

Well Operator's Report of Well Work



Well Number: Van Winkle S-20HU

API: 47 - 051 - 02353

Submission:  Initial  Amended

Notes:

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JAN 22 2024

WV Department of  
Environmental Protection

02/23/2024

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-051-02353 County Marshall District Meade  
Quad Glen Easton 7.5' Pad Name Hunter Pethtel Field/Pool Name \_\_\_\_\_  
Farm name XcL Midstream Operating, LLC Well Number Van Winkle S-20HU  
Operator (as registered with the OOG) EQT Production Company  
Address 400 Woodcliff Drive City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,403,543.59 Easting 523,377.11  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) 753' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)  
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, Shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

Date permit issued 7/13/2021 Date drilling commenced <sup>spud: 10/14/2021 big rig: 8/29/2022</sup> 10/17/2022 Date drilling ceased 10/17/2022  
Date completion activities began 07/01/2023 Date completion activities ceased 10/24/2023  
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 440' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 895' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 339' & 434' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**APPROVED**

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WV Department of Environmental Protection

Reviewed by:  
*[Signature]*  
**02/23/2024**

API 47- 051 - 02353 Farm name Xcl Midstream Operating, LLC Well number Van Winkle S-20HU

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	38"	30"	110'	NEW	118.65#	N/A	Y
Surface	26"	20"	514'	NEW	106.5#	N/A	Y
Coal	26"	20"	514'	NEW	106.5#	N/A	Y
Intermediate 1	17 1/2"	13 3/8"	2,214'	NEW	54.5#	N/A	Y
Intermediate 2	12 3/8"	9 5/8"	10,265'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	26,743'	NEW	23#	N/A	Y
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	A	380	15.6	1.21	459	0	8
Surface	A	956	15.6	1.18	1128	0	8
Coal	A	956	15.6	1.18	1128	0	8
Intermediate 1	A	1726	15.6	1.18	2036	0	8
Intermediate 2	A	4093	14.5	1.31	5361	0	8
Intermediate 3							
Production	A	5760	17.5	1.16	6681	0	8
Tubing							

Drillers TD (ft) 26,787' Loggers TD (ft) N/A  
 Deepest formation penetrated Utica Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 10,326'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 3 centralizers on surface casing at equal distance.  
Intermediate - 1 centralizer every other joint.  
 Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

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 WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_  
 JAN 22 2024

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_  
 WV Department of Environmental Protection

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_





Well # VAN WINKLE S-20HU (L027204) Final Formations API# 47-051-02353			
Formation Name	Drill Top MD (ftKB)	Drill Top (TVD) (ftKB)	Drill Btm MD (ftKB)
Sand/Shale	1	1	339
Sewickley Coal	339	339	434
Pittsburgh Coal	434	434	440
Sand/Shale	440	440	1,477
Maxton	1,477	1,477	1,656
Big Lime	1,656	1,655	1,705
Big Injun	1,705	1,704	1,949
Weir	1,949	1,947	2,148
Berea	2,148	2,146	2,419
Gordon	2,419	2,417	2,491
Fifty Foot	2,491	2,488	3,083
Speechley	3,083	3,077	4,565
Benson	4,565	4,542	4,933
Alexander	4,933	4,905	5,580
Rhinestreet	5,580	5,542	6,019
Middlesex	6,019	5,974	6,095
Geneseo	6,095	6,049	6,122
Tully	6,122	6,076	6,158
Hamilton	6,158	6,112	6,227
Marcellus	6,227	6,180	6,277
Onondaga	6,277	6,230	6,514
Oriskany	6,514	6,463	6,636
Helderberg	6,636	6,582	7,011
Salina	7,011	6,948	8,182
Lockport	8,182	8,018	8,604
Rose Hill	8,604	8,387	8,921
Packer Shell	8,921	8,654	9,166
Clinton/Tuscarora	9,166	8,867	9,278
Juniata/Queenston	9,278	8,965	10,158
Reedsville	10,158	9,734	11,319
Utica	11,319	10,731	26,787

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Drill Btm (TVD) (ftKB)
339
434
440
1,477
1,655
1,704
1,947
2,146
2,417
2,488
3,077
4,542
4,905
5,542
5,974
6,049
6,076
6,112
6,180
6,230
6,463
6,582
6,948
8,018
8,387
8,654
8,867
8,965
9,734
10,731
11,249

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# Perforation Data

02/23/2024



Van Winkle S-20HU Perf Table

Data Source: EQT Corporation

Stage_Number	Perf_Date	Depth_Bottom	Depth_Top	Shot_Count	Formation
1	07/01/2023	26506	26323		48 Utica
2	07/02/2023	26198	26023		48 Utica
3	07/03/2023	25999	25824		48 Utica
4	07/03/2023	25800	25625		48 Utica
5	07/03/2023	25601	25426		48 Utica
6	07/04/2023	25405	25232		48 Utica
7	07/04/2023	25204	25029		48 Utica
8	07/04/2023	25003	24834		48 Utica
9	07/05/2023	24806	24631		48 Utica
10	07/05/2023	24607	24430		48 Utica
11	07/06/2023	24408	24233		48 Utica
12	07/06/2023	24209	24034		48 Utica
13	07/06/2023	24010	23835		48 Utica
14	07/06/2023	23811	23636		48 Utica
15	07/07/2023	23612	23437		48 Utica
16	07/07/2023	23414	23239		48 Utica
17	07/08/2023	23215	23040		48 Utica
18	07/08/2023	23014	22841		48 Utica
19	07/09/2023	22817	22642		48 Utica
20	07/09/2023	22618	22443		48 Utica
21	07/09/2023	22419	22244		48 Utica
22	07/10/2023	22217	22045		48 Utica
23	07/10/2023	22022	21847		48 Utica
24	07/10/2023	21822	21647		48 Utica
25	07/10/2023	21619	21449		48 Utica
26	07/11/2023	21425	21250		48 Utica
27	07/11/2023	21222	21047		48 Utica
28	07/11/2023	21027	20852		48 Utica
29	07/11/2023	20828	20653		48 Utica
30	07/12/2023	20629	20454		48 Utica
31	07/12/2023	20430	20255		48 Utica
32	07/12/2023	20231	20056		48 Utica
33	07/12/2023	20032	19857		48 Utica
34	07/13/2023	19833	19658		48 Utica
35	07/14/2023	19634	19459		48 Utica
36	07/14/2023	19436	19261		48 Utica
37	07/14/2023	19237	19062		48 Utica
38	07/15/2023	19038	18863		48 Utica
39	07/15/2023	18839	18664		48 Utica
40	07/15/2023	18640	18465		48 Utica
41	07/15/2023	18441	18266		48 Utica
42	07/16/2023	18242	18067		48 Utica
43	07/16/2023	18043	17868		48 Utica
44	07/16/2023	17844	17669		48 Utica

45 07/16/2023	17647	17470	48 Utica
46 07/17/2023	17444	17269	48 Utica
47 07/17/2023	17248	17073	48 Utica
48 07/17/2023	17049	16874	48 Utica
49 07/17/2023	16850	16675	48 Utica
50 07/18/2023	16651	16476	48 Utica
51 07/18/2023	16452	16277	48 Utica
52 07/18/2023	16253	16078	48 Utica
53 07/18/2023	16054	15879	48 Utica
54 07/18/2023	15855	15680	48 Utica
55 07/19/2023	15656	15481	48 Utica
56 07/19/2023	15458	15283	48 Utica
57 07/19/2023	15259	15084	48 Utica
58 07/20/2023	15060	14885	48 Utica
59 07/20/2023	14861	14689	48 Utica
60 07/20/2023	14662	14487	48 Utica
61 07/20/2023	14463	14288	48 Utica
62 07/20/2023	14264	14089	48 Utica
63 07/21/2023	14065	13890	48 Utica
64 07/21/2023	13866	13691	48 Utica
65 07/21/2023	13667	13492	48 Utica
66 07/22/2023	13469	13294	48 Utica
67 07/22/2023	13270	13095	48 Utica
68 07/22/2023	13071	12896	48 Utica
69 07/22/2023	12872	12697	48 Utica
70 07/22/2023	12675	12498	48 Utica
71 07/23/2023	12474	12299	48 Utica
72 07/23/2023	12277	12102	48 Utica

# Stimulation Data

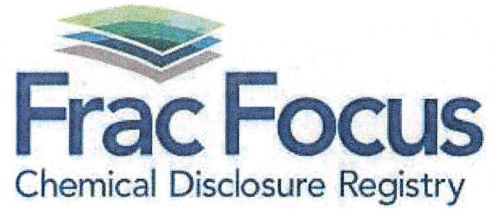
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Stimulation_Date	Stage_Number	Avg_Pump_Rate	Avg_Treatment_Pressure	Pressure_Breakdown	ISIP	Prop_Total	Volume_Total_Calc	Proppant_Type	Proppant_Mesh_Size
8/29/2023	1	76	11623		9552	7655	492840	12266.94 Sand	100 MESH; 40/70;
7/2/2023	2	78	12179		9286	12151	493840	9371 Sand	100 MESH; 40/70;
7/3/2023	3	74	11735		9264	7516	490440	9612 Sand	100 MESH; 40/70;
7/3/2023	4	76	11772		9459	7629	486740	9339 Sand	100 MESH; 40/70;
7/3/2023	5	82	11894		9351	8208	497440	9454 Sand	100 MESH; 40/70;
7/4/2023	6	84	12000		9725	8260	489920	9377 Sand	100 MESH; 40/70;
7/4/2023	7	76	11395		10269	8376	494380	9248 Sand	100 MESH; 40/70;
7/4/2023	8	83	12137		9330	8042	491940	9203 Sand	100 MESH; 40/70;
7/5/2023	9	75	11567		9084	8062	490920	9180 Sand	100 MESH; 40/70;
7/5/2023	10	78	11806		9138	8051	489640	8739 Sand	100 MESH; 40/70;
7/6/2023	11	78	11546		9506	8186	497160	9437 Sand	100 MESH; 40/70;
7/6/2023	12	77	11650		8900	7757	398760	8479 Sand	100 MESH; 40/70;
7/7/2023	13	79	11666		8351	7624	491700	8838 Sand	100 MESH; 40/70;
7/7/2023	14	80	11474		9056	10948	496900	9336 Sand	100 MESH; 40/70;
7/7/2023	15	84	11671		8747	7908	490200	9318 Sand	100 MESH; 40/70;
7/8/2023	16	80	11306		8417	7933	490420	9134 Sand	100 MESH; 40/70;
7/8/2023	17	85	11826		8541	7652	492820	9079 Sand	100 MESH; 40/70;
7/9/2023	18	84	11763		8683	7854	494620	9294 Sand	100 MESH; 40/70;
7/9/2023	19	85	11878		8372	7852	494820	8861 Sand	100 MESH; 40/70;
7/10/2023	20	85	11509		8530	7823	490980	9163 Sand	100 MESH; 40/70;
7/10/2023	21	85	11448		8224	7679	490740	9257 Sand	100 MESH; 40/70;
7/10/2023	22	84	11382		8227	7848	490240	9198 Sand	100 MESH; 40/70;
7/10/2023	23	85	11313		8765	8498	486610	9199 Sand	100 MESH; 40/70;
7/11/2023	24	85	11164		8332	8033	490520	9092 Sand	100 MESH; 40/70;
7/11/2023	25	88	11302		8453	8212	491620	9073 Sand	100 MESH; 40/70;
7/11/2023	26	86	11129		8900	7956	490280	9145.268 Sand	100 MESH; 40/70;
7/11/2023	27	86	11485		8259	8105	487500	9157 Sand	100 MESH; 40/70;
7/11/2023	28	86	11764		8498	7697	485060	8918 Sand	100 MESH; 40/70;
7/12/2023	29	87	11413		8236	8374	490800	9004 Sand	100 MESH; 40/70;
7/12/2023	30	86	11144		8593	8372	492280	9214 Sand	100 MESH; 40/70;
7/12/2023	31	85	11090		8539	8462	490800	8986 Sand	100 MESH; 40/70;
7/13/2023	32	88	11184		8564	8384	487240	8909 Sand	100 MESH; 40/70;
7/13/2023	33	88	11362		8674	8419	488420	9035 Sand	100 MESH; 40/70;
7/13/2023	34	84	11262		8439	8123	490580	9114 Sand	100 MESH; 40/70;
7/14/2023	35	85	11141		8641	8350	492580	9166 Sand	100 MESH; 40/70;
7/15/2023	36	85	11168		8659	8139	490800	9160 Sand	100 MESH; 40/70;
7/15/2023	37	87	11513		8291	7595	491820	9070 Sand	100 MESH; 40/70;
7/15/2023	38	88	11755		8217	8035	493200	8976 Sand	100 MESH; 40/70;
7/15/2023	39	88	11372		8421	8215	447880	8800 Sand	100 MESH; 40/70;
7/16/2023	40	87	11726		8561	8565	491750	9047 Sand	100 MESH; 40/70;
7/16/2023	41	87	11544		8521	8693	490010	8860 Sand	100 MESH; 40/70;
7/16/2023	42	87	11329		8620	8182	492050	8889 Sand	100 MESH; 40/70;
7/16/2023	43	87	11161		8784	8069	492460	8954 Sand	100 MESH; 40/70;
7/17/2023	44	88	11288		8292	8065	493520	9101 Sand	100 MESH; 40/70;
7/17/2023	45	88	11190		8549	8437	492220	9008 Sand	100 MESH; 40/70;
7/17/2023	46	89	10947		8675	8037	489940	8881 Sand	100 MESH; 40/70;
7/17/2023	47	87	11122		8383	8101	492160	8902 Sand	100 MESH; 40/70;
7/17/2023	48	87	11577		8288	8399	491280	8723 Sand	100 MESH; 40/70;
7/18/2023	49	88	11558		8587	8197	493320	8743 Sand	100 MESH; 40/70;
7/18/2023	50	88	11118		8365	8246	493760	8903 Sand	100 MESH; 40/70;
7/18/2023	51	89	11031		8586	8361	493300	8884 Sand	100 MESH; 40/70;

7/18/2023	52	88	11447	8818	8273	488780	8820 Sand	100 MESH; 40/70;
7/19/2023	53	88	11578	8998	8335	492450	8739 Sand	100 MESH; 40/70;
7/19/2023	54	87	11646	9293	7836	491700	8815 Sand	100 MESH; 40/70;
7/19/2023	55	88	11283	9057	7728	491500	8777 Sand	100 MESH; 40/70;
7/20/2023	56	89	11535	8726	8402	491920	9862 Sand	100 MESH; 40/70;
7/20/2023	57	89	11223	8610	8604	492700	8342 Sand	100 MESH; 40/70;
7/20/2023	58	88	11040	8759	8679	491820	8673 Sand	100 MESH; 40/70;
7/20/2023	59	89	10989	8964	9117	491040	8743 Sand	100 MESH; 40/70;
7/20/2023	60	88	11200	8931	8277	491560	8773 Sand	100 MESH; 40/70;
7/21/2023	61	87	10982	8485	8109	489660	8738 Sand	100 MESH; 40/70;
7/21/2023	62	88	11051	8547	7800	488920	8721 Sand	100 MESH; 40/70;
7/21/2023	63	88	11029	8568	8189	491960	8994 Sand	100 MESH; 40/70;
7/21/2023	64	89	11004	9011	8197	490620	8908 Sand	100 MESH; 40/70;
7/22/2023	65	88	10770	8477	7921	496140	8479 Sand	100 MESH; 40/70;
7/22/2023	66	88	10878	9360	8236	490960	8619 Sand	100 MESH; 40/70;
7/22/2023	67	88	10737	8700	8042	490880	8916 Sand	100 MESH; 40/70;
7/22/2023	68	88	10956	8608	8103	452460	8309 Sand	100 MESH; 40/70;
7/23/2023	69	88	10823	8708	7840	493040	8450 Sand	100 MESH; 40/70;
7/23/2023	70	87	10638	8169	8173	488140	8632 Sand	100 MESH; 40/70;
7/23/2023	71	88	10470	8592	8276	509180	8721 Sand	100 MESH; 40/70;
7/2/2023	72	87	10465	8877	8256	505240	8742 Sand	100 MESH; 40/70;

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	08/22/2023
Job End Date:	09/22/2023
State:	West Virginia
County:	Marshall
API Number:	47-051-02353-00-00
Operator Name:	EQT Production
Well Name and Number:	Van Winkle S-20HU
Latitude:	39.781517
Longitude:	-80.727004
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11095
Total Base Water Volume (gal)*:	29465864.736
Total Base Non Water Volume:	0



Water Source	Percent
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### Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	EQT	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	87.17210	None
Sand (Proppant)	EQT	Proppant					
			Silica Substrate	14808-60-7	100.00000	12.49370	None
MX-5-3886	Multi-Chem	Bacterial treatment					
			Calcium nitrate	13477-34-4	100.00000	0.03549	None
7.5 HCl	Profrac	Acid					
			7.5 HCl	7647-01-0	7.50000	0.01686	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Copolymer of 2-propenamide	Proprietary	30.00000	0.00779	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					

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			Petroleum Distillate	64742-47-8	20.00000	0.00346	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Methanol	67-56-1	60.00000	0.00284	None
MX-8-4543	Multi-Chem	Bacterial treatment					
			Contains no hazardous substances in concentrations above cut-off values according to the competent authority	Proprietary	100.00000	0.00228	None
15 HCl	Profrac	Acid					
			15 HCl	7647-01-0	15.00000	0.00209	None
ProFE 105	Profrac	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00134	None
ProFE 105	Profrac	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00134	None
ProHib 100	Profrac	Acid Corrosion Inhibitor					
			Methanol	67-56-1	90.00000	0.00050	None
ProFE 105	Profrac	Iron Control					
			2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	60.00000	0.00048	None
ProFE 105	Profrac	Iron Control					
			2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	60.00000	0.00048	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00003	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00003	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Phosphonic Acid Salt	Proprietary	5.00000	0.00002	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Ammonium chloride ((NH4)Cl)	12125-02-9	1.00000	0.00001	None
ProHib 100	Profrac	Acid Corrosion Inhibitor					

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			Propagyl Alcohol	107-19-7	5.00000	0.00000	None
ProHib 100	ProFrac	Acid Corrosion Inhibitor					
			Isopropanol	67-63-0	5.00000	0.00000	None
ProHib 100	ProFrac	Acid Corrosion Inhibitor					
			Imidazoline	61790-69-0	5.00000	0.00000	None
ProHib 100	ProFrac	Acid Corrosion Inhibitor					
			Alcohols, C7-ISO, C8-RICH	68526-83-0	5.00000	0.00000	None
ProHib 100	ProFrac	Acid Corrosion Inhibitor					
			Xylene	1330-20-7	5.00000	0.00000	None
ProHib 100	ProFrac	Acid Corrosion Inhibitor					
			ethylbenzene	100-41-4	1.00000	0.00000	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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