Annual Environmental Report

2020

Mohill

D0277-01

CONTENTS

7 APPENDIX

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER

This Annual Environmental Report has been prepared for D0277-01, Mohill, in Leitrim in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

There was no major capital or operational changes undertaken in 2020.

1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- MOHILL WWTP - 2020 with a Plant Capacity PE of 1800, the treatment type is 3P - Tertiary P removal

1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF1700D0277SW001	MOHILL WWTP - 2020	Treated	Non-Compliant	BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l ortho-Phosphate (as P) - unspecified mg/l

1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER

Assessment / Report	Included in AER
There are no Licence Specific Reports included in the AER.	

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 MOHILL WWTP - 2020 - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - MOHILL WWTP - 2020

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
Suspended Solids mg/l	15	959	209.08
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	15	351	99.79
COD-Cr mg/l	15	641	251.21
Hydraulic Capacity	N/A	1511	854.32

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

The annual mean hydraulic loading is greater than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is greater than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the section ‘Operational Performance Summary’.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1700D0277SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Suspended Solids mg/l	10	25	N/A	15	N/A	N/A	3.59	Pass
pH pH units	9	9	N/A	15	N/A	N/A	7.78	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	2	4	N/A	15	4	1	1.72	Fail
Ammonia-Total (as N) mg/l	0.2	0.4	N/A	15	1	N/A	0.18	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.1	0.2	N/A	15	3	3	0.09	Fail
COD-Cr mg/l	N/A	N/A	N/A	15	N/A	N/A	17.31	
Conductivity @20°C µS/cm	N/A	N/A	N/A	4	N/A	N/A	62.03	
Odour Descriptive	N/A	N/A	N/A	11	N/A	N/A	N/A	
Visual Inspection Descriptive	N/A	N/A	N/A	11	N/A	N/A	N/A	

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
Appearance (on Sampling) Descriptive	N/A	N/A	N/A	2	N/A	N/A	N/A	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

Cause of Exceedance(s):

Plant performance is good but low ELVs make 100% compliance difficult

Significance of Results:

Effluent exceedances were minor in 2020.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1700D0277SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Upstream	208893, 297529	RS26R020006	No	No	No	No	Poor

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Downstream	209051, 296218	RS26R020057	No	No	No	No	Poor

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
BOD - 5 days (Total) mg/l	RS26R020006	2.16	RS26R020057	2.09	1.5	-4.7
Ammonia-Total (as N) mg/l	RS26R020006	0.06	RS26R020057	0.12	0.07	96.6
ortho-Phosphate (as P) - unspecified mg/l	RS26R020006	0.08	RS26R020057	0.11	0.04	60.3
pH pH units	RS26R020006	7.27	RS26R020057	7.36		
Total Nitrogen mg/l	RS26R020006	1.27	RS26R020057	3.46		
Dissolved Oxygen mg/l	RS26R020006	10.16	RS26R020057	10.98		
Temperature °C	RS26R020006	11.7	RS26R020057	12.82		
Dissolved Oxygen % O2	RS26R020006	93.64	RS26R020057	103.34		

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The ambient monitoring results does not meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

Based on ambient monitoring results a deterioration in Ammonia, BOD, Ortho-Phosphate and Total Nitrogen, concentrations downstream of the effluent discharge is noted.

A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.

Other causes of deterioration in water quality in the area are: Cattle accessing stream at downstream sampling location.

The discharge from the wastewater treatment plant does have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - MOHILL WWTP - 2020

2.1.4.1 Treatment Efficiency Report - MOHILL WWTP - 2020

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
SS	69290	1105	98
TP	N/A	N/A	N/A
cBOD	33071	529	98
TN	N/A	N/A	N/A
COD	83249	5333	94

Note: The above data is based on sample results for the number of dates reported

2.1.4.2 Treatment Capacity Report Summary - MOHILL WWTP - 2020

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

MOHILL WWTP - 2020	
Peak Hydraulic Capacity (m³/day) - As Constructed	400
DWF to the Treatment Plant (m³/day)	400
Current Hydraulic Loading - annual max (m³/day)	1511
Average Hydraulic loading to the Treatment Plant (m³/day)	854.32
Organic Capacity (PE) - As Constructed	1800
Organic Capacity (PE) - Collected Load (peak week)[Note1]	1285
Organic Capacity (PE) - Remaining	515
Will the capacity be exceeded in the next three years? (Yes/No)	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

2.1.5 SLUDGE / OTHER INPUTS - MOHILL WWTP - 2020

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2020.			

3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	WWTP upgrade required to meet ELV	1	Yes	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2020	1
Number of Incidents reported to the EPA via EDEN in 2020	1
Explanation of any discrepancies between the two numbers above	N/A

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW2	209065, 296378	Yes	Low	Meeting	170	47816	Monitored
SW3	209047, 296669	Yes	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	208960, 296973	No	Low	Not yet Assessed	Unknown	Unknown	Not Monitored
TBC	209051, 296350	No	Low	Meeting	Unknown	Unknown	Unknown

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	Yes

SWO Summary	
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	Yes

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS.

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0277-SIP:01	Any works that may be required under Condition 5.6	C	22/12/2015	Yes	Not Started		Capital works not funded in RC3. Capital works funding post 2024 will be contingent on the project being included in the 2025-2029 investment period.

A summary of the status of any improvements identified by under Condition 5.2 is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
There are no Improvements Programme for this Agglomeration.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Table.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Drinking Water Abstraction Point Risk Assessment	Yes	2015	No	
Priority Substances Assessment	Yes	2012	No	
Toxicity/Leachate Management	Yes	2012	No	

5.1 DRINKING WATER ABSTRACTION POINT RISK ASSESSMENT

The Drinking Water Abstraction Point Risk Assessment Report has been included in the AER 2015

5.2 PRIORITY SUBSTANCES ASSESSMENT

The Priority Substances Assessment Report has been included in the AER 2012

5.3 TOXICITY/LEACHATE MANAGEMENT

The Toxicity/Leachate Management Report has been included in the AER 2012

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	Yes
List reason e.g. additional SWO identified	Additional Storm Water Overflows identified.
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Signed: Date: 06/07/2021

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of ,

Katherine Walshe

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

Parameter	Ammonia N	Appearance (D)	Odour (D)	Ortho-Phosphate P	pH	Total Nitrogen N	Temperature	Dissolved Oxygen % Saturation	Biological Oxygen Demand	Dissolved Oxygen % Saturation	Dissolved Oxygen % Saturation	Dissolved Oxygen	Suspended Solids
Max.	0.14	--	--	0.075	Varies	--	--	Varies	Varies	119	119	--	--
Min.	--	--	--	--	Varies	--	--	Varies	--	81	81	--	--
T-nt Method	--	--	--	--	--	--	--	--	--	--	--	--	--
Analyst Conclusion	mg/l	Descriptive	Descriptive	mg/l	pH units	mg/l	Dwerees C	% O2	mg/l	% Sat.	%	mg/l	mg/l

Archived	Category	Entity	Entity Reference	Station	Station Reference	Station Eastine	Station Northine	Laboratory	River Basin District	Surface Waterbody	Ground Waterbody	Sample Template	Sample Reference	Sample Date	Sample Time	Sample Method	Sampled By	Reason	Comments	Conclusion
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W014	3-Feb-2020	16:40	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W066	18-Mar-2020	11:25	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W093	13-May-2020	13:40	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W101	27-May-2020	11:20	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W135	11-June-2020	14:10	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W157	2-July-2020	13:30	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W195	13-Aug-2020	13:10	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W204	1-Sep-2020	11:40	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W234	7-Oct-2020	13:30	Grab	Linda Doran	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - Downstream 90m From Wwtp	RS26R020057	209050	296219	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - d/s 90m from WWTP (	2035W280	24-Nov-2020	12:30	Grab	Linda Doran	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W013	3-Feb-2020	17:00	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W065	18-Mar-2020	11:40	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W092	13-May-2020	13:35	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W100	27-May-2020	11:10	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W134	11-June-2020	13:50	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W156	2-July-2020	13:45	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W194	13-Aug-2020	12:50	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W203	1-Sep-2020	11:30	Grab	Grant Sexton	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W233	7-Oct-2020	13:05	Grab	Linda Doran	Compliance	-	-
Yes	River Quality	Rinn	26R02	Mohill D0277-01 - U/S At Mohill Business Park	RS26R020006	208888	297529	Roscommon Co Co	Shannon	River: RINN_010	Mohill	Mohill WWTP Licence D0277-01 - u/s at Mohill Busin	2035W270	24-Nov-2020	12:15	Grab	Linda Doran	Compliance	-	-

Ammonia N	Appearance (D)	Odour (D)	Ortho-Phosphate P	pH	Total Nitrogen N	Temperature	Dissolved Oxygen % Saturation	Biological Oxygen Demand	Dissolved Oxygen % Saturation	Dissolved Oxygen % Saturation	Dissolved Oxygen	Suspended Solids
0.038	Normal	Normal	0.07	7.34	1.7	6.4	92.5	1.6			11.39	
0.068	Normal	Normal	*0.121*	7.14	1.2	6.6	96.6	1.2			12.02	
0.02	Normal	Normal	*0.125*	7.69	8.9	12.3	102.6	1.5			11.09	
0.023	Normal	Normal	*0.09*	7.89	3.3	19.6	*150.3*	< 1			14.11	
0.584	Normal	Normal	*0.155*	7.29	7.7	16	108.3	*4.1*			10.81	
0.04	Normal	Normal	*0.093*	7.22	2.8	14.2	91.2	1.6			9.42	
0.027	Normal	Normal	*0.12*	7.39	2.8	18.7	117.7	1.4			10.84	
0.277	Normal	Normal	*0.1*	7.29	3	13.6	90.5	2.5			9.77	
0.08	Clear	Normal	*0.077*	7.2	1.7	11.7	93.1	2.2			10.03	
0.076	clear, tan colour	none	*0.096*	7.19	1.5	9.1	90.6	*3.8*			10.31	
0.052	Normal	Normal	0.064	7.49	1.3	5.7	94.8	1.5			11.88	
0.035	Normal	Normal	0.065	7	1.4	6.5	95.8	< 1			11.89	
0.033	Normal	Normal	0.071	7.7	1.3	9.8	102.5	1.8			11.7	
0.035	Normal	Normal	0.056	7.21	0.7	14.8	85.2	< 1			8.81	
0.04	Normal	Normal	0.054	7.34	1.1	13.5	86.6	*2.8*			9.04	
0.034	Normal	Normal	*0.091*	7.31	1.3	14.2	98.2	*3.9*			10.01	
0.04	Normal	Normal	*0.115*	7.12	1.1	17.3	92	1.3			8.66	
0.347	Normal	Normal	*0.148*	7.17	1.4	14.5	97.1	2.1			9.37	
0.054	Clear	Normal	*0.082*	7.19	1.3	11.2	96.1	2.4			10.43	
0.035	clear, tan colour	none	*0.096*	7.2	1.8	9.5	88.1	*3.8*			9.84	