5% with no evidence of cracking.
3) If the Gas-Oil Ratio (GOR) reported on completion forms exceeds 100,000 cubic feet (cf) of natural gas to each barrel of oil at reservoir conditions and if the ASTM test is inconclusive, a pressure, volume, temperature (PVT) test can be run in a laboratory and submitted to prove a well is a gas well. This test simulates the phase characteristics of a hydrocarbon sample at reservoir conditions. A well is classified as a gas well if the GOR exceeds 100,000 cf/bbl or it is above the dew point at existing reservoir conditions. This test may require a well be shut in to establish the current bottom hole pressure (BHP). (Typical cost <$3,000).

Under current administrative procedures, if a well does not meet the specified criteria listed above, an operator may request a hearing to present additional evidence that supports gas well classification and obtain a well classification through Commission order.

The proposed administrative procedures for gas well classification would still allow staff to utilize all the options listed above but would add one additional option. A well would be administratively classified as a gas well if the heptanes plus (C7+) mole percent of a compositional analysis is less than 11%. This change is supported by research published by Philip L. Moses in the Journal of Petroleum Technology July 1986 *Engineering Applications of Phase Behavior of Crude Oil and Condensate Systems* and William D. McCain, Jr. in the Properties of Petroleum Fluids Second Edition © 1990.

Fluid sampling for the ASTM distillation, PVT analysis, or compositional analysis should be performed by a third party who certifies that the sample is representative of the reservoir fluid and has identical properties to those of a fluid taken from the subject reservoir on the same day.

This administrative procedure change would not require rulemaking and is consistent with other gas well determinations approved by the Commission through the hearing process that were based on similar findings of fact.

cc: Ron Kitchens

G-10 Gas Well Status Report

Form G-10 (Gas Well Status Report) SWR 28

OPERATOR NAME AND ADDRESS including city, state and zip

GAS WELL STATUS REPORT
RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
P.O. Box 12967
Austin, Texas 78711-2967
Page __________ of __________

Reason for filing
☐ Survey
☐ Retest
☐ Initial Test
☐ Correction

Operator P-5 Organization No.

RRC Dist No.

G-10
REV. 09/2016

Test Period :

Due Date:

Effective Date:

Field Name *Lease Name	RRC IDENT. NO.	DATE TESTED MO/DAY/YEAR	GAS PRODUCED MCF/DAY **	CONDENSATE PRODUCED	WATER PROD BBL/DAY	****SIWH PRESSURE PSIA	If Calculated, Check Box
	WELL NO.	MARK X FOR SHUT-IN WELL	GRAVITY GAS SPEC.	CONDENSATE GRAVITY(API)	X BOTTOMHOLE PRESSURE PSIA	****FLOWING PRESSURE PSIA	N/A
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			
			MCF	_ _ _ _ _ _ . __BBL	_ _ _ _ _ _ . __BBL		☐
			. _ _ _ _	_ _ _ . _ _			

CERTIFICATION: I declare under penalties prescribed in Texas Natural Resources Code, Sec. 91.143, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated herein are true, correct, and complete to the best of my knowledge.

Signature: ______________________________________ **Title:** __________________________________ **Phone:** ____________ **Date:** ___________

* AN ASTERISK PREPRINTED ON A SURVEY IDENTIFIES WELL SUBJECT TO COMMINGLING TEST REQUIREMENT
** GAS PRODUCTION RATE, IN MCF, IS TO BE REPORTED FULL-WELL STREAM, INCLUDING CONDENSATE
**** PRESSURE FOR THE TEXAS HUGOTON FIELD IS REPORTED IN PSIG
AN "X" PREPRINTED ON A SURVEY IN THE BOTTOMHOLE PRESSURE BOX INDICATES A BOTTOMHOLE PRESSURE MUST BE REPORTED FOR THE WELL

Form G-10: Gas Well Status Report

INSTRUCTIONS

Reference: Statewide Rules 28, 31, 55, 71

Purpose of Filing

File the Form G-10 survey at the direction of the Railroad Commission when the FormG-10 is mailed to you with basic information pre-printed, including testing, filing, and effective dates. The Form G-10 may also be filed at any time to report an initial test, a retest, or to correct information already filed. A Form G-10 must be filed on each new gas well after the well is connected to a sales line in order for an allowable to be assigned.

Conducting the Test

1. The person conducting this test must be qualified by training or experience to make such tests.
2. Use gas measurement methods as described in the current Commission publications *Gas-Oil Ratio Calculation* and *Back Pressure Test for Natural Gas Wells, State of Texas,* or methods of at least equal accuracy.
3. Perform the test with the same equipment used during normal operations.
4. The test to determine the daily deliverability volume is to be of 72 hours minimum duration; pre-flow the well a minimum of 48 hours to stabilize it at a daily rate not less than 75% of the producing rate observed during the final 24 hours of the test. The average producing rate during that initial minimum 48-hour stabilization period is the average of the producing rates during the two 24-hour component periods. If the well produces condensate, measure dry gas volume and condensate volume during each 24 hours of the overall test period.
5. The reported test rate, that is, the daily deliverability volume you will be reporting on the Form G-10, is the actual production during the final 24 hours of the overall test period.
6. Obtain prior approval from the district office before conducting a test of less than 72-hours duration. Under no circumstance is the deliverability test to be less than 24 hours with the hourly producing rate extrapolated to 24 hours to calculate a daily deliverability volume.
7. If the well produces full-well stream, conduct and report the test in accordance with Statewide Rule 55(b).

Reporting the Test Results

1. Report full-well stream deliverability volume in MCF (thousand cubic feet) measured at a base pressure of 14.65 pounds per square inch absolute (psia) and a standard base temperature of 60° Fahrenheit.
2. To obtain the full-well stream deliverability volume, add the gas equivalent of any condensate produced during the final 24 hours to the dry gas volume metered during the same time period. If the actual gas equivalent of the condensate has not been determined by laboratory analysis, use a value of 1.1 MCF per barrel.
3. For wells producing full-well stream to a plant or central facility, report the calculated condensate production in accordance with Statewide Rule 55(a).
4. Report liquid hydrocarbons or condensate, in barrels of 42 U.S. gallons at 60° Fahrenheit.

Filing the G-10

File the completed G-10 report **(original only)** with Austin no later than (15) days after the date the test is completed. Field-wide G-10 surveys are due the first day of the month following the end of the test period. File the G-10 with: RAILROAD COMMISSION OF TEXAS, OIL AND GAS DIVISION, P.O. BOX 12967, AUSTIN, TEXAS 78711-2967.

Various

TEST EXEMPTION. An initial deliverability test is required on a well with a deliverability of less than 100 MCF/day. If, however, deliverability and production remain at or less than 100 MCF/day, or, in fields without special field rules, at or less than 250 MCF/day, the well is exempt from further G-10 testing and will not be listed on the Commission computer-generated G-10 surveys. NOTE: this exemption does not apply if the well is operating under any field rule or commingling exception which is in conflict with this exemption.

BOTTOM HOLE PRESSURE. Report BHP for prorated wells which have BHP as a part of the allocation formula, in addition to filing Form W-7. Take the BHP during the same test period as the survey.

SHUT-IN WELLHEAD PRESSURE FOR PRODUCING WELLS. If the 24-hour shut-in wellhead pressure is determined at a time; other than during the deliverability test, report the date the measurement was made in the space directly below the date tested. If a previously determined shut-in pressure from the six-month period prior to the test is not available, record a shut-in pressure from immediately prior to or after the deliverability test in accordance with SWR 28(c) and report only the date tested.

The operator may estimate the Shut-In Wellhead Pressure (SIWP) by calculation. If this method is used, it must be accompanied by a letter from a professional engineer licensed in accordance with Chapter 1001 of the Texas Occupations Code.

SHUT-IN WELLS. Report the shut-in pressure, if any, in the SIWH Pressure block and, in the Shut-In block enter an "X" on all shut-in wells.

FIELD RULES. Operators are to observe all testing and reporting requirements as set out in applicable field rules.

09/16

Initial Test should be filed with the G-1:

G-10 test is run after well is connected to the sales line. All deliverability (G-10) tests shall be performed by producing the subject well at stabilized rates for a minimum time period of 72 hours. Additional G-10 retests can be filed be operators at their discretion, **refer to Section G.**

Questions & Answers Pertaining to Form P-15

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
P-15	Is the acreage designated on the P-15 the same as my drilling unit?	No, the drilling unit is the unit formed in order to comply with spacing and acreage requirements under applicable field rules. The proration unit designated on the P-15 is productive acreage assigned to the well for allowable purposes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
P-15	Is this form required for all wells?	No, a P-15 and accompanying plat is required only for wells which are completed in reservoirs where special field rules have been adopted.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
P-15	What do I do if I complete a well on the same lease as other wells which are already assigned all acreage in the unit? (If completed in the same reservoir?)	You must reduce the acreage for the existing wells by filing revised P-15's and plats, so that there will be no double assignment of acreage.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
P-15	When I reduce the size of the proration unit for other wells on the same lease in the same reservoir, do I need a separate plat with each P-15 filed?	Yes, since each P-15 and plat will be placed in a separate well file.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
P-15	Where do I send my Form P-15?	The Form P-15 should be filed with the initial completion. Subsequent filing should be filed hard copy to the RRC Well Compliance Unit. Form P-15 should indicate RRC ID number next to the lease name.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
P-15	Can a P-16 be filed in lieu of a P-15 regardless of special field rules?	Yes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
P-15	The configuration of my proration unit causes the distance from the two farthest points on the proration unit to exceed the maximum diagonal as required by field rules. I cannot reconfigure the shape of the proration unit, how do I get an exception on the maximum diagonal?	An operator may request an exception to the distance limitations which may be administratively approved if all the acreage is considered productive. A letter of request stating the length of the longest diagonal of the proration unit, the acreage of the proration unit, the maximum diagonal allowed by field rules for that acreage, and the number of acres within and beyond the maximum diagonal.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
P-15	Where do I request an exception to the maximum diagonal and is there a fee?	There is a fee payable to the Railroad Commission of Texas if acreage is part of the allocation formula for the gas field. Requests for administrative exceptions should be made in writing with the Proration Allocation Section's Engineering Unit in Austin.	Engineering Unit 512-463-1126

Indicate RRC Identification Number along with Lease Name on Form P-15.

Statement of Productivity of Acreage Assigned to Proration Units

STATEMENT OF PRODUCTIVITY OF ACREAGE
ASSIGNED TO PRORATION UNITS

Form P-15

Tracking No.: 162940

This facsimile P-15 was generated electronically
from data submitted to the RRC.

The undersigned states that he is authorized to make this statement; that he has knowledge of the facts concerning the BP AMERICA PRODUCTION COMPANY (OPERATOR), W. E. JACKSON GAS UNIT (LEASE), No. 6 (WELL); that such well is completed in the WOODLAWN (TRAVIS PEAK) Field, HARRISON County, Texas and that the acreage claimed, and assigned to such well for proration purposes as authorized by special rule and as shown on the attached certified plat embraces _____ 40.0 acres which can reasonably be considered to be productive of hydrocarbons.

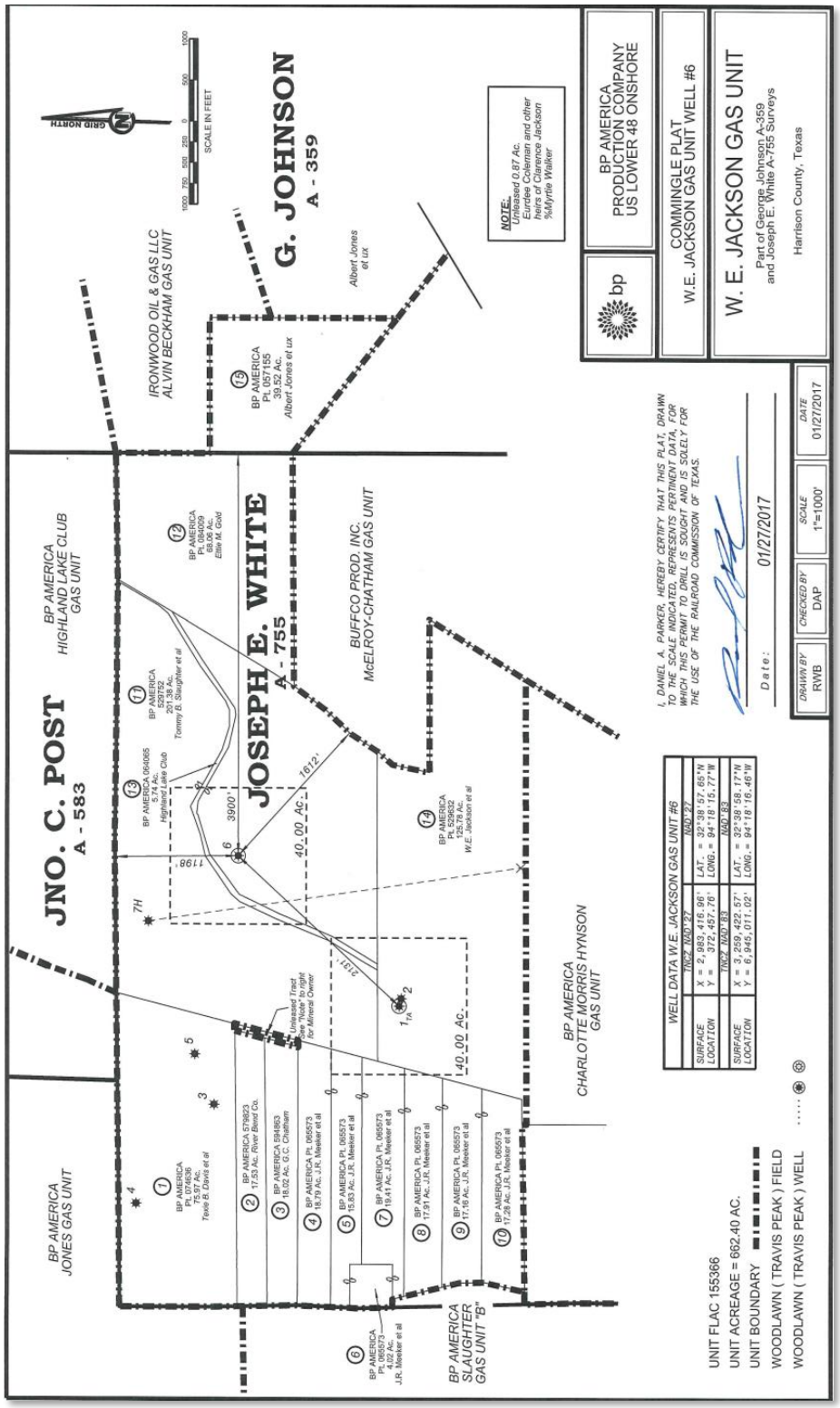
- CERTIFICATE -

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge,

Date 01/26/2017 Signature Anita Curtis

Telephone (281) 892-5782 (AREA CODE) Title Regulatory Specialist

Certified Acreage Plat



W-12 Inclination Reports

Required by SWR 11

When Filing is Required

A) An inclination survey made by persons or concerns approved by the Commission shall be filed on a form prescribed by the Commission for each well drilled or deepened with rotary tools, except as hereinafter provided, or when, as a result of any operation, the course of the well is changed. The first shot point of such inclination survey shall be made either at 500-ft intervals or at the nearest drill bit change thereto, but not to exceed 1,000 feet apart.
B) Inclination surveys conforming to these requirements may be made either during the normal course of drilling or after the well has reached total depth. Acceptable directional surveys may be filed in lieu of inclination surveys.
C) Copies of all directional or inclination surveys, regardless of the reason for which they are run, shall be filed as a part of or in addition to the inclination surveys otherwise required by this rule. If computations are made from diameter surveys to determine the course of the wellbore in any portion of the surveyed interval, a report of such computations shall be required.
D) If a dry hole is reentered and the well produces, an Inclination Survey is required.
E) If reentering a well that produced prior to November 1962, an Inclination Survey is required.

When Filing is not Required

A) An inclination survey shall not be required in any well drilled to a total depth of 2000 feet or less on a regular location at least 150 feet from the nearest lease line, provided the well is not intentionally deviated from the vertical in any manner whatsoever.
B) Inclination surveys shall not be required in wells deepened no more than 300 feet or the distance from the surface location to the nearest lease boundary line whichever is lesser, and provided that the well was not intentionally deviated from the vertical at any time before, or after the beginning of deepening operations.
C) Inclination surveys will not be required on wells that are drilled and completed as dry holes and are permanently plugged and abandoned. If such wells are re-entered at a later date and completed as producers, inclinations reports will be required and must be filed with the appropriate completion form for the well.
D) Inclination survey filings will not be required on wells that are reentries within casing of previously producing wells if inclination data are already on file with the Railroad Commission of Texas. If such data are not on file with the commission, the results of an inclination survey must be reported on the appropriate form and filed with the completion form.

Questions & Answers Pertaining to Form W-12

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-12	How do I record my shot points on the Form W-12?	The first shot point must be made at a depth not greater than 500 feet with succeeding points not to exceed 1000 feet apart. The last shot point should be within 1000ft of TD.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-12	If item #18 exceeds item #20 on the W-12, what should I do?	A directional survey must be run to determine the true bottomhole location before an allowable can be assigned.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-12	Who is required to sign the Form W-12?	Representatives of both the Operator and the drilling contractor must sign the W-12. If the inclination survey was conducted by the Operator using the Operator's equipment, then a representative of the Operator with personal knowledge of the survey may sign for the drilling contractor.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
W-12	Do I run an inclination survey in a well that is re-entry of a previously producing well if the well was originally drilled and completed prior to November 1962, when the Commission began requiring Inclination Surveys?	Yes.	Engineering Unit 512-463-1126

Terms

A) **Inclination Survey** — Reports the results of the inclination test from the surface to within 1000 feet of the total depth of the well.

B) **Shot Point** — That depth at which the angle of inclination is measured.

C) **Rotary Drill** — Principle of rotary drilling.

D) **Cable Tool Drill** — Drilling that operates on a combination hammer suction principle. No inclination survey required.

Form W-12 Inclination Report

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

Form W-12
(1-1-71)

INCLINATION REPORT
(One Copy Must Be Filed With Each Completion Report.)

1. FIELD NAME (as per RRC Records or Wildcat)	2. LEASE NAME
3. OPERATOR	
4. ADDRESS	
5. LOCATION (Section, Block, and Survey)	

6. RRC District
7. RRC Lease Number. (Oil completions only)
8. Well Number
9. RRC Identification Number (Gas completions only)
10. County

RECORD OF INCLINATION

*11. Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)

If additional space is needed, use the reverse side of this form.

17. Is any information shown on the reverse side of this form? ☐ yes ☐ no

18. Accumulative total displacement of well bore at total depth of _____ feet = _____ feet.

*19. Inclination measurements were made in – ☐ Tubing ☐ Casing ☐ Open hole ☐ Drill Pipe

20. Distance from surface location of well to the nearest lease line _____ feet.

21. Minimum distance to lease line as prescribed by field rules _____ feet.

22. Was the subject well at any time intentionally deviated from the vertical in any manner whatsoever? _____

(If the answer to the above question is "yes", attach written explanation of the circumstances.)

INCLINATION DATA CERTIFICATION

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have personal knowledge of the inclination data and facts placed on both sides of this form and that such data and facts are true, correct, and complete to the best of my knowledge. This certification covers all data as indicated by asterisks (*) by the item numbers on this form.

_____
Signature of Authorized Representative

_____
Name of Person and Title (type or print)

_____
Name of Company

Telephone: _____ _____
Area Code

OPERATOR CERTIFICATION

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have personal knowledge of all information presented in this report, and that all data presented on both sides of this form are true, correct, and complete to the best of my knowledge. This certification covers all data and information presented herein except inclination data as indicated by asterisks (*) by the item numbers on this form.

_____
Signature of Authorized Representative

_____
Name of Person and Title (type or print)

_____
Operator

Telephone: _____ _____
Area Code

Railroad Commission Use Only:

Approved By: _____ Title: _____ Date: _____

* Designates items certified by company that conducted the inclination surveys.

RECORD OF INCLINATION (Continued from reverse side)

*11. Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)

If additional space is needed, attach separate sheet and check here. ☐

REMARKS: ____

____

____

– INSTRUCTIONS –

An inclination survey made by persons or concerns approved by the Commission shall be filed on a form prescribed by the Commission for each well drilled or deepened with rotary tools or when, as a result of any operation, the course of the well is changed. No inclination survey is required on wells that are drilled and completed as dry holes that are plugged and abandoned. (Inclination surveys are required on re-entry of abandoned wells.) Inclination surveys must be made in accordance with the provisions of Statewide Rule 11.

This report shall be filed in the District Office of the Commission for the district in which the well is drilled; by attaching one copy to each appropriate completion for the well. (except Plugging Report)

The Commission may require the submittal of the original charts, graphs, or discs, resulting from the surveys.

Form W-12 is used to report the results of inclination surveys which are required to be run on all wells drilled or deepened with rotary tools as specified in Statewide Rule 11.

Items 1-10 of Form W-12 is the basic well information and should be filled out identically to Form W-2 or Form G-1. The center section of the form is the record of the inclination test, including the measured depth, the angle of inclination, the course deviation, and the accumulated displacement. The first shot point must be made at depth not greater than 500 feet with succeeding points not to exceed 1,000 feet apart. All items must be properly filled out including Items 20, 21 and 22. If the accumulative total displacement shown in Item 18 exceeds Item 20, no allowable will be assigned until a complete directional survey has been run to show that the true bottom hole location of the well is within the

prescribed limits. Under certain conditions, administrative exceptions can be granted to this requirement.

The bottom of Form W-12 is saved for signatures and certification with the inclination data certification to be signed by an employee of the drilling contractor and by a representative of the Operator who has personal knowledge of all information requested on the report. An employee of the Operator of the well may sign the inclination data certification for the drilling contractor if the inclination survey measurements were run with the operator's equipment under the direct supervision of the employee who signs the certification.

L-1 Electric Log Status Reports

Required by SWR 16

When Filing is Required

A) On all Forms G-1, W-2, GT-1 for new and deepened gas, oil, and geothermal wells.
B) With Form W-3 for plugged dry holes, required per SWR-14
C) Effective 2/01/02 operators are required to file the log headings of all that they are requesting to hold confidential.
D) Effective 04/28/15 each electric log must be filed with the commission electronically in a manner acceptable to the Commission if the Commission has the technological capability to receive the electronic filing.
E) In the event that no open hole logs were run, cased hole-neutron logs or TDT log may be submitted.

When Filing is Not Required

A) With completion forms for service wells, water supply wells, disposal wells, reclassification and plugbacks.
B) For plugged and abandoned wells other than a dry hole.

Questions & Answers Pertaining to Form L-1

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
L-1	What parts of the L-1 must I complete?	All of Section I and only the appropriate part of Section II.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	What type of log is required?	Any open hole wire line survey run for the purpose of obtaining lithology, porosity, or resistivity information.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	What if no open hole logs were run?	Cased hole neutron or TDT log may be submitted with remark added that no open hole log was run.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	How many electric logs should I file?	All electronic logs run.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	Are cement bond logs, free point indicators and temperature surveys acceptable?	No.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	Where do I file my Form L-1?	Associated with a completion packet via RRC online completion system.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	Is an L-1 required for wells for which a directional or horizontal survey was run?	Yes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	Is an L-1 required for wells which only the producing interval has been deepened, but not the wellbore.	Yes.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov
L-1	We digitized out logs using a software package. Can we submit these digitized curves without the log heading?	No. The rules state the log must be continuous and unaltered.	Well Compliance 512-463-6975 prorationunit@rrc.texas.gov

Terms

A) **Basic Electric Log** — Any open hole wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information.

Form L-1 Electric Log Status Report

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

ELECTRIC LOG STATUS REPORT

FORM L-1
Rev. 01-2007

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SEE REVERSE SIDE

SECTION I. IDENTIFICATION

Operator Name:	District No.	Completion Date:
Field Name	Drilling Permit No.	
Lease Name	Lease/ID No.	Well No.
County	API No. 42-	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☐ B. BASIC ELECTRIC LOG RUN. (Select one)

☐ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion: Lease or ID No(s). _____ _____ Well No(s). _____

_____ Signature	_____ Title
_____ Name (print)	(___) _____ Phone _____ Date

-FOR RAILROAD COMMISSION USE ONLY-

Form L-1, Electric Log Filing Requirements

Rev. Effective 01-2007

As required by statute (Texas Natural Resources Code, Chapter 91, Subchapter M) and defined by Statewide Rule 16 (see below), a legible, unaltered final copy of a basic electric log run on a well must be filed with the completion report for that well (Form W2 and Form G-1) or the plugging report for that well if it is a dry hole (Form W-3). The electric log will become part of the public record.

You may, however, request a one-year period of confidentiality during which you will keep the log in your possession. Prior to the expiration of the initial period of confidentiality, you may request a renewal for a two-year period. Logs of wells drilled on land submerged in State water may be granted an additional two-year extension. At the end of the period(s) of confidentiality, a copy of the basic electric log must be filed with the Commission. The Commission will send you a notice prior to the expiration of the confidentiality period(s). NOTE: Electric logs submitted in conjunction with an application for multiple completion or a new field designation or tax exemptions/exclusions are considered part of the public records and confidentiality cannot be granted to them.

§3.16. Log and Completion or Plugging Report.

(a) Definitions. The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise:

(1) Basic electric log--A density, sonic, or resistivity (except dip meter) log run over the entire wellbore.

(2) Drilling operation--A continuous effort to drill or deepen a wellbore for which the Commission has issued a permit.

(3) Operator--A person who assumes responsibility for the regulatory compliance of a well as shown by a form the person files with the Commission and the Commission approves.

(4) Well--A well drilled for any purpose related to exploration for or production or storage of oil or gas or geothermal resources, including a well drilled for injection of fluids to enhance hydrocarbon recovery, disposal of produced fluids, disposal of waste from exploration or production activity, or brine mining.

(b) Completion and plugging reports. The operator of a well shall file with the Commission the appropriate completion report within 30 days after completion of the well or within 90 days after the date on which the drilling operation is completed, whichever is earlier. The operator of a well shall file with the Commission an amended completion report within 30 days of any physical changes made to the well, such as any change in perforations, or openhole or casing records. If the well is a dry hole, the operator shall file with the Commission an appropriate plugging report within 30 days after the well is plugged.

(c) Basic electric logs. Except as otherwise provided in this section, not later than the 90th day after the date a drilling operation is completed, the operator shall file with the Commission a legible and unaltered copy of a basic electric log, except that where a well is deepened, a legible and unaltered copy of a basic electric log shall be filed if such log is run over a deeper interval than the interval covered by a basic electric log for the well already on file with the Commission. In the event a basic electric log, as defined in this section, has not been run, subject to the Commission's approval, the operator shall file a lithology log or gamma ray log of the entire wellbore. In the event no log has been run over the entire wellbore, subject to the Commission's approval, the operator shall file the log which is the most nearly complete of the logs run.

(d) Delayed filing based on confidentiality. Each log filed with the Commission shall be considered public information and shall be available to the public during normal business hours. If the operator of a well desires a log to be confidential, on or before the 90th day after the date a drilling operation is completed, the operator must submit a written request for a delayed filing of the log. When filing such a request, the operator must retain the log and may delay filing such log for one year beginning from the date the drilling operation was completed. The operator of such well may request an additional filing delay of two years, provided the written request is filed prior to the expiration date of the initial confidentiality period. If a well is drilled on land submerged in state water, the operator may request an additional filing delay of two years so that a possible total delay of five years may be obtained. A request for the additional two-year filing delay period must be in writing and be filed with the Commission prior to the expiration of the first two-year filing delay. Logs must be filed with the Commission within 30 days after the expiration of the final confidentiality period, except that an operator who fails to timely file with the Commission a written request under this subsection for an extension of the period of log confidentiality shall file the log with the Commission immediately after the conclusion of the period for filing the request.

(e) Sanctions. If an operator fails to file a completion report or log in accordance with the provisions of this section, the Commission may refuse to assign an allowable to a well, set the allowable for such well at zero, and/or initiate penalty action pursuant to the Texas Natural Resources Code, Title 3.

Items Required on a Log Header

A) Well identification and location information

B) Types of log measurements taken

C) Depths logged

D) Bit sizes

E) Casing sizes

F) Date and time logging started and finished

G) Type of mud

H) Mud density

I) Mud viscosity

J) Mud resistivity (**Rm, Rmf, and Rmc** values at stated measured temperature)

K) Elevation above sea level

L) Kelly bushing height

M) Depth that log measurements are relative to

N) Max temperature recorded

O) Name of service company

P) Name of service company employee

ALLIED WIRELINE

Compensated Neutron Log W/Gamma Ray/CCL

Company Diamondback Energy

Well Spanish Trails 40-6

Field Spraberry (Trend Area)

County Midland State Texas

Location: API # : 42-329-38591
1400' FWL & 2300' FNL
Sec.40 Blk. 40 T-1-S, Abstract 801
T &P RR Co. Survey
SEC TWP RGE

Other Services: RCBL

Permanent Datum Ground Level Elevation 2873'
Log Measured From Kelly Bushing 16' APD
Drilling Measured From Kelly Bushing

Elevation: K.B. 2889' D.F. 2888' G.L. 2873'

Company	Diamondback Energy
Well	Spanish Trails 40-6
Field	Spraberry (Trend Area)
County	Midland
State	Texas

Date	22-July-2013
Run Number	One
Depth Driller	10925'
Depth Logger	10784'
Bottom Logged Interval	10782'
Top Log Interval	5000'
Open Hole Size	7 7/8"
Type Fluid	Water
Density / Viscosity	-
Max. Recorded Temp.	-
Estimated Cement Top	5970'
Time Well Ready	ROA
Time Logger on Bottom	1545
Equipment Number	12024
Location	Midland Tx
Recorded By	J.Contreras
Witnessed By	

Borehole Record

Run Number	Bit	From	To
One	14 3/4"	Surface	350'
Two	11"	350'	5300'
Three	7 7/8'	5300'	10925'

Tubing Record

Size	Weight	From	To

Casing Record

	Size	Wgt/Ft	Top	Bottom
Surface String	11 3/4"	47#	Surface	350'
Prot. String	8 5/8"	32#	Surface	5300'
Production String	5 1/2"	17#	Surface	10925'
Liner				
Short Joint		6426' - 6444'		

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Primary Log on Well. Well logged using 16' KB

Main Pass and Repeat Pass logged with zero pressure on surface

Thank You for using ALLIED Wireline

(432) 897-1528

ALLIED WIRELINE

Main Pass

W-15 Cementing Report

Required by SWR(s) 8, 13, & 14

Used to provide the Commission with information about cementing casing(s) in a well, changing original wellbore structure or when setting plugs in a well.

When filing is Required

A) With all new well completions.
B) With Form W-4 for tubingless multiple completions.
C) With Form W-3 Plugging Report unless the front is signed by the cementing company representative.
D) For workovers/recompletions changing wellbore structure within casing (i.e., CIBP w/20 feet of cement, repair/squeezing casing, etc.) that might affect future plugging instructions.

When Filing is not required

A) For reclassification of wells.
B) During workover operations when the producing interval remains in same formation.
C) For Field Transfers.
D) For casing liners hung without cement.

Questions and Answers Pertaining to Form W-15

Question Pertains to (Form, Rule, Procedure)	Question	Answer	Contact
W-15	What if I did not circulate the cement to surface of ground?	Contact the appropriate RRC District Office.	Appropriate RRC District Office
W-15	Do I need to file a W-15 on a dry hole?	Yes, unless the front of the W-3 is signed by the cementing company representative.	Appropriate RRC District Office
W-15	Who supplies the information in the shaded areas on the W-15?	The Cementing Company.	Appropriate RRC District Office
W-15	Where do I file my W-15?	Associated with a completion package filed via RRC online completion system. Associated with a well plugging filed with the appropriate District Office accompanying the Form W3.	Appropriate RRC District Office

Terms

A) **Cased** — Descriptive of wellbore in which steel pipe, called casing, is run and cemented.

B) **Centralizers** — A device that is secured around the casing to center the casing in the hole and aids in providing uniform cement sheath around the pipe. Centralizers are run along the string of casing at various intervals.

C) **Intermediate Casing** — The string(s) of casing set in a well after the surface casing and before production casing. The casing is sometimes called protective casing.

D) **Production Casing** — Last string of casing or liner normally perforated for production set in a well.

Guidelines for W-15 Cementing Report

Used to furnish the Commission with information about cementing casing(s) in a well, changing original wellbore structure or when plugging a well. This report is required with an initial oil (W-2) or gas (G-1) completion report, by Statewide Rules 8, 13 and 14, and by many special field rules. One W-15 must be filed for every casing string cemented ensuring Principal Geological Markers and Formation Tops including productive zones, possible injection/disposal formations, potential flow zones or corrosive formation fluid zones encountered during drilling operations were properly isolated. The form must also be filed after a well has been properly plugged along with Form W-3, or on a dry hole to show any casing cemented in the hole.

Sections of Form W-15:

- Shaded areas should be filled by the cementing company; unshaded items are to be completed by the operator of record. Signature certification from both cementer and operator are required.
    - Operator is not authorized to alter cementer's information without cementer's approval.
- Sections OPERATOR INFORMATION and WELL INFORMATION are basic well identification and should be filled out identically for Form W-2 or G-1
- Section I. CASING CEMENTING DATA for standard types of casing program.
    - If cementing Surface Casing, the question Was cement circulated to ground surface (or bottom of cellar) outside casing? should always be answered YES. If answer is NO, operator will add Remark on back of W-15 stating District Office was notified requesting additional instructions and temperature survey or cement bond log was run.
    - W-15 will not be accepted if this question is not answered.
    - If question is left unanswered, operator must request a corrected W-15 from cementer.
- Sections II. and III. CASING CEMENTING DATA for subsequent casing programs like Tapered Production, Multi-Stage Cement Shoe/DV Tool, and Multiple parallel strings.
- All W-15 information must correspond with Casing Record on Pg. 4 or Acid, Shot, Fracture, Cement Squeeze, Etc. on Pg. 5 of W-2 or G-1 Completion Tab. Any discrepancy will generate RRC inquiry.
- Section CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON operator must distinguish if squeeze job or plug was set. Both Operator and Cementer may include Remark clarifying cementing process.
- RRC may exercise option to call cementing company for further clarification.

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION	
Operator Name:	Operator P-5 No.:
Cementer Name:	Cementer P-5 No.:

WELL INFORMATION		
District No.:	County:	
Well No.:	API No.:	Drilling Permit No.:
Lease Name:	Lease No.:	
Field Name:	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.):	Top of liner (ft.): Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Name and title of cementer's representative | Cementing Company | Signature

Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Typed or printed name of operator's representative | Title | Signature

Address | City, State, Zip Code | Tel: Area Code Number | Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.texas.gov/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.